Linguistic Complexity
The Influence of Social Change on Verbal Inflection
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### Abbreviations

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<td>Act</td>
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<tr>
<td>Agr</td>
<td>Agreement</td>
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<td>Asp</td>
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<td>Excl</td>
<td>Exclusive</td>
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<td>F(em)</td>
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<td>Fut</td>
<td>Future</td>
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<td>Incl</td>
<td>Inclusive</td>
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Other abbreviations are introduced in the text when relevant. For reasons of presentation, the abbreviations above often appear in shorter form in the text below, like f(em), pl(ur) imp(ef), etc.
1. Introduction

1.1 Complexity in linguistics

To non-linguists the case is clear-cut: languages differ with respect to their level of complexity. Often people evaluate their own language as easy and logical, with the rules of school grammar in mind. When confronted with apparent irregularities signalled by non-natives, they try to provide instant (etymo-)logical explanations for these anomalies. On the other hand, non-linguists often appreciate their own language for its wealth of intricacies and its subtle elaborate ways of conveying direct and indirect meanings. In this line of thinking, non-native users of one's own language are looked upon with sympathy, while one realises that there always remains a residue in the language which is unlearnable for non-native speakers. These two attitudes are apparent in general language journals for the non-professional, such as the Dutch Onze Taal, ‘Our Language’. In its Letters to the Editor section the general public shows itself conscious of peculiarities and inconsistencies found in daily speech, while the readers are also looking for norms and standards that motivate these complexities with the help of some notion of logic.

Non-linguists tend to rank non-native languages on a complexity scale. Such judgements are usually based on the (perceived) distance of a foreign language from one’s own language. Dutch speakers, then, consider English and Norwegian as easier languages than French and Arabic. Personal experience and folk opinions also play a role: Malay is widely known as an easy language to learn, while languages like Chinese or Thai are looked at with awe because of their complex writing system and their tonality. When asked what aspects are considered to be difficult in a foreign language, informed laymen mention: difficult sounds (Arabic), a large number of writing conventions to be learnt by rote (Chinese), whimsical conjugations (Russian), elaborate case systems (Finnish), a lexicon that does not correspond to one’s own (Inuit), and lack of correspondences in the word shapes in the foreign and the native language (non-Indo-European languages). When discussing these aspects more thoroughly, non-linguists are soon convinced by professional linguists: all languages are equally complex, they are told, because the question of what one considers as complex is relative to one’s own language, and moreover, there are so many aspects in language that are candidates for complexity that all languages must have some complex and some simple domains, which eventually balance each other out.

However, perhaps the layman is convinced too soon. Indeed many aspects which one may consider complex are dependent on one’s own language, and indeed writing and speech are often confused. Nevertheless, in this dissertation I wish to argue that some languages are more complex for an ‘outsider’ than others, at least with respect to the domain of verbal inflection. Secondly, I will argue that with respect to verbal inflection, languages become simpler, that is, better adapted to outsiders, when spoken in specific social conditions. In the remainder of this chapter I will elaborate on my definition of complexity and on the choice for verbal inflection as a research domain. In this section I will review the discussion of notions of complexity in (the history of) linguistics, because there are few terms in linguistics that provoke so much opposition as the term ‘complexity’.

For instance, in a textbook for undergraduate students on language change McMahon (1994: 324) states: “[M]odern languages, attested extinct ones, and even reconstructed
ones are all at much the same level of structural complexity or communicative efficiency.” McMahon does not, however, discuss the criteria for evaluating what would count as differences in complexity or efficiency, neither does she provide any supportive empirical evidence for this claim. In this quotation the term ‘complexity’ is simply dismissed. Other claims go further: in research domains like creole studies where academic recognition has been fairly recent, allegations that certain languages are simpler than others are not seldom considered as attacks on the discipline itself, or on the speakers of the languages in question. Some creolists suspect that behind the measurement of complexity the measurement of skulls is hidden, when people dare to hypothesise that Creole languages might be simpler than other languages. DeGraff (2001: 226), one of the most zealous opponents of the use of the notion of ‘simplicity’ in creole studies, states: 

“I take it that, in the absence of ‘explicit and precise definitions and operational tests’ this most simplistic proposition [‘the world’s simplest grammars are Creole grammars’, WK] can provide us with only a mismeasure of Creole languages and, indeed, a mismeasure of Creole SPEAKERS if one assumes a Cartesian (or Humboldtian) approach whereby languages are properties of minds.”

DeGraff is right in one respect: when arguing about notions like simplicity or complexity, these need ‘precise definitions and operational tests’, like any scientific term (cf. Kusters & Muysken 2001), and in the next section and Chapter 2 I will provide these. However, DeGraff suggests that without such definitions ‘complexity’ is somehow a dangerous term. The danger would consist in taking a connection between language complexity and cultural or cognitive characteristics for granted. Gil (2001: 326) writes about this fear:

“…[S]ome people seem to think that if one language were shown to be more complex than another, then it would follow that the latter language is in some sense inferior, which in turn would entail that the speakers of that language are inferior, and from here we’re only one short step to ethnic cleansing.”

Such reactions as described by Gil (2001) have a historical background; they are based on a dismissal of the 19th century German movement of philosophical idealism and romanticism, and they associate modern notions of complexity with refuted ideas from that period, like Social-Darwinism. DeGraff (2001: 225ff.) makes a direct link with early 19th century linguists, when he consistently uses the term ‘(neo)-Schleicherian linguistics’ in his discussions of ‘simple grammars’.

Indeed German thinkers like Schleicher but also, for instance, von Humboldt, Schelling, Schlegel, and Steinthal related the supposed high level of European culture and thought to the assumed complexity of the Indo-European languages. In the background, the philosophical current of Kantian and Hegelian idealism in the first half of the 19th century played a role, in which a priori philosophical justification was sought for the existence of the ego, the world and the relation between these two. In addition to Kantian categories like time and space, the German idealists speculated about language as the pre-condition or framework, which subjects needed to interact with each other and the world (cf. Formigari 1999: 230ff.). In the same period attention was paid to variation in both European and non-European languages. In combination with Herder’s thoughts on the common fate of people, cultures and nations, this led to the idea that language was the location or the framework where the character of a people or a nation found its

1 Capitals in original.
Complexity in linguistics

Most attention was paid to inflectional morphology as the domain where different cultures could express themselves. Typologies in terms of isolating, agglutinative, flexional and incorporating languages were conceived in this period. Although the ideas about relations between the spiritual development of a people and their inflectional morphology were not as straightforward and Eurocentric as is often thought today (cf. Davies 1992: 104ff.), it was commonly thought that the languages held in high esteem by the linguists were also the most perfect languages. These were first of all, Sanskrit and furthermore, Greek and Latin and the less ‘pure’ flexional modern Indo-European languages. Indo-European languages were considered to be ‘organic’ in contrast with the more mechanical ways of speech of agglutinative languages (Schlegel 1808). According to von Humboldt, the flexional mode of word formation lent itself better to complex thought than the other modes.

On the question of why some languages might be better than others, opinions differed. Some authors, like Schleicher, held that complex European languages had needed more time to develop their complex inflections while Turkish and Chinese, for instance, would still be in their infancy. To others, e.g. von Humboldt and Schlegel, the types of language were set once and for all in early mythical times when a people were created, and the spirit put itself in either an agglutinative, flectional, or an isolating mode. With the latter authors, the question of ‘natural history’, age and real time does not play a role. They thought that the history of language was part of the unfolding of ‘spiritual history’, which was not a natural, factual one, but an ideal history more comparable to the derivation of surface phenomena from a deep structure, or logical conclusions from premises (cf. Formigari 1999: 239). Nevertheless, there was agreement with respect to the question of complexity itself. Davies (1992: 218) notes: “[T]here seemed to be agreement in the assumption that the various languages could somehow be arranged in an ascending scale, parallel perhaps to the great chain of beings or at any rate to the increasing complexity of natural organisms.”

In the late 19th century, Idealism and Romanticism were no longer fashionable. The Junggrammatiker positioned language firmly within the physical realm of natural phenomena, and cut the links with the history of the ‘Geist’, or national character. Because of their stricter methodology they were critical of speculations on mythical pasts of culture and language. In addition, morphological typologies became less popular; comparisons between languages became more focussed on genetic relations instead of structural similarities, which had been (con)fused in earlier days.

In the advent of structuralism notions like simplicity and complexity became even less popular; American linguists like Sapir and Boas rooted themselves in cultural and

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2 “Die Sprache ist gleichsam die äussere Erscheinung des Geistes der Völker; ihre Sprache ist ihr Geist und ihr Geist ihre Sprache…”

3 Often the perspective was more nuanced, especially with Von Humboldt, who assumed in a Hegelian fashion that in spite of all differences, all languages were manifestations of one universal developing spirit in becoming.
linguistic relativism and opposed suggestions that languages (or cultures) could be ranked in terms of some universal yard-stick. Instead, each language had to be described in its own terms. Although Sapir (1921) created a comprehensive morphological typology, by that time the approach did not aim to compare, let alone judge, languages, but rather sought to provide a broad framework that could encompass all languages. Sapir (1921: 219) stated in a frequently quoted passage: “Both simple and complex types of language of an indefinite number of varieties may be found spoken at any desired level of cultural advance. When it comes to linguistic form, Plato walks with the Macedonian swineherd, Confucius with the head-hunting savage of Assam.” Thus, for a long period of time, notions of complexity were no longer used in discussions about the cultural embedding of language.

After the Chomskyan revolution in the second half of the 20th century, the focus shifted to universalism and mentalism. Correspondences between languages and universals underlying languages were examined, and differences were explained in terms of some underlying uniformity. In mainstream linguistics, the study of the relation between structural differences and social or cultural factors was largely ignored, especially when the structural differences were phrased in terms of complexity. Today in most theories embedded in a cognitive or formal framework, the question of whether a language is ‘complex’ is considered to lie outside the scope of research. Instead, the focus is on the cognitive mechanisms individuals employ to map meaning and form, and language is considered as an I-language (cf. Chomsky 1986).

Today, to the extent that discussions of complexity are not simply dismissed as irrelevant, it is still mainly associated with the context of 19th century evaluations of culture (cf. the quotes given above, or the name of the chapter in which Aitchinson (1991: 210) discusses ‘complexity’: “Progress or decay?”). Modern darwinian concepts without evaluative connotations, like adaptation, functional selection, and punctuated equilibrium are widely used in studies in ‘linguistic ecology’ (a prime example is Mühlhäusler 1995a), in diachronic studies like Dixon (1997), as well as in many other branches of social sciences. However, in cases where ‘complexity’ and ‘simplification’ are used, these are limited to 19th century Social-Darwinism, instead of 20th or 21st century sociobiology or neo-Darwinism. This paralysing grip of historic complexes on the contemporary linguistic discourse is unfortunate. It prevents linguistics from taking advantage of later more sophisticated versions of Darwinism. Moreover, it prevents elaborating on other associations between complexity and culture made in the history of thought and linguistics. That is, the opposite viewpoint to the equation of complex language = complex culture has been taken as well, namely, that simple languages would be the optimal vehicles of civilisation. For instance, it has been argued by French Enlightenment thinkers that complex languages have unnecessary decorations that impede efficient communication, mutual cooperation and therefore social and cultural progress. Destutt de Tracy (1805) and Butet (1801) argued that needless irregularities in language hamper the efficient unfolding of universal reason (cf. also Hassler 1999: 209ff.). From that point of view simplicity and efficiency are conceived as ideals. In the 20th century, Jespersen (1922: 324) is known for the idea that modern analytical languages would be better than complex inflectional languages because they allow maximum communicative efficiency: “[T]hat language ranks highest which goes furthest in the art of accomplishing much with little means, or, in other words, which is able to
1.2 Definition of complexity

Let us first elaborate on the analogy between a language and a forest. Suppose we have a forest with different kinds of trees and with an apparently random distribution of these trees over an area (forest 1). Suppose we have also an artificially planted forest with only express the greatest amount of meaning with the simplest mechanism.” Efficient communication and learnability have also been the ideals of many attempts to construct and plan new languages (cf. Eco 1993). In fact, both simplicity and complexity can be taken as an ideal, depending on what is thought to be the ideal purpose and context of language. In the rest of this study I will remain impartial on the question of whether a simple or a complex grammar is ‘good’ or ‘bad’. I will take into account, however, the influence of language policies on language change, in which often judgements concerning complexity are expressed.

While it remains the consensus view that there are no differences in over-all complexity, the thoughtless repetition of this claim may lead to inconsistencies. On the one hand the existence of complexity may be denied, while at the same time the notion of complexity may be used in one and the same text. For instance, when Dixon (1997: 23) discusses the question of ‘who borrows from who?’ he writes: “If language X is more complex than language Y, then speakers of X will find it easier to learn and speak Y, as a second language, than the other way round”, and in a note on p. 75: “there is no doubt that one language may have greater overall grammatical complexity and/or a communicative advantage in a certain sphere, over another.” However, in the same book, he pays lip-service to the linguistic equi-complexity dogma, when he writes (1997: 65) (text between parentheses left out):

“…it is a fact that all the languages presently spoken in the world are about equal in complexity. There is nothing that could be called a ‘primitive language’. When a pidgin develops into a creole within just a couple of generations it becomes a linguistic system comparable in complexity to any well-established language - in terms of size of vocabulary and richness of grammatical resources.”

Such split attitudes with respect to the notion of ‘complexity’ fit in well with the historical background I sketched above.

In spite of this controversial history of notions of ‘complexity’, the term ‘complexity’ remains a frequently used term in various domains of linguistics. In second language research, Klein and Perdue (1997) wrote on the differences between basic, communicatively barely efficient languages of second language learners and complete languages, as spoken by native speakers in terms of complexity. Although their approach has been criticised (cf. Bierwisch 1997; Meisel 1997b; Schwartz 1997), criticisms were not directed at their use of the notion of ‘complexity’. In dialectology, especially when koiné’s are dealt with, complexity and simplification are also common terms (cf. Andersen 1988; Trudgill 1986). In contact linguistics (e.g. Mühlhäusler 1974; Winford 1998) simplification is also used as a notion without immediate association to evaluative judgements as long as it does not take a too prominent position.

In summary, both laymen and linguists have diverse attitudes with respect to the term complexity. The discussion on complexity is on the one hand contaminated by 19th century eurocentrism, while on the other hand it is often unclear what the exact meaning of ‘complexity’ is. I will now explain how I define complexity.
one kind of tree that all stand in ordered lines (forest 2). Could we say that forest 1 is more complex than forest 2? No, not in absolute terms: although the distribution of trees over the area may be easily describable in mathematical terms, such a form of mathematical simplicity does not lie at the basis of simplicity for all kinds of ‘forest users’. For instance, perhaps for a rabbit forest 1 is simpler, that is, easier to live in, in case it wants to dig a hole or hide from hunters. For a forester, however, forest 2 may be simpler, in the sense that it is easier to gain profit from a planned forest. A walker might also prefer forest 2 as its layout would make walking easier. However, forest 1 might suit the walker’s purpose just as well because it would have more salient recognition marks.

The morale of this story is that there is no way to define complexity without being specific about to whom a language is or is not complex. In other words complexity is not a simple predicate attributable to language but a relation between two entities: a language and someone who evaluates the language.

Then, there are two ways of defining ‘complexity’, depending on the kind of person who makes the evaluation. First of all, it may be argued that complexity is only an interesting notion when formally defined within a particular linguistic theory and embedded in a larger framework. For example, we could base the notion of complexity on the number of specific rules of a theory needed to account for all forms within a particular domain. In this case the linguist, employing a specific theory, is the one who evaluates complexity, and research in ‘complexity’ would consist of comparing various languages in a linguistic theory. In that way we would not need to examine how the forms in question are processed by different kinds of language users like foreigners, or children. Whether such a measure of complexity would still be related to difficulties as experienced by actual language users would be at most a peripheral question.

Though this kind of complexity may be interesting, my concept of complexity is different. My starting point is the experience of actual language learners and the stumbling blocks in actual language use. My definition of complexity is based on empirical research in these domains instead of on theoretical developments within linguistic theories. The person who makes the evaluations in my concept of complexity is a so-called ‘outsider’. I define an outsider as a second language learner, who is not acquainted with the speech community of which s/he is learning the language, and who wants to use the language in order to transmit meaningful messages. Now, I define complexity as the amount of effort an outsider has to make to become acquainted with the language in question.

In order to examine what this means, I identify three dimensions of language processing where outsider complexity plays a role. In section 2.2 I will elaborate further on these three dimensions:

I. An outsider is someone who learns the language in question at a later age, and is not a native speaker. Therefore, phenomena that are relatively difficult for a second language learner in comparison with a first language learner are more complex under my definition. Phenomena that are easy to acquire for a second language learner but difficult for a first language learner are less complex.

II. An outsider does not have much shared (linguistic and non-linguistic) background knowledge with other members of the speech community in question. She will therefore make progress with a language that is relatively easy to perceive and understand. In contrast, production difficulties of a language are less hindering for an
outsider, because she may adapt the difficult production phenomena to some kind of imperfect second language form, which, of course, she cannot force other native speakers to adopt. A language in which perceptual processing is relatively easy in comparison with production is therefore less complex under my definition.

III. An outsider is probably primarily interested in clear transmission of information, and less interested in learning a language for all kinds of symbolic meanings, such as expressing personal and group identity and aesthetic feelings. Therefore phenomena that do not have a mainly functional purpose are considered to be more complex under my definition.

When taking such an approach, we do not relate the definition of complexity to a specific linguistic theory, and it is less dependent on changes in linguistic theories. However, ideally spoken, a perfect linguistic theory should be able to explain all language use phenomena, and there should be no gap between a definition based on a practice of language use and a theoretically inspired definition. Nevertheless, at the moment there is no theory that deals with both language production, language perception, L1 acquisition, and L2 acquisition all at once, and in which, moreover, the complexities as experienced by an outsider follow from the theory. As long as there is no such theory, I will elaborate my definition of complexity on the basis of the actual differences that have been found between the kinds of language processing.

1.3 Methodology

After elaborating on the content of complexity for the domain of inflection in Chapter 2, I will show in Chapters 4 to 7 that languages differ with respect to ‘outsider’ complexity. Moreover, I will argue that these differences are related to the social and cultural history of the communities in which these languages have been spoken. I assume that in different communities the distribution of the types of language processing, mentioned under the three points above in section 1.2, varies. My hypothesis indicates that a language which is more ‘adapted’ to an outsider, or in my terminology, less complex, is one where the speech community has had many L2 learners and where the language has focused on perception and the communicative function. In section 2.3 I will define this latter kind of community as a Type 2 community. In a Type 1 community, on the other hand, more emphasis is laid on L1 learning, production and symbolic use. In section 2.3 I will examine these communities in more depth.

Criticism to a comparative approach is formulated by Arends (2001: 181), who writes in a commentary on McWhorter (2001):

“To take a rather artificial example: Which grammar is more complex, the one with n rules, each of complexity C, or the one with 2n rules, each of complexity C/2? Although questions such as this cannot be easily answered, they should at least be addressed in a paper whose central thesis rests entirely on the concept of grammatical complexity.”

In order to meet such criticism I examine varieties that do not differ too much, like Icelandic, Faroese and Norwegian. Furthermore, I examine varieties that stem from one mother language. In each instance the mother community is a Type 1 community: Old

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4 At least in one instance my account of complexity differs from a theory-driven account of complexity. That is, my evaluation of data from Quechua differs from the account given by Van de Kerke (1996a: 130), cf. also section 6.3.4, who reasons from the perspective of Baker (1985).
Introduction

Norse, Classical Arabic, Old Swahili, and Quechua II, while among the daughter varieties there is a range of varieties between Type 1 and Type 2. For the history of each of the daughter varieties the older stage is the same, and the differences in later stages can be profitably related to the diverging sociolinguistic histories. This implies also that in all four case-studies the original language of a speech community must have spread over a larger area and split into several daughter varieties. Therefore, this dissertation can also be conceived as a study of the effects on verbal inflection when a language enters an expansion phase. I examine in addition to the spread of Scandinavian, also the fate of Classical Arabic after the spread of Islam, the history of Quechua, before and after the Inca expansion, and the more recent history of Swahili expansion as a result of rapid modernisation in East Africa. These four cases, not only represent four language families, but also represent various inflectional systems, traditionally called flexional, infixed, agglutinative, prefixal and suffixal. In addition these four cases are excellent study objects, since both expansion and non-expansion varieties are relatively well-known, while in each language group differences with respect to complexity have emerged.

By examining four typologically diverse groups, I hope to eschew the Eurocentric bias which was common before. The great cycles that have been proposed for the change from simplicity to complexity (under some definition), and from complexity to simplicity, were mostly based on the history of European languages (cf. Bever & Langendoen 1971; Hodge 1970; Meillet 1921). In this work, I will show that the typical Indo-European way of simplification is only one of several scenarios, and moreover, that this way hides the finer mechanisms which only become apparent when taking non-Indo-European languages into account.

Eurocentrism is also avoided because I do not take a European language as standard for either complexity or simplicity, and the division into Type 1 and Type 2 communities applies to all communities. Moreover, in this definition no evaluative judgement is assumed: neither complexity nor simplicity are taken to be of a higher value. Only when one of these types of speech community or one of the dimensions of language processing is taken as more valuable than the other, do value judgements come into play (cf. section 8.3).

My approach concurs with work by various other authors. In dialectology, it has been argued by Braunmüller (1984, 1990), Andersen (1988) and most vigorously by Trudgill (1992, 1996, 1997, 2001) that languages differ in complexity, both in their phonology, morphology and syntax, and that these differences can be related to characteristics of speech communities. For a different language area than Europe, namely, Melanesia, Thurston (1987, 1992) has argued that elaborateness, esotericity and complexities are more likely to be found in small closed speech communities, where the language has a more symbolic than a communicative function (cf. also Hymes 1971: 73). Work in creole studies like McWhorter (2001), and in areal and historical linguistics by Nichols (1992) has also inspired the approach taken here. This study differs from most other typological work by its ecological and historical perspective. I do not relate variations and patterns between languages to one abstract communication situation, with supposed ‘competing motivations’ (cf. Haiman 1985). Instead I examine whether the differences between languages are related to different compositions of ‘competing motivations’ found in the actual histories of speech communities.
Absent in this study is the opposite question: what happens to a ‘simple’ language when the speech community in which it is spoken changes from Type 2 to Type 1? Does an increase of inflectional complexity correlate with a shift from a Type 2 to a Type 1 community? And, in what ways do languages change towards complex morphology? Although these questions are interesting and relevant, I do not examine them further.

First of all, complications of inflection have a more haphazard character. When a speech community shifts from Type 1 to Type 2, and it used to have complex inflection, my prediction is that such inflection is no longer allowed. When a community shifts from Type 2 to Type 1, however, complexities are allowed in inflectional morphology, but this does not imply that they necessarily emerge (cf. Sankoff 1990). Complexities may also emerge in other parts of the grammar. In other words, Type 1 communities permit complexities, while Type 2 communities restrict them. Therefore, predictions for a Type 1 community would be much weaker, which makes the absence of inflectional complexity in a language spoken in a Type 1 speech community less informative.

A further practical drawback would be that the majority of studies in inflectional change concern only simplification and deflection. The precise manners in which languages become more complex are less well documented (however, cf. Mühlhäusler 1995a, 1995b; Romaine 1992; Steever 1993). There especially is a lack of data when I would want to examine closely related languages with a common ancestor but a different sociolinguistic history. It is hard to find cases where a mother language with a ‘simple’ morphology that functioned in a Type 2 community has been documented in an older stage, in combination with daughter languages that have developed in both Type 1 and Type 2 circumstances. Therefore, my focus lies on the more accessible simplification processes. Nevertheless, in some cases below the original (Type 1) variety went through a stage where it functioned as a Type 2 language, while in a later stage it was spoken again in Type 1 circumstances. For instance, after a turbulent phase of spread and internal variation of Arabic in Morocco, at a later stage Morocco shifted more towards a Type 1 speech community, though one with extensive Arabic/Berber bilingualism. I will discuss this and other cases of ‘U-shifts’ (changes from Type 1 to Type 2 to a new situation of Type 1) in the relevant sections below.

In order to test all these claims, I use a more explicit linguistic theory that is able to accommodate the data presented here. For this purpose, I adopt the Optimality Theory, which will be discussed further in Chapter 3.

1.4 Objections against complexity

Several (a priori) arguments have been made against the notion of complexity, and against the possibility of examining complexity. These are usually based on the claim that complexity in language cannot be examined, because complexities in one domain of language are balanced by simplicity in another domain. For instance, Aitchinson (1991: 214) writes in a popularising textbook on language change: “A language which is simple and regular in one respect is likely to be complex and confusing in others. There seems to be a trading relationship between the different parts of the grammar which we do not fully understand.” For instance, complex case systems would make word order rules simpler, and complexities in tonal phonology would imply simplicity in phoneme inventories.
What is often lacking in arguments pro and contra this trading relation, is a further specification of what complexity means. When we take complexity to mean ‘outsider complexity’ as defined in section 1.2, most of the objections against the relevance of the concept evaporate, while other objections were already insufficient by themselves.

Sometimes it is argued that the trading relationship is due to limitations on mental capacities; the mind/brain - of an average adult language user - can process and contain only a limited amount of complexity. An increase in complexity, because of a limited ‘complexity space’, in one component necessarily leads to a decrease elsewhere. This argument presupposes that the average speaker already uses the maximal amount of the ‘complexity space’. If not so, the argument would not imply that languages are equally complex since then languages could differ on the amount of ‘complexity space’ they occupy. Accepting this for the sake of the argument, other problems arise with the brain limitation argument. When assuming that mono-linguals use the complete ‘complexity space’, the acquisition of foreign languages becomes difficult to explain. It would entail either that the acquisition of a second language has the effect that the native language becomes less complex, or that the acquisition of a second language occupies a different ‘complexity space’. The first view is highly unlikely, and the second view also runs into problems. When two languages would belong to two different mental spaces, interaction, like rapid code-switching, between these two modules is hard to explain.

Assuming, again for the sake of the argument, that for each language there is a separate and restricted mental space, problems remain. That is, when we conceive language competence as consisting of lexical and grammatical knowledge, it is hard to imagine how lexical knowledge could be considered as always equally complex. For example, knowing the many thousands of words which Shakespeare had at his disposal, would in some way have to be as equally complex as knowledge of the words in a very rudimentary lexicon restricted to a small village in an old agricultural community. One might be inclined to argue that indeed these two kinds of knowledge are equally complex, because with both kinds of lexicons it is possible to function in certain niches in society. However, in that case we reach the bottom-line of argumentation, since this entails that all languages that exist must be equally complex just because they exist. According to my definition of complexity however, a large lexicon, ceteris paribus, is probably more complex than a smaller lexicon, since an outsider has less problems in acquiring and using a smaller lexicon.

Sometimes it is argued that although the size and complexity of lexicons may vary, the core grammar must be always equally complex. Whether this is true depends on what part of language competence is considered to belong to the lexicon and what part to the grammar. When the grammar is conceived of as an invariant language-universal module or processing unit, then there can be, indeed, no complexity differences in the grammar by definition. In Chapter 3, we will discuss how in an OT framework complexity is an effect of both lexical and grammatical differences.

In the arguments above, the supposed trade-off lies in the mind/brain. A second way to argue against complexity is to claim that the trade-off lies in language use somehow: when in one domain of a language complexity disappears, somewhere else new complexities would have to surface. Language would always remain on the same level of complexity. That is, a simple language cannot exist, because different language components have counteracting ‘preferences’ for simplicity. A structure that is easily
Objections against complexity

produced would be complex to perceive and vice versa. For example, when in the phonological component assimilation is introduced, this could be a simplification from an articulatory phonetic point-of-view, but a complication from a perceptual morphological point-of-view. The force of such arguments depends partly on the definition of complexity. For complexity, as I define it, perceptual simplicity outweighs articulatory smoothness. Therefore, when the trade-off is argued to lie between different kinds of language use/users, the objection does not hold, since in my definition complexity refers to only one kind of language user: the outsider.

A valid argument against my concept of complexity would need to show that there is always a trade-off between different domains, for one and the same outsider. However, this seems not to be the case. For instance, the replacement of a huge array of lexically conditioned plural markers as in Classical Arabic by a system with transparent optional plural marking as in KiNubi Arabic does not seem to involve any trade-off. Whether Classical Arabic plural marking is indeed more complex (for an outsider) than KiNubi Arabic plural marking must be shown in empirical tests, but this possibility cannot be excluded beforehand. With respect to a trade-off between phonological components, Maddieson (1984: 23) found indications that the opposite may be the case:

“A search for evidence that languages maintain a balance by compensation for complexity in one phonological respect by possessing simplicity elsewhere failed to find it in balance between classes of segments, between segments and suprasegmental contrasts, or between segments and phonotactic conditions. These investigations suggest that complexity of various kinds occurs together in languages, and that languages really do differ in their phonological simplicity.”

Although in this latter example complexity is not well defined, it at least suggests that trade-offs in phonology may not be as expected.

Another flaw in a priori arguments based on a mysterious trade-off is that they say nothing about complications, only about simplifications. It is less plausible that a complication in one part, for instance, the borrowing of words with previously unknown phonemes, necessarily results in a simplification elsewhere. When the trade-off would only apply to simplifications, differences in complexity cannot be excluded by the trade-off argument.5

Of course, it may be maintained that there must be a trade-off somewhere in the language, even if we do not know where. The simplification of plural marking in the example above, may lead to more difficulties in the interpretation of plural forms, or it may lead to the introduction of complexities in a less well-described pragmatic component. An increase of complexity in phonological contrasts may be argued to be balanced by a decrease of complexity in pragmatics as well. This latter domain, pragmatics, is often referred to when the alleged simplicity of creole languages is discussed. The argument runs as follows: in some languages complexities may be found on a tangible linguistic level, e.g. in the phonology or inflection. In other languages complexities emerge in the pragmatic component, which may consist of, for instance, the control over a wide number of proverbs in speech events (cf. Bird & Shopen 1979 for Maninka), or the use of the correct gestures and mimics in conversation, etc. In such

5 I do also not discuss complications (cf. section 1.3). However, these do not present a problem for my theory, while they are problematic for the trade-off argument.
arguments the trade-off function extends from core language competence to wider communicative and cultural competence.

Such equi-complexity seems highly unlikely because it does not demonstrate how mediations in complexity between e.g., the number of proverbs and the number of plural allomorphs could take place. If the trade-offs were to lie between a limited number of semantically or functionally related domains, the claim would be more reasonable, and hence such cases will be discussed when relevant. Although the argument of a priori equi-complexity cannot be excluded, it is, however, not falsifiable: for every change in complexity it can be argued that there is another component, in another domain of language structure, pragmatics, or even culture, where the amount of complexity would be levelled out. There is no feasible case where this a priori statement can be shown to be false.

In conclusion, I suggest that under my definition of complexity the objections commonly raised against the possibility of any differences in complexity between languages are not valid. In the rest of this study I will examine whether in one particular domain there are differences in complexity, and whether these are related to social change. In section 1.5 I will motivate the choice of the domain of inflectional morphology. In addition, although I will argue that there are differences in complexity in a local domain, that does not imply that these differences are limitless. The lower limit becomes apparent when we consider defective speech.6 We may conceive of some forms of aphatic speech as lacking something which makes these fall below the lower limit of complexity. The upper regions of complexity are populated by language users that have invested extra amounts of energy in learning and adapting their mind to highly complex structures. The upper limits of language complexity cannot by definition be surpassed by humans.7

1.5 Complexity in language

A discussion of ‘outsider complexity’ can involve different components of language. I will discuss the suitability of phonology, syntax and morphology to study it.

1.5.1 Phonology

In literature there are several references to phonological complexity and social circumstances. Trudgill (1992) argues that in tight-knit speech communities with few contacts with outsiders ‘slightly unusual’ sound changes are to be expected. In Faroese, for instance, the earlier long vowel \( u:\) in \( ku:\), ‘cow’, has developed into \( igv\) in \( kigv\) (cf. Trudgill 1992: 206). Andersen (1988) also adduces a wealth of examples of striking

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6 It is not straightforward what counts as defective speech. A fossilized second language learner may be content with the ability she reached in her second language for the purposes she uses the language. Furthermore, while aphatic language is considered as defective, today sign language is usually considered as a full perfect language, although it is defective in contexts like telephone communication, etc. On the other hand, vocal language in turn can be considered defective in a context with loud noise, or where locutors are at great distance from each other.

7 The future is the land of endless possibilities. One of these possibilities is that another organic or non-organic system develops ways to handle languages that are more complex than human language. A parallel can be found in chess: while there are lower and upper limits of how smart a chess player is, today non-organic systems, that is chess computer programs, are crossing the upper limits of human chess competence.
sound changes in languages spoken in peripheral speech communities. It is also noted (cf. Haudricourt 1961) that in small isolated speech communities, like in the Caucasus, phonological phenomena occur that would not be expected in more centrally located languages (cf. also Maddieson 1984). In these studies it is assumed that these phenomena are more complex for outsiders.

For a more thorough account of the relationship between society and phonological complexity, this latter notion needs to be explored further. In the studies above, only a few isolated features are examined as phonologically complex phenomena, and the assumption of their complexity is mainly based on the number and kind of phonemes in a language. Counting the phonemes in a language is relatively easy. For a further elaboration of phonological complexity, studies in language processing can be used. Cross-linguistic studies of what phonemic qualities are likely to be conflated or confused in perception and production provide further indications of phonological complexity. In addition, the order of acquisition of phonemes by L1 and L2 learners would provide clues to phonological complexity.

Other aspects of phonology are, however, more difficult to examine. For example, Milroy (1982) claims that in tightly knit communities there is more ‘allophonic complexity’, that is, a phoneme’s phonetic value is relatively difficult to characterise, and varies lexically. Trudgill also calls (1992: 204) fast speech phenomena like assimilation and elision as phonologically complex. Such phenomena are less well-described in studies of non-Western languages, especially historical grammars. In typological research without extensive field-work, a study of phonological complexity would then mainly be restricted to a comparison of phoneme inventories, while having to omit these finer-grained details. Therefore, I prefer to focus on the better described field - both synchronically and diachronically - of inflectional morphology. In a follow-up study, the results from my work could be compared with the phonological processes in the languages I discuss.

1.5.2 Syntax

Syntax is less frequently named as a domain where complexities would be related to social change. However, there are a few proposals that concern the relationship between syntax and society.

Firstly, it is sometimes argued that oral and literate cultures differ with respect to the kind of syntactic constructions possible. The production and composition of texts in literary cultures would trigger different styles and lead to different grammars in comparison with oral culture. According to Ong (1982: 37ff.) a striking syntactic difference is the wider occurrence of subordination in literary traditions.

Secondly, it is sometimes argued that certain ‘natural orders’ do exist in syntax, and that some orders are marked deviations. The natural order would optimally reflect language users’ preferences in speech events (cf. Croft 1990; Haiman 1985). The natural way of communication would be mirrored in a syntax that has Subject-Verb-Object (SVO) word order. Corroboration for this view is found in the fact that many ‘young’ languages, which would be closer to some state of ‘naturalness’, have SVO word order. In addition, when languages come in contact and influence each other, the direction of change is most often towards the ‘natural order’ of SVO (cf. Gadell 1997).
Although both these phenomena are promising for further research, I will not examine complexity in syntax for several reasons. First of all, subordination and SVO word order are only descriptive levels that may cover quite diverse structures, the analysis of which involves highly complex and often disputed assumptions about underlying orders (cf. Croft 1990; Kayne 1994), not feasible in a comparative study such as the present one. Moreover, to examine these underlying structures intensive work in the languages in question would be needed. However, in spite of the overwhelming syntactic research of last decades, there is still a lack of cross-linguistic data. Most syntactic research is not meant to provide a complete description of the syntactic structure of a particular language, but only to provide insight into aspects of assumed universal language competence. Finally, apart from the variation in order of Subject, Verb and Object and in subordination there are few other promising syntactic phenomena related to the social factors I examine here.

1.5.3 Derivational morphology

The next question is whether morphology, inflectional or derivational, is suited for an examination of complexity.

In morphological theory there are two positions with respect to inflection and derivation. According to Booij (1993) and Di Sciullo and Williams (1987) there is no essential distinction between derivational and inflectional morphology. Both deal with word formation, the latter being only more involved in syntax than the former, which would be an accidental effect of the location of the affixes at the edge of a word. On the other hand, Anderson (1992) claims that there is an essential difference between the two kinds of morphology. Derivational rules generalise over different words in the lexicon, and operate on phonological strings in the lexicon to produce other phonological strings, without interference from syntax. Inflection deals with the properties of a word that are syntactically relevant, that is, its morpho-syntactic representation. These representations are further spelled out by “inflectional Word Formation Rules”. These latter rules operate on a pair \{S,M\}, S being the phonologically specified stem, and M being the Morphosyntactic Representation. Derivation deals only with Word Formation Rules, which lay relations between different S’s.

I take Anderson’s side in this issue since inflection and derivation react differently on the social changes discussed here (cf. section 1.5.4), and these two must therefore be distinguished. Below I will argue that inflectional morphology is better suited for research than derivational morphology.

Under the heading of derivational morphology I include derivation and compounding. The lexicon can be considered as a domain of knowledge of rules and representations. A lexicon consists of knowledge of a list. It may look like a list because many lexical rules are of a stipulative nature e.g:

“‘cat’ is a noun, has the phonological form /kæt/ and means [a carnivorous mammal long domesticated and kept by man as a pet or for catching rats and mice].”

These list-like rules are not different from other derivational rules. They only apply to a smaller domain than, e.g. the ‘able-suffixation rule’ in English, which is:

“[Verb]-able’ is an adjective, has the phonological form /Verb-əbl/ and means [capable of being V-ed].”
Rules that introduce only one lexical item, I call lexical stipulation rules, and the second kind of rule I call derivational rules. In the input of a rule the possible phonological forms are stated on which the rules operate, its syntactic properties, and its semantic characterisation. In the output the corresponding phonological, syntactic and semantic properties are stated. I will refer to the changes introduced by these rules as ‘morphemes’.

Let us assume for the sake of the argument that a lexicon is more complex when it has more rules, including lexical stipulation rules. I assume this short-hand definition for the moment, although I argued in section 1.2, that the exact content of (outsider) complexity can only be found when taking account of empirical data on various kinds of language processing. This provisional definition, however, will suffice for the discussion here.

Now, suppose a subset of 128 lexical items from a language are examined. If every item is introduced by an independent rule, the lexicon uses 128 rules. If there are, however, only seven rules that combine two basic elements, also rendering \(2^7=128\) words, then, ideally spoken, the lexicon is fairly simple. Actual lexicons fall between these two extremes.

An example of intermediate lexical complexity is the -en suffix in English, which makes verbs from adjectives with the meaning ‘to make something X’. Although the rule is quite regular, it is not the simplest of derivational rules, since its application is restricted. Another example is the feminine suffix rule in Dutch, which ‘feminises’ almost any word which refers to a male profession. This suffix, however, shows extensive allomorphy, having forms like: -In, -es, -st and -r. These examples show that in addition to the number of rules, the form of rules is also important for assessing complexity, to which I turn now. Four dimensions play a role.

First of all, the restriction of the application domain of a rule, whether it is semantic, syntactic or phonological, may vary between two languages. For instance, the application domain of the English -en suffix rule is a phonologically restricted subclass of adjectives: only monosyllabic stems that end in an obstruent are eligible (cf. Siegel 1974). A similar rule in Esperanto is simpler in this respect, because it relates to more lexical items: the causative -ig-suffix rule in Esperanto is phonologically and syntactically unrestricted: Esperanto: densa, ‘dense’, dens-ig-i, ‘to make dense’, lumo, ‘light’, lum-ig-i, ‘illuminate’.

Second, the complexity of the rule’s description of the input may vary. For example, the -able suffixation rule in English has verbs as input, but when verbs end on -ate, the input is the stem without this -ate part, cf. break \(\rightarrow\) breakable, demonstrate \(\rightarrow\) demonstrable. Such subrules complicate the general rule.\(^{10}\)

\(^{8}\) Such a measure of lexical/derivational complexity is in line with Schreuder and Baayen (1997), who found that words that are built up from morphemes that recur in many other words, and thus have a large family size, are more easily processed than others that have a smaller family size.

\(^{9}\) It is no coincidence that the rule is simpler in Esperanto. Esperanto is a planned language that was originally invented to be simple to learn.

\(^{10}\) In fact, here we meet the limits of my provisional definition of lexical complexity, because when we would take the approach that rules operate on output instead of input, these examples would not complicate the rule and the lexicon.
Third, the rule’s description of the output may vary; for example, the Dutch feminine suffix has four allomorphs which are used quite unpredictably (see above), while Esperanto has only one feminine suffix: -in-. A fourth factor is the kind of morphological process used in a rule. When under similar circumstances a morphological process is expressed by concatenation of phonological forms, then this is simpler than when circumfixation or metathesis is used. I conjecture on the basis of the one form-one meaning principle, cf. section 2.1.2, the following hierarchy from the most simple to the most complex morphological process: “composition >> suffixation/prefixation >> reduplication >> infixation >> vocalic and consonantal changes, including metathesis >> truncation.”

In conclusion, a language with no derivational rules has the most complex lexicon, while a language with many such rules has a simpler lexicon, assuming that both lexicons have the same size. This result concurs with Mühlhäusler’s (1974) observation that the ordering of a lexicon introduces regularity and simplicity during the nativisation or creolisation of a pidgin. It also fits with the observation that Esperanto is partially such an easily learnable language thanks to its regular and pervasive derivational morphology, at least in its form (though not necessarily in its semantics, see below).

When selecting two comparable subsets of lexical items with a comparable semantics a comparison of complexity seems feasible. However, several problems arise in both the selection as well as the actual research. First of all, consider a language that has a regular rule of deriving causatives from non-causative verbs versus a language that has no rule for causatives. When this latter language has analytic means to express causativity, this latter way of expressing causation may be simpler than the morphological device, since analytic devices are less likely to develop allomorphic irregularities, and semantic or phonological rule restrictions. However, when causatives in the latter language are not expressed syntactically but lexically, then this language is more complex in this respect, because it has more ‘lexical rules’ (see above). Therefore, a study of the complexity of causativity in a language cannot be restricted to a comparison of derivational morphologies, but soon pertains to a study of broader parts of the lexicon and of syntax. This problem is connected to the issue of ‘trade-off’ discussed in section 1.4, which is quite prominent in derivational morphology. The trade-off issue remains problematic, also when we have a restricted set of notions, expressed lexically in the languages under comparison, because a smaller number of lexical items does not necessarily entail overall simplicity. A language with, for example, a verb that denotes both ‘drink’, ‘eat’ and ‘smoke’ may appear to have a simpler lexicon in this respect, however, its pragmatics may be more complex to penetrate for an outsider.

A second problem, more specific to derivational morphology, is related to the fact that the lexicon is a less homogeneous part of language than other domains like phonology, syntax or inflectional morphology. For some (cf. Bloomfield 1933) the lexicon is by definition that part of language that cannot be described by general rules. However, when we hold a view of the lexicon as comprising derivational regularities, it remains a rather

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This order is an idealized one, because in practice morphological processes are composed of several of these processes, which can be more or less complex depending on phonological parameters. This hierarchy can nevertheless serve as a general outline.
baroque language domain. For instance, languages like English or Japanese consist of different historical layers, originating from extensive borrowing, which results in rules that only pertain to subsets of the lexicon. In many languages there is a subset of the lexicon only used in specific contexts like scientific language. Finally in languages where code-switching and borrowing is wide-spread, e.g. Tidore (Van Staden 2000), it is unclear whether a lexical item or a derivational rule belongs to one language or another. These mixings of registers, varieties and languages by one speaker yield a demarcation problem when examining derivational complexity. Although such problems are also present in a study of complexity in syntax or inflection, they are most problematic for a study of derivation and the lexicon, since that is the domain where borrowing affects the system most thoroughly.

The problems so far can be partly handled by selecting relatively homogeneous languages that are closely related in order to make comparison of the expression of semantic notions easier. However, even then problems remain. The formal side of rules is rather accessible: e.g. verb + er → verb-er. However, the semantics of such regular rules must to a certain extent be learned separately: ‘worker’ has other connotations than ‘someone who works’. Also in apparently transparent regular languages like Esperanto, a derived word like lern ‘learn’ + ej ‘place where “verb” takes place’ → lernjo, ‘school’ is only transparent given a battery of world knowledge and background assumptions. Although similar world knowledge is needed to interpret syntactic constructions and inflectional categories, this problem seems especially pertinent to the lexicon. In other words, derivational rules generalise over various lexical relations, but how much regularity these rules actually introduce, and how much idiosyncracy still remains is different in each individual instance of a rule.

A fourth problem is that when we want to replace the provisional definition used so far for the ‘real’ definition of complexity of section 1.2, we are confronted with a considerable lack of data. For a better definition, we need results from studies in the acquisition by both children and adults of various derivational semantically and formally diverse rules. In addition, we need data on the ease of production and perception of various derived items. While there is some literature on the latter subject (e.g. Schreuder et al. 1997), data on acquisition are scarcer. Finally, complete descriptions of lexicons are seldom available, if at all, especially not when less studied languages or dialects outside Europe are considered.

1.5.4 Inflectional Morphology

Let us still assume for the sake of the argument that complexity has something to do with the number of rules needed to account for a set of items. Then we conceive complexity in derivational morphology as relating to the question how much information needs to be stored to know the lexicon. Derivational rules, which generalise over lexical items, reduce the amount of information needed. With the caveats of the section above in mind, derivational rules are, therefore, complexity reducing. From this perspective inflectional rules, in contrast, are not complexity reducing. While one derivational rule in a language corresponds usually to several lexical stipulation rules in another language (however, cf. the Arabic example below), one inflectional rule in a language usually does not correspond to a set of rules in another language. Instead, they correspond to analytical constructions in another language. For example, in Standard Swahili tense, gender,
subject agreement, and object agreement are inflectional categories, in the sense of Anderson (1992). That is, they are obligatorily expressed and depend on the semantic and syntactic environment. In contrast, in Kenyan Pidgin Swahili there is no subject or object agreement or inflectional tense (cf. section 7.4). Tense may be expressed by explicit lexical items and subject-object relations are determined pragmatically or by word order. The inflectional rules needed to account for tense and agreement inflection in Standard Swahili do not correspond to a higher number of lexical stipulation rules in Kenyan Pidgin Swahili.

Therefore, we distinguish two kinds of morphological (word-formation) rules: some word-formation rules introduce regularity into the list of lexical items of a language. Other word-formation rules do not introduce more regularity; instead, they yield a larger set of words by expressing morphologically what is expressed syntactically in other languages. These two kinds of morphological rules roughly correspond to the distinction between inflection and derivation as made by Anderson (1992) (cf. section 1.5.3 and 3.1). We need not discuss the exact definition of inflection versus derivation here. Indeed, there are some intermediate cases whose status depends on what the exact criterion is. For example, in Arabic there are rules, which are usually considered derivational, that introduce aspectual and valency distinctions expressed analytically in other languages, even in other Arabic varieties (cf. section 4.4.1.2). The important point here is, however, that prototypical inflection extends the number of words, while derivational rules regularise a lexicon. Inflectional rules may therefore have a complicating effect, while derivational rules a simplifying one. This distinction between simplifying and complicating effects of word-formation rules is of course important for a study in complexity, and since it often runs parallel with the derivation/inflection division, this latter distinction is helpful as well. Now I turn to the reasons why the inflectional part of morphology is best suited for research on complexity.

First of all, from a practical point of view inflection provides a good opportunity to examine complexity cross-linguistically. In most grammars information about inflection is given. The accessibility of data on inflection is therefore higher than data on the other domains.

This is related to a second advantage. The structure and the rules of inflection are to a certain extent independent of pragmatics, discourse, register, or inter-speaker variation. Inflection is rather uniform across various situations. This stability has led many linguists since the earliest days (cf. Rask 1967; Dimmendaal 1995) to use inflectional morphology as the yard-stick for language classifications.

Thirdly, inflection is a pervasive phenomenon in language. When a language has inflection, it occurs in almost every sentence, in contrast with features like phonological assimilation between particular phonemes, or specific syntactic constructions like the long-distance wh-movement. The persistence of inflection and its stability between domains of use imply that inflection is immediately relevant for language users. While e.g., syntactic rules that are only used in restricted contexts can be avoided, inflection is learned and used by all kinds of language users. This property of inflection makes it easier to examine inflectional complexity with respect to different kinds of language use.

A fourth advantage is that inflection varies considerably between languages: some languages have extensive inflectional systems, while others have no inflection at all. We could conceptualise inflection as a fungus colony or as a coral reef. These can range from absent, minimal, to overwhelmingly baroque. This outlook sets inflection apart from other modules, since we cannot rate languages on a scale from no syntax, to a little syntax, to
elaborate and baroque syntax. This is advantageous because it allows us to measure amounts of inflection, while in other modules two different constructions must often be compared.

In the fifth place, in contrast with derivational morphology, a study of inflectional morphology is less concerned with questions of lexical semantics (cf. 1.5.3). While in derivational morphology there is some indeterminacy with respect to the predictability of meaning, in inflection the meaning is more computational.

A sixth advantage is that inflection is relatively easy to define independently from theoretical considerations. Morphological theories display less variability and fashion-sensitivity in comparison with especially syntactic theories. There is relatively much agreement about what counts as inflection, and it is possible to provide a model of inflection that largely concurs with other models.

In conclusion, due to its stability, persistence, definability, inter-language variability, the availability of data, and its independence from lexical semantics, inflection is a good target for an examination of complexity.

Inflection is found on verbs and nouns, but there are also languages where there is inflection on adjectives and prepositions. I will restrict this study to the form of inflection that is most wide-spread, namely, verbal inflection (cf. Nichols 1992). Verbal inflection is commonly found between languages as well as within languages. In languages where one-word sentences occur, these words are usually verbs. In addition, generally more categories are expressed in verbal inflection than in nominal inflection, and therefore, more complex elaboration, fusion and splittings occur with the verb. Verbal inflection therefore provides a better opportunity for research on complexity.
2. Complexity in verbal inflection

In this chapter I examine what aspects of verbal inflection can be called ‘complex’ with the definition of (outsider) complexity as formulated in section 1.2. To answer this we need to determine the principles of inflectional morphology (2.1), and the dimensions of language processing (2.2). In 2.3 I elaborate on two prototypical community types, as suggested in 1.4, that are characterised by three opposing poles of the three pairs of language processing. One of these types is associated with complex, and the other with simple verbal inflection. In 2.4 I examine what kind of - complex - inflection is expected in Type 1 communities, and what kind of - simple - inflection in Type 2 communities. In 2.5 I draw conclusions and make predictions for the case studies in the following chapters.

2.1 Principles of inflection

There are three universal principles: the Economy Principle, the Transparency Principle, and the Isomorphy Principle. These recur under different names in most inflectional theories.

The Economy Principle states that as few semantic categories or category combinations as possible should be expressed morphologically. Simpler structures are favoured over elaborate structures in morphology. This principle is formulated in phonology in terms of ‘cooccurrence restrictions’ (Auer 1997), and in some morphological theories as ‘impoverishment filters’ (cf. Noyer 1992). The Economy principle is also the driving force behind phenomena like syncretism and homonymy (cf. Carstairs-McCathy 1987).

The Transparency Principle demands that the relation between form and meaning is as transparent as possible. Highest transparency is attained when every single meaning is expressed in a separate form. This principle is known under various names like ‘Semantic Transparency’ (Seuren & Wekker 1986), and ‘One-to-One-Principle’ (Andersen 1984), and it goes back to von Humboldt’s morphological typology (1836). Transparency decreases when words deviate from this ideal. There are four ways to deviate. Several meanings may be expressed in one form, several forms may comprise the same meaning, and this can happen on the syntagmatic or paradigmatic dimensions. This results in fusion, fission, allomorphy and homonymy.

The Isomorphy Principle demands with respect to inflectional morphology that affix order is isomorphic to the order of the meaning elements. That is, the morphological order must reflect a semantic/pragmatic hierarchy of features ordered along the dimension of relevance to the verb stem. This principle is an extension of Baker’s Mirror Principle (1985), foreshadowed in Muysken (1981). In the non-generative approach of Bybee (1985), a similar principle is named the Principle of Relevance.

These three principles influence inflectional morphological structure. However, some additional factors also play a role; phonological principles may distort the implementation of the morphological universal principles mentioned above. Furthermore, there are language-specific morphological patterns in inflectional morphology. Finally, there are factors like the animacy hierarchy that interfere with the order of morphemes in morphology. I will now discuss the three principles that govern morphology, and then pay attention to other factors.
2.1.1 Economy

Economy leads to a minimal number of categories in inflectional morphology. This number varies from zero to ten and higher. For instance, in Nubi Arabic, only two categories are expressed morphologically, namely aspect and voice, while in Moroccan Arabic voice, aspect, and agreement with both the person, gender and number of the subject and the object are expressed. In Moroccan Arabic tense, and the combination of plural with gender, on the other hand, are never expressed. When a semantic notion is never expressed in inflection in a particular language I call it Absolute Economy, and when a notion is not expressed in combination with other semantic notions, I call it Relative Economy.

The theoretical status of Economy depends on the framework in which a morphological theory is embedded. The Economy Principle in Noyer’s work (1992), called ‘Impoverishment filters’, is a property of innate language knowledge. In this view the child is born with all filters operative, and only when there is evidence for the opposite, would filters be suppressed. In functional-pragmatic approaches, like Bybee’s (1985) the notion of Economy seems to stem from pragmatic or communicative principles: communication is more efficient when certain communicatively non-salient (combinations of) notions are suppressed. I take an agnostic stance on the issue of inmateness, although in section 2.4.1.2 we note that the behaviour of the child language learner differs in this regard from that of the second language learner, which could indicate that the Economy Principle has some kind of innate status. In Chapter 3 I argue that the Economy Principle can be translated into ‘OT-constraints’, which, at least in the standard interpretation of Optimality Theory, are all innate.

Economy operates on the semantic level. For instance, the conflation of the indicative and subjunctive mood in the plural in the history of the Icelandic language leads to a reduction in combinatory possibilities of the subjunctive and plural meanings. This does not mean that every conflation is the result of Economy: in Tórshavn Faroese 1st singular and 1st plural were conflated as a result of a phonological change that reduced unstressed vowel quality distinctions to schwa. Economy may operate here as well, but it is not the motor of change in this case. In other cases, like in Najdi Arabic, phonological changes and changes under the influence of Economy run parallel. Interaction between phonological changes and the Principle of Economy prevails especially in Scandinavian and Arabic languages.

In the theoretical framework of Distributed Morphology (Halle and Marantz 1993), Economy plays a role before insertion of phonetic material into the semantic structure. The advantage of such an approach is that it can account for non-local Economy, that is the conflation of categories that do not surface adjacently in the phonetic string (cf. Noyer 1992).

In order to assess the number of categories we must distinguish between categories and values. For instance, in Cuzco Quechua two categories are distinguished: person and number, and within these two categories five values are distinguished: first, second and third person, and singular and plural. In addition, there is a difference between first person plurals that refer to the speaker and the addressee, so-called inclusive plurals, and plurals that refer to the speaker and non-addressees, so-called exclusive plurals, cf. section 6.2.1.2. Now the question is whether this latter distinction should be subsumed as a separate value under ‘person’, or ‘number’, or under a separate category,
‘inclusiveness’. I will not solve such questions in general, but will decide in each individual case how the categorial architecture of a language should be interpreted.

The meaning of a category and its values also relates to this issue. For instance, Arabic verbs have two kinds of conjugations, one by prefixes and suffixes, and the other only by suffixes, cf. section 4.2.1.3. In Classical Arabic, these conjugations correspond to vague aspectual notions, and temporal and modal notions interfere as well. Therefore some authors (cf. Holes 1995: 86) name these two stem types simply p(refix)-stems, versus s(uffix)-stems. Others (cf. Versteegh 1997: 84) retain the traditional labels, imperfect versus perfect stem. Again, I will decide in each instance how I will classify the values of the semantic categories.

Inflectional categories and values can be divided in four ways relevant to this study: their frequency, their stability, their information density, and the way the notions are expressed when not expressed inflectionally, that is, their replaceability. I will now discuss these four dimensions.

First of all, categories and their values can be compared with respect to the times that they appear in a language as inflectional notions. For instance tense, or person agreement are more often expressed in verbal inflection than aspect or gender agreement. A hierarchy can be constructed of categories descending from categories with high potential to occur inflectionally to categories that have low frequency. An example of such an hierarchy is: agr (54%) >> tense (50%) >> aspect (34%), (Bybee 1985: 142, 155ff; Cysouw 2001: 341ff.). Within these categories further sub-hierarchies can be distinguished. For instance, agreement can be divided into subject and object agreement, and the frequencies of each category can be calculated for the values the categories take. For instance, dual number is less common than the plural, and the aspectual category ‘habitual’ is less common than the ‘perfective’.

Such frequency hierarchies predict the times we find a category or a value in a randomly chosen language. However, the frequency with which a category or value is found does not necessarily entail stability under language change. A category can occur frequently between languages, but may nevertheless be easily lost. On the other hand categories can be rather infrequent but resist change.

The stability of categories under language change is a disputed issue. In traditional historical linguistics semantic categories and their inflectional expression were taken as the most deep-rooted, change-resistant features, that determined language classification. Lexicon, phonology, and syntax were considered to be sensitive to superficial influences, while the morphosyntax would remain more stable over longer time periods. Recent research of language families in Australia and the Amazon shows, however, that inflection can also be borrowed and spread outside a genetic group (cf. Aikhenvald 1998; Dixon 1997). Which categories spread more easily and which categories are more resistant has hardly been studied, however. The only research is Nichols’ (1992) large typological study which makes some effort to establish the stability of grammatical features, discerning two kinds of stability.
First of all, a category can be rooted firmly in a genetic language family. Nichols found that some grammatical features are more stable in a language family than others. For example, the ‘alignment type’ would be genetically very stable, while the alienability distinction in possessive constructions would be unstable (Nichols 1992: 181). An example from the present study is the following: in the continental Scandinavian languages, like Danish and Norwegian numerous words were borrowed from other Germanic languages, which even affected derivational morphology. Furthermore, the stress system was altered as well as several syntactic properties. However, although inflectional notions like person and number agreement disappeared, tense remained a persistent verbal category (cf. section 5.5.2.1 and Seip 1971: 226), and tense may be a stable category in Scandinavian.

Secondly, a category can be rooted firmly in a specific area. Some features are more sensitive to neighbouring languages than others. For instance, basic word order is determined mainly by the area where a language is spoken. Convergence in word order is, in addition to plain lexical borrowing, one of the features that is a first indication of language contact.

The first kind of stability, genetic stability, is most important to this study. I will examine how a language splits and is influenced by social and cultural factors, but I will not focus on the features of a linguistic area.

Usually both phonological and semantic factors play a role in the stability of a category. For instance, subject agreement may be less stable than mood in general, but due to its phonologically weak position in the word, mood disappeared more radically in Germanic languages, cf. Chapter 5 on Scandinavian.

The third dimension is the measure of relevance or density of information. Inflectional notions can be scaled from non-informative to highly informative. Although the informativeness of a particular semantic notion varies between languages, in general, voice and valency are more important to the meaning of the verb and the utterance, than aspect, tense and mood. Often these latter categories and especially agreement features are hardly informative, namely, when they are obligatory, but redundant in a stretch of discourse where the location in time and modality and the roles of participants remain unchanged. Whether a category is redundant depends on the rest of the grammar, and may vary over different contexts. I call categories redundant when they do not provide extra informational content, like person agreement in a language with obligatory case-marked pronouns. The relevance or information density of categories is most akin to Bybee’s Relevance Principle, and is related to the other two dimensions of frequency and stability. On the basis of the empirical findings of frequency and stability, the relevance of categories can be inferred.

A fourth dimension on which semantic notions can be classified is the way these categories are expressed when not expressed inflectionally. This can be in the verbal root, with the help of derivational morphology, by word order, or in a pragmatic or contextual way. Table 2.1, based on work by Bybee (1985) and Chung & Timberlake
Principles of inflection (1985), shows what devices each category has at its disposal, and what kind of devices may be employed when a category disappears as an inflectional notion.

Table 2.1 Inflectional categories and their expression

<table>
<thead>
<tr>
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<th>Verbal root</th>
<th>Derivation</th>
<th>Inflection</th>
<th>Word order</th>
<th>Contextual</th>
</tr>
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<tbody>
<tr>
<td>SubAgr</td>
<td>x</td>
<td>x</td>
<td>x</td>
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<td>ObjAgr</td>
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<tr>
<td>Mood</td>
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<tr>
<td>Tense</td>
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<tr>
<td>Aspect</td>
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<td></td>
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<tr>
<td>Valency/Voice</td>
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</table>

Agreement (with the verb) is partly used to express the relations between noun phrases and the verb. The other usual device to express these, if expressed at all, is word order. Mood and tense are either expressed inflectionally, or somewhere outside the verb, e.g. by particles or lexical items. When not expressed inflectionally, aspect and voice may be expressed derivationally or in the lexical root of the verb or in other lexical items. In many languages verbs have intrinsic ‘Aktionsarten’ that determine the aspect of the verb. Valency changing operations can, at least partially, also be expressed by word order.

These four dimensions of frequency, stability, informativeness and replaceability shape the background against which inflectional changes as studied here take place. On the foreground the actual social and cultural forces as apparent in different types of speech community determine whether complexity will increase or decrease. The background determines partly how such changes take place. As mentioned above, some inflectional notions are more prone to change than others.

On the basis of the fourth dimension, the replaceability of inflectional notions, we may conjecture that redundant inflectional complexity which does not need to be replaced at all will disappear first, like gender agreement phenomena. Indeed we see in Type 2 speech communities in the Swahili or the Arabic area that gender agreement tends to be reduced.

The reduction of inflectional complexities in domains possibly replaceable by syntactic or derivational devices, may lead to a trade-off in general complexity. When aspect disappears as an inflectional category, for instance, it may be replaced by a derivational or syntactic device. In such cases the possible reduction in inflectional complexity may be counterbalanced by more syntactic or derivational complexity. However, as discussed in 1.5.4 there is reason to suppose that it is more complex to express inflectional notions derivationally than inflectionally. In addition, there is some evidence (cf. section 2.4 below) that inflectional morphological devices are more complex than syntactic (word order) devices. We may expect therefore a tendency to replace derivation by inflection, and inflection by syntactic means. In the case studies below, we do indeed find some of these tendencies: i) in Swahili as it is spoken in the Type 2 speech community of Kenya relations between a predicate and its arguments are expressed by word order instead of inflectionally as in Standard Swahili; ii) in Moroccan Arabic derivational voice has been replaced by inflectional voice; and iii) in most Germanic - and Scandinavian - languages mood inflection has been replaced by auxiliaries and pragmatic devices.
2.1.2 Transparency

Different from the number of semantic notions in inflectional morphology is the manner in which these notions are expressed. The exponents of semantic notions receive a definite form and a definite position in the morphological word. It is often assumed that a one-to-one-relationship between meaning and form is the optimal way of relating these two. For instance, Carstairs-McCarthy says (1987: 13): "everyone will surely agree about the simplest imaginable relationship between inflexional content and expression: perfect one-to-one pairing between morphosyntactic properties on the one hand and their inflectional exponents on the other." Carstairs-McCarthy relates this idea of an ideal language state to Natural Morphology (Mayerthaler 1981), and older ideas from the nineteenth century (von Humboldt 1836). I will call this the Transparency Principle as in creole studies (Seuren & Wekker 1986). In historical linguistics this same principle is considered to be the driving force behind analogical change (cf. Van Bree 1990: 107ff.), and, primarily on the syntactic level, behind the resetting of parameters in the UG framework (cf. Lightfoot 1979). In Noyer (1992) the measure of transparency is considered as one of the dimensions on which languages may vary. The 'simplest imaginable relationship', as Carstairs-McCarthy calls it, must be understood from a linguist’s perspective which does not necessarily imply that it is simple for all kinds of language users alike. In section 2.4 I will examine how the various aspects of Transparency relate exactly to the notion of complexity. Now I turn first to four possible ways of deviation from Transparency: fusion, homonymy, allomorphy and fission.

2.1.2.1 Fusion

When one single form comprises several semantic notions, we speak of fusion. See for instance, the expression of both person and number in one affix in the Icelandic verb 'to demand':

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<tbody>
<tr>
<td>1SG.IND</td>
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</tr>
<tr>
<td>2SG.IND</td>
<td>kref-ur</td>
</tr>
<tr>
<td>1PL.IND</td>
<td>krefj-um</td>
</tr>
<tr>
<td>2PL.IND</td>
<td>krefj-ið</td>
</tr>
</tbody>
</table>

A necessary condition for fusion is that the fused categories display at least some independent variation, otherwise there is no fusion, but only one category. For instance, person and inclusiveness are not fused in Icelandic because the inclusiveness/exclusiveness distinction is not found anywhere in Icelandic.

Fusion takes place below the surface. A second necessary condition is that the affix that expresses the fused notion is a unit, and does not consist of two discernible parts that have assimilated. In this latter instance we speak of allomorphy, see below. However, the border between fusion and allomorphy is not always easily drawn. In the next example from Icelandic mood (subjunctive/indicative) and person (1st and 2nd) seem to be fused.

<table>
<thead>
<tr>
<th></th>
<th>kref</th>
</tr>
</thead>
<tbody>
<tr>
<td>1SG.IND</td>
<td>kref</td>
</tr>
<tr>
<td>2SG.IND</td>
<td>krefj-i</td>
</tr>
<tr>
<td>1SG.SUBJ</td>
<td>krefj-i</td>
</tr>
<tr>
<td>2SG.SUBJ</td>
<td>krefj-ir</td>
</tr>
</tbody>
</table>
However, an analysis where -i- expresses the subjunctive mood is more elegant here than when mood would be considered to be part of the fused morphosyntactic category (cf. section 5.2.2.2 for more details).

2.1.2.2 Homonymy

When one form expresses several semantic notions, depending on the context, this is called homonymy. For example, Icelandic krefj-um may express both 1PL.PRES.IND and 1PL.PRES.SUBJ. In contrast with fusion, the subsumption of several meanings under one form occurs in a paradigm, rather than in a syntagm. The same caveats apply here as in the case of fusion; at least in some instances the semantic notions in question, in this case, subjunctive and indicative, must be distinguished in the paradigm, otherwise there is no reason to speak of two separate categories. For instance, 1PL.INCL and 1PL.EXCL are not homonymic in Icelandic since the inclusiveness distinction is found nowhere else in the language.

In this respect my analysis differs from the universalist view of Cysouw (2001). He examines the manifestation of the set of person and number distinctions, and does not distinguish between the absence of the inclusiveness distinction in Icelandic from true homonymic relations in Icelandic (cf. Cysouw 2001: 115). I distinguish these two by my definition of homonymy: only conditioned absence of a category counts as homonymy in my model. I also distinguish these two phenomena by the difference between relative and absolute economy, which distinguishes absolute absence of a category from absence conditioned by the linguistic environment (see section above). In fact, Relative Economy and homonymy overlap considerably. Relative economy concerns the co-occurrence restrictions on semantic categories, while when one semantic notion is always absent when combined with another notion, this becomes apparent in homonymy.

The instances of homonymy discussed so far are called ‘structural homonymy’ by Carstairs-McCarthy, since the homonymic relations hold for all manifestations of the categories in question. Carstairs-McCarthy (1987: 91) discusses also ‘accidental homonymy’. For instance, the 1SG.PRES.IND and 1SG.PRES.SUBJ. of the so-called 2nd weak class in Icelandic have accidentally the same form, e.g. diem-i, while in other verb classes these forms are distinct. This similarity is, however, only phonological and accidental. Although there are some interesting intermediate cases (cf. Carstairs-McCarthy 1987: 93ff. and section 5.2.2.1), usually these two kinds of homonymy can be distinguished, and their role in language change is different as well. Accidental homonymy emerges through ‘blind’ phonological change, while structural homonymy is a result of analogical levelling. We will see that accidental homonymy is more prone to change than structural homonymy. In addition the learning of accidental homonymy seems more difficult than of structural homonymy (see section 2.4.2.2). This distinction is also made in other frameworks, cf. Noyer (1992), who distinguishes 1) Impoverishment, which I call ‘Economy’, 2) underspecification of affixes, which corresponds to ‘structural homonymy’, 3) accidental identical affixal material, which I call ‘accidental homonymy’. Typological approaches like Cysouw’s (2001) miss this distinction.

Within structural homonymy, Carstairs-McCarthy (1987) distinguishes homonymy between fused morphemes and between non-fused morphemes. He argues that the former kind of homonymy is more likely to occur, since such homonymy reduces the total number of affixes used, while the latter kind uses at least the same number of affixes. For example, in
the homonymy above, where the indicative and subjunctive moods occur in the plural in
Icelandic, it results in Icelandic having one less affix in its inventory than Old Norse, where
1PL.PRES.IND and 1PL.PRES.SUBJ had distinct forms.

The former kind of structural homonymy is called ‘syncretism’ by Carstairs-McCarthy
(1987). An example of homonymy between non-fused morphemes is provided by Bolivian
Quechua, riku-rqa-yku means both ‘see’ 1PL.EXCL.PAST 2 and 1PL.EXCL.PAST
UNSPECIFIED (→ refers to the direction of agentivity; e.g. in the first example a 1st person
subject acts on ‘sees’ a 2nd person object). The first form is remarkable since other forms
with a second person object are marked by an additional 2nd person suffix. (cf. section
6.3.1).

2.1.2.3 Allomorphy

The third deviation from Transparency is when one semantic notion has several
expressions paradigmatically: allomorphy. For example, the Icelandic second person
verbal affix in the present indicative has three allomorphs: -ur, -ir or -r, depending on the
morphological class to which the verb belongs. Allomorphs differ from allophones because
they are not related to each other by phonological rule, either because the forms of the
allomorphs cannot be related to each other phonologically, as in the example below, or
because the distribution of the allomorphs is not related to a phonological trigger, as in the
Icelandic example above. Allomorphy is frequent. Its emergence is often a result of
phonological changes, or of interaction between registers, dialects or languages. It may
also result from semantic distinctions that get lost.

Allomorphy has several dimensions: 1) the choice of the allomorph can depend on
phonological, morphological, lexical, syntactic or semantic conditions; 2) the set of
candidates can consist of two, three or more forms; 3) the alternative candidates can be
more or less similar to each other (cf. also Plank 1999: 306ff.).

An example of largely phonologically conditioned allomorphy is the plural affix allomorphy
in Dutch: -s/ -ə. Roughly, -s appears after unstressed syllables and loan-words, -ə after
stressed syllables. This allomorphy also displays lexical idiosyncrasies, and is not
homogeneous in the Dutch speech community. As far as this affix is not regularly
conditioned, it is lexically conditioned; that is, its form is only defined by the lexeme in
question.

Examples of morphological constraints on allomorph selection are found in languages with
morphological classes. For instance, the Icelandic affixes above are morphologically
conditioned since the choice of the affix depends on the class to which the verb belongs.
 Morphological conditioning differs from lexical subcategorisation in that a morphological
class pertains to more than one phenomenon in a language. If not, then the class distinctions
boil down to lexically conditioned allomorphy.

Allomorphy is often conditioned semantically. In e.g. Icelandic the choice of the
person/number affix depends on the semantic category of the tense expressed by the verb.
In cases where the semantic category itself is not expressed it is not clear whether the affix
is an allomorph or whether it expresses the unexpressed category. Plank (1999: 306) refers
to Tamil, where the form of case suffixes depends on a kind of animacy, that is, rationality,
of the referent of the noun. However, the rationality is not expressed otherwise on nouns in
Tamil, and it may be argued that the affixes are fused affixes of rationality and case.
Similarly, if the semantic category is blurred with the allomorph in question, there may be fusion (cf. also section 7.2.2.2).

Syntactic allomorphy is exemplified in cases where constituent order defines what affix form must be chosen. An example of this is the form of the Dutch second person singular present tense affix. When the second person pronoun precedes the verb the affix is -t, and when the pronoun follows the verb, there is no affix (or there is a null affix).

In addition to the various kinds of allomorphy, the number of allomorphs may also vary, from two to ten. And, in languages with ten noun classes, it may be even higher, when we stretch the limits of what still counts as allomorphy and what counts as suppletion or lexical variation.

In the Icelandic example above, the affixes strongly resemble each other, because the variation historically stems from one common source. The drifting apart in such instances is caused by the (partial) loss of the relation between phonological conditioning factors and their phonological consequences. In other instances there is less resemblance, and the affixes can even have different positions in the phonological form; cf. for instance, the English plural allomorphs -s, versus ‘vowel alternation’.

Changes and variation in allomorphy are not restricted to a general increase or decrease of allomorphy, but can also affect the different conditioning factors. For example, in the Nilo-Saharan Surmic language Baale there are six plural markers, whose distribution is conditioned phonologically. Two more markers are only lexically conditioned. In the related Surmic language Murle, however, there are about 18 plural markers, whose distribution is semantically and morphologically constrained. In the Eastern Nilotic group plural marking was originally governed lexically. In the Bari subgroup plural marking is still unpredictable. In the innovating Teso-Turkana subgroup, however, the distribution of plural affixes has been reinterpreted and is now ruled by phonological constraints (cf. Dimmendaal 1987). So, the conditions can change from lexical to semantic and phonological conditions. In addition, the number of allomorphs may vary. It can increase when e.g., loan-words begin to form a separate class with their own allomorphs, or it can decrease when e.g., a non-productive lexically governed allomorph disappears. Finally the extent to which forms resemble each other may vary.

I consider conjugation classes as morphologically or phonologically conditioned allomorphy. However, it can be argued that these are in fact language-specific categories and should therefore be dealt with under Economy. According to Carstairs-McCarthy (1999: 112ff.) conjugation classes would have language-specific meanings, because they behave like other items with meaning in avoiding synonymy and disjunctive meanings. If so, this would partly explain the stability of conjugation classes under language change. In 8.1 I will discuss this view further.

2.1.2.4 Fission
Finally, morphology can deviate from the one-form-to-one-meaning relation by fission. This occurs when one meaning is expressed in more than one form syntagmatically. Fission is the opposite of fusion, since in fission a meaning is spread over several forms, while in fusion a single form comprises several meanings.

An example of fission is found in the imperfect conjugation of Classical Arabic: 2FEM.PL ‘drink’, is t-asrab-na, in which t- and -na together express person, number and gender,
which is one fused morpho-syntactic category, in Arabic. Neither the prefix nor the suffix position can be analysed for the whole conjugation as being reserved for a specific meaning in an elegant way (cf. also section 4.2.1.3).

Fission is not always easily distinguishable from allomorphy. If a category appears to be fissioned, first into one affix, and secondly into a separate affix that also expresses another semantic category, then it is unclear whether the second affix is really a fused form, or whether it is only an allomorph of the second semantic category, selected because of the presence of the first category. For example, in Bolivian Quechua *riku-wa-*rqa-yku 2/3PAST±1PL.EXCL ‘see’, the forms *-wa* and *-yku* both express 1st person of the object, and it could be argued that 1st person is fissioned into two affixes. However, *-yku* can also be analysed as an allomorph of a plural affix, semantically conditioned by the person category.

In some morphological theories (Noyer 1992), this latter kind of fission is not allowed, because these theories assume that affixes discharge semantic meanings, and that each meaning can be discharged only once. A basic non-fused category may, therefore, never be expressed in more than one affix. In that perspective the Quechua case above cannot be a case of fission, in contrast with the Arabic case. Data from Slave (Rice 1989), however, suggests that, in Athabaskan languages, for some single categories it is more elegant to suppose that fission has taken place. In the history of these languages unstressed negative affixes were ‘assisted’ by extra negative markers, which later also became morphologised, leading to two expressions for a single category in one word. I will not delve into this theoretical question further, though I will discuss in the relevant sections of Swahili and Quechua whether allomorphy or fission is the best label in these individual cases.

2.1.3 Isomorphy
2.1.3.1 Background
In addition to principles that concern the number of categories (Economy), and the way these categories are expressed (Transparency), a principle is needed that concerns the order of morphological elements. I call this principle the Isomorphy Principle.

It has been frequently noted (cf. Borer 1998: 170ff.) that the order of inflectional affixes with respect to each other and the stem tends to be isomorphic to their order in some postulated syntactic hierarchical representation. For instance, objects are syntactically ‘closer’ to the verb, in the sense that there are fewer intervening maximal projections between object and verb than between subject and verb. This is reflected in the morphology where object affixes are usually closer to the stem of the verb than subject affixes. The same kind of reasoning applies to tense, aspect and other inflectional categories.

There are three theoretical perspectives that influence our interpretation of Isomorphy, cf. Figure 2.1. First of all, it has been argued that (inflectional) morphology is derived in syntax. This position is originally taken by Chomsky (1957), and more recently by Baker (1985). According to what became known as the Mirror Principle morphological operations of forming causatives, applicatives, passives, and also agreement, take place in syntax, and the order of affixes therefore must follow the order of application of
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syntactic rules. This position runs into problems, however, in cases where affix order is more capricious.

<table>
<thead>
<tr>
<th>Position 1</th>
<th>Position 2</th>
<th>Position 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Syntax</td>
<td>Syntax</td>
<td>Cognition</td>
</tr>
<tr>
<td>Morphology</td>
<td>Morphology</td>
<td>Morphology</td>
</tr>
</tbody>
</table>

Figure 2.1 Perspectives on the morphology/syntax interface

The second position is that the order of affixes in morphology is independent from syntax. In that view morphology is a distinct module, with its own rules and principles. So, Isomorphy does not necessarily play a role in these theories. This perspective was originally assumed in traditional descriptive linguistics where less attention was paid to syntax (cf. Sapir 1921). More recently Anderson (1992) has claimed that there are phenomena in morphology, like metathesis, subtraction, and portmanteau morphemes, that make morphology essentially different from syntax. Syntactic principles only minimally manipulate internal properties of a word. In this model the order and form of morpho-syntactic features is governed by morphological Word Formation Rules, which are inaccessible to syntax.

Both these positions in their extreme form are unsatisfactory, at least for my study. On the one hand there are too many morphological intricacies that deviate from the principle of Isomorphy, while on the other hand there is also too much correspondence between morphology and syntax to assume two independent modules.

Today, within the first position a more balanced and comprehensive framework has emerged, the one of Distributed Morphology of Halle and Marantz (1993), see also (Noyer 1992). They want to preserve the original insights of Baker (1985), and have therefore developed a mechanism to account for the apparent exceptions. They argue that the Mirror Principle results from the syntactic generation of inflection via head-to-head movement - in terms of minimalist theory (cf. Chomsky 1995). In contrast with Anderson (1992) they conceive morphology to be essentially concatenating: in syntax meaning features are manipulated, and in the default case each feature spells out in a distinct affix, of which the position is governed by syntax. Noyer (1992: 39) says: "...isomorphy between X's and positions of exponence is the default situation, complications of which must be expressed by additional stipulations of grammar." Complications are explained by assuming, like Anderson, that the morphological material is only spelled out after syntactic derivation. This provides ample opportunity before and during the spell-out, for operations like fusion of syntactic categories, impoverishment of the amount of features, and merger of positions in the string. Like Anderson, Halle and Marantz (1993) also assume that there is a morphological component that is not reducible to syntax. This component consists of conditions on well-formedness like templatic constraints, and demands of e.g. thematic vowels.

However, for Distributed Morphology problems remain as well. In Ayacucho and especially in Bolivian Quechua (see Van de Kerke 1996b, and below, section 6.3.1) affix orderings exist that violate the isomorphy between semantic interpretation and cyclical build-up of the morphological representation. Apparently the Mirror Principle, or
Isomorphy Principle, is no more than a tendency in languages and allows exceptions. These exceptions may arise for phonological, semantic, or historical reasons.

Now we come to the third position, in which morphological order is only indirectly related to syntactic order, by association with similar cognitive principles. In this view the Isomorphy Principle is a default, but nevertheless violable, principle in information processing (cf. Bybee 1985; Wunderlich 1996). Bybee (1985: 15) claims that there is a general cognitive principle of Relevance which says that the order of affixes reflects the order of relevance of morphological categories to the stem: “A category is relevant to the verb to the extent that the meaning of the category directly affects the lexical content of the verb stem”, and “[t]hese results -a study of morpheme ordering- suggest a 'diagrammatic' relation between meaning and their expression, such that the 'closer' (more relevant) the meaning of the inflectional morpheme is to the meaning of the verb, the closer its expression unit will occur to the verb stem” (Bybee 1985: 33). As discussed in section 2.1.1, this Relevance Principle may also be the driving force behind the informativeness hierarchy of syntactic-semantic categories. Wunderlich (1996: 97) writes:

“The hierarchies of functional categories are semantically based. In order to adequately specify and bind the time and world parameters of the situation the verb is referring to, aspect must apply before tense, and tense before mood….The way in which these hierarchies control affix order may be modified due to certain historical developments in a particular language, so that the hierarchy of functional categories, as far as it is semantically determined, is violable.”

I also assume that Isomorphy is a meta-condition on morphological systems, according to which structures that comply with this Principle are more appreciated in certain contexts of use. Languages may violate this Principle, but since it remains present, it may resurface under e.g. circumstances of language contact. Like in my discussion of the Economy Principle I do not go further into the question whether the Isomorphy Principle represents the innate default state for a child learner, or whether it is a preferred guideline emerging from demands of cognitive processes.

### 2.1.3.2 Aspects of Isomorphy

Now I describe exactly what the Isomorphy Principle entails. According to Bybee (1985) the ideal order of inflectional affixes in terms of Relevance is as follows:

Stem >> Valency >> Voice >> Aspect >> Tense >> Mood >> (Number >> Person >> Gender).

Bybee’s research did not focus, however, on the last three categories. In more recent work in Distributed Morphology and in syntax (cf. Chomsky 1995: 60) it has been proposed that the Object Agreement node is closer to the verb than the Tense, Aspect and Mood nodes. The ideal order would then be as follows ( “>>” means ‘is ordered closer to the verb root than’, and does not implicate any left or right ordering):

Stem >> Valency >> Voice >> NumObj >> PersObj >> GenderObj >> Aspect >> Tense >> Mood >> NumSub >> PersSub >> GenderSub.

Since this latter order is assumed in most modern syntactic and morphological research, and since it has been corroborated as a fairly frequent order by cross-linguistic research as well, I suppose that this is the ideal ‘Isomorphic’ order.
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In two ways affix orderings may violate the Isomorphy Principle. First of all a language deviates when its affix order contrasts with the ideal order above. Secondly, a language may have an inconsistent affix order.

2.1.3.3 Marked affix ordering

An example of a marked affix ordering is provided by the standard koiné of Moroccan Arabic (cf. section 4.4.2.3). In this variety the order of affixes is as follows:

(Mood) - (PsubGsub)imp - (Voice) - [Verb+Aspect] - GsubNsub(Psub)perf - (PobjGobjNobj).

Mood is found outside subject agreement, and voice is outside aspect. In northern city dialects, this order in many verbs has become more compliant to Isomorphy when the category of aspect was lost in the stem, and when at the same time the aspectual allomorphs in subject agreement came to carry the whole functional load of aspect.\(^{14}\) In an analysis where aspect is still expressed in the stem by zero, there would be no change in Isomorphy, of course. Otherwise the analysis for strong verbs in urban dialects is:

(Mood) - (PsubGsubAspect) - (Voice) - [Verb] - GsubNsub(PsubAspect) - (PobjGobjNobj).

Another example of a marked affix order in Ayacucho and Cuzco Quechua is:

(1) Riku- wa- rqa- nki- ku.

see- OBJ- PAST- 2- PL

‘You saw me/us.’

One of the three interpretations of this form is: ‘you saw us’, where PL does not refer to the adjacent (subject)affix but to the 1\(^{st}\) person object.\(^{15}\) Under this interpretation NUMOBJAGR is in a marked position, since the ideal order given above demands that subject and object agreement affixes appear as blocks without interspersing with other affixes. In the Ecuadorian Quechua variety the same form exists but this specific interpretation where NUM refers to the plurality of a feature two positions away, is impossible.

2.1.3.4 Inconsistent ordering

Sometimes, it is not the basic affix order that deviates from ideal Isomorphy, but the inconsistency of ordering that violates Isomorphy. Consider the next two examples from Ayacucho Quechua (cf. section 6.2.3):

(2) Riku- wa- rqa- nki.

see- OBJ- PAST- 2

(Stem-P1- P2- P3)

‘You saw me.’

(3) Riku- su- rqa- nki.

see- su- OBJ- PAST- 2

(Stem-P1- P2- P3)

‘He saw you.’\(^{16}\)

\(^{14}\) Cf. section 4.4 for full details; the distinction of weak versus strong verbs prevented a complete loss of stem aspect.

\(^{15}\) The three interpretations are: ‘you(pl) saw me’, ‘you(pl) saw us’, and ‘you(sg) saw us’.

\(^{16}\) The glossing of su is irrelevant here. In section 6.3.3.2 I further discuss su in Quechua inflection.
In example (2) the affix order complies with the Isomorphy Principle; *wasi* is an object affix, and *nki* a subject suffix. Example (3) violates consistency in ordering: in contrast with the first example, subject agreement takes place in position (P) 1, and object agreement in position 3. In contact varieties like Argentinean and Ecuadorian Quechua such forms either tend to disappear or be reinterpreted into forms that comply better with Isomorphy.

The problem with such examples for Halle and Marantz’ (1993) approach is that the interpretation of *-nki-* as a subject or object in the two sentences is not determined by its position or its form, but by the other affixes in the string. The relations between on the one hand second and first person, and on the other hand, third and second person overrule Isomorphy (cf. section 6.3.3.2, and also Lakämper and Wunderlich 1998; Van de Kerke 1996b).

In cliticisation inconsistent orderings are even more prevalent. For instance in French the next two examples are inconsistent:

(4) Je te le donne.
   I you it give
   ‘I give it to you.’

(5) Je le lui donne.
   I it him give
   ‘I give it to him.’

In example (4) the indirect object clitic precedes the direct object clitic, while in the other example the order is the other way round.

### 2.1.4 Other factors

The three Principles above are universal morphological principles which are meta-conditions on morphological systems, and which are pertinent for all language users. Other principles may run against the above principles. Some of them are universal, but not morphological, others are morphological, but not universal. I will discuss these more briefly than the above principles, since my focus is on the importance of the latter in different social situations, and the principles below are only relevant in a secondary way.

#### 2.1.4.1 Animacy Principle

The Animacy Principle requires that animacy hierarchy is reflected in language structure (cf. Corbett 2000). In this hierarchy the least animated entities, like lifeless objects, are lowest. On the next steps are living creatures, and one step further animals are found. On the highest step are humans which are further subdivided with respect to their importance for the speech situations, with 3rd persons below 1st and 2nd persons.

- living << animate << human << definite << 3rd person << 1/2 person.

This hierarchy is partially culturally influenced. For instance, deities may have a high place, and furthermore, languages vary in having 1st or 2nd person on top of the hierarchy. The hierarchy is apparent on several levels of language. In morphology, it may result in restrictions on feature combinations or affix order. For instance, if there is a fused affix for plural and person, then the third person -lowest on the hierarchy- will be the first feature that will not be expressed under Economy, cf. the paradigm of Ecuadorian
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Quechua in section 6.4.1. Affix order is also governed by animacy in Quechua: the inconsistent affix order of example 3 above is determined by a person hierarchy, 1 >> 2 >> 3, where the feature that is higher on the scale must be interpreted as the object, irrespective of the morphological order and the Isomorphy Principle. Therefore, while the order in (3) above suggests that the 3rd person is the object, due to the hierarchy, it is the 2nd person which is the object (cf. also section 6.3.3.2, Lakämper & Wunderlich 1998; Van de Kerke 1996b).

2.1.4.2 Suffix Principle
This principle simply states that suffixes are preferred above prefixes. It derives from the observation that suffixes far outnumber prefixes, especially in inflectional morphology (cf. Greenberg 1978). The reasons for this principle may spring forward from processing considerations; Clark (1998) noted that suffixes were more easily learned by children than prefixes, and McQueen and Cutler (1998) also found that suffixes were easier to process.

2.1.4.3 Phonological Principles
There are various phonological principles that may interfere with morphology. The essential difference between phonological and morphological principles is that the latter refer to meaning-form relations, while the former only concern the formal side. The relation between these principles varies. For instance, in Najdi Arabic phonological principles of vowel harmony result in a more opaque morphological relation between passive meaning and form (cf. Ingham 1994 and section 4.3.3.1), while in Classical Arabic preservation of the morphology is more important than the requirements of vowel harmony.

There are several kinds of phonological principles: (a) principles that focus on ease of articulation like assimilation, vowel harmony and syllabic well-formedness principles; (b) principles that concern better perception, like the saliency principle; (c) principles less directly based on phonetic principles, like principles of metrical structure. Since there is a wide diversity of phonological principles, and because the focus in this study is on morphology, I will not elaborate on these again. In the case studies below I discuss phonological principles as they relate to each individual language.

2.1.4.4 Morphological Principles
Under this heading I group all non-universal morphological principles. These consist of position and order templates and of demands on paradigmatic structure.

The number of categories and affixes that can be expressed in a word is determined by the Transparency and Economy Principles and by phonological principles. However, some phenomena cannot be reduced to these universal principles. For instance, in Classical Arabic specific word classes have a specific form, e.g., a past perfective is always expressed as: CaCVC-SUFFIX, and a present tense as PREFIX-CCVC-SUFFIX. This cannot be explained by meaning-independent phonological principles, since the choice between such ‘templates’ is meaning-dependent (cf. Stump 1996). It can also not be explained by other morphological principles, like Transparency, because these templates introduce fission and fusion, thereby contravening Transparency (cf. section 4.2.2.4 and Noyer 1992).
In Arabic, templates are part of the meaning of a word. In other languages there are specific word class constraints which do not bear meaning in themselves. Wurzel (1987: 65) calls these system-defining structural properties (SDSP):

"The SDSP's determine the identity of inflectional systems...They determine what is normal for the inflectional morphology of an individual language. Their status is neither that of grammatical rules (they represent overriding structural features) nor of grammatical universals (they differ from language to language) but rather that of generalisations of the morphological forms and rules of the respective language made by the speakers of a language."

In some cases the order of affixes is also not fully explained by the universal Isomorphy Principle or by phonological principles. Noyer (1992: 241) discusses variations in clitic placement in syntactically similar Catalan dialects, which cannot be explained by any universal principle. Another example is the Kambera system of clitic placement. Klamer (1997: 918ff.) argues that part of the clitic order must be assumed to be completely language-specific. Therefore, there must be independent ordering templates, analogous to independent positioning templates.

An important characteristic of inflection is its paradigmatic structure. That is to say: the meaning of an affix is often not independently given, but depends on the meanings of other related forms in a paradigm (cf. Anderson 1992; Matthews 1974). In paradigmatic systems there is often no one-to-one correspondence between affixes and meanings. For instance, in Bolivian Quechua there is an inflectional ending *wa-yku*. Its meaning, however, is not a simple computation of the meaning of *wa* added to the meaning of *yku*. Instead, it depends on other formally and semantically related forms in the Quechua inflectional paradigm. Inflectional systems can make use of such paradigmatic networks of relations, in which meanings limit each other in the paradigm, instead of making use of direct links between an affix and a meaning. Such paradigmatic structures may disturb universal principles like Transparency and Economy. Although paradigmaticity is a universal phenomenon, its precise implementation is language-dependent. In section 3.3.3.3 I further elaborate on how to account for paradigmaticity in OT.

2.2 Language processing

In this section I discuss different dimensions of processing, which will define the content of complexity to a greater extent.

2.2.1 Production and perception

Most forms of language are both produced and perceived, except for dead languages, which are no longer produced - though these have also been produced once - , and those forms of speech that are only spoken, like spells and prayers. Most language users also function in the role of both speaker and listener. This does not imply, however, that these two processes are similar.

In fact, production is quite different from perception: in production a language user already gives shape to a ‘meaning’, that is, concepts, actions or bodily states in the

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17 Although spells and prayers have an intended audience, it is usually not checked whether that audience can hear the actual spoken words. Spells and prayers are more prone to be spoken softly or pronounced silently.
utterance, while in perception a language user only hears an utterance but does usually not know its full meaning yet. Although these processes mirror each other, this does not entail that they meet similar difficulties, just like trying to push ketchup into a bottle is quite different from trying to get it out of a bottle.

For instance, in the production of a language with, say, five vowels, the language user will need to make less effort in terms of muscular movements, when the vowels have phonetic values closer to each other, and when they converge in the direction of a smaller area in the vowel space, which is apparent from unstressed vowel reduction phenomena (cf. De Lacy 2002). However, from the point of view of perception it is the other way round. A hearer prefers clear distinctions for optimal understanding. He would prefer the vowels to be acoustically as distinct from each other as possible.

In this example speakers and hearers have opposing preferences. In actual languages we see that sometimes the preferences of the hearer are followed and sometimes those of the speaker. For instance, in Russian, most vowel distinctions disappear in the unstressed position, but not in related Polish (Smoczynska 1985). With respect to vowel distinctions, Russian can be characterised as more speaker oriented than Polish.

Speech communities always consist of both speakers and hearers. However, in some situations more attention is paid to perception difficulties and in other situations more attention is paid to production difficulties. During the transmission of important information to someone whose knowledge of the language in question is not perfect, attention to possible perception problems will be relatively great. However, when speaking to close relatives with whom the information transmitted is often shared more attention will be paid to production difficulties. Speech communities differ with respect to what kind of situations dominate (see section 2.3).

2.2.2 Child and adult learning

While production and perception are obviously different activities, they are always fundamental to speech communities. Language (L1) learning by children, versus language (L2) learning by adults, are not necessarily both present in a speech community. There are speech communities that have only first language learners and others that only consist of second language learners.

L1 and L2 learning both progress from knowing nothing specific about a particular language towards a state of full command, although this final state is often not attained for L2 learners. L1 learners differ from L2 learners in that the latter already know a language in the beginning. The order and speed of acquisition differs between L1 and L2 learners. The causes of these differences are still under discussion in language acquisition research.

Some assume that L1 learners have an innate language learning device, which becomes less accessible after the age of about six, and which cannot be used by adult learners (cf. Meisel 1997a). Adults, in turn, would have cognitive capacities showing a higher degree of maturity than those found in children. These different capacities would cause different

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18 What kind of entities must be supposed to be present in the speaker with respect to an utterance is largely dependent on philosophical and theoretical choices, which do not concern us here.

19 I take L2 learning to be ‘naturalistic’ learning, that is, learning without explicit classroom learning methods.
ways of acquisition. Other authors, however, stress the effects of interference of the first language of L2 learners (cf. Dulay et al. 1982). Finally some studies (cf. Ellis 1997) suggest that differences in the success of language acquisition are caused by social, motivational and interactive differences between adults and children. I will not delve too deeply into these issues. What is relevant here is the question of what structures cause difficulties with respect to a child versus an adult learner. In section 2.4 I will discuss what differences have been found for each inflectional Principle.

Unfortunately, the differences between what is difficult in L1 learning versus L2 learning are not fully known. Much modern research in language acquisition concerns questions of accessibility of the innate language acquisition device, and such research primarily involves theoretical notions embedded in a UG framework. Moreover, the focus is mainly on the acquisition of one particular language, while comparison of the acquisition of similar notions in different languages is less common. With respect to L1 acquisition, however, there is valuable research, primarily in Slobin’s (1977, 1985-1997), and Bates and McWhinney’s (1982) functionalist models. L2 acquisition studies offer fewer results. In addition, L2 acquisition is affected by factors that prevent straightforward conclusions about what is complex from a general point of view. First of all, the first language of a language learner influences the success of learning particular structures. Secondly, there is high inter- and intra- learner variability, in comparison with L1 acquisition, with respect to both the order with which particular constructions are learned, and the speed and final success of learning the foreign language. Furthermore, there are different settings for learning a second language, ranging from learning in school to naturalistic learning, that is without formal teaching. This results in wide variation between learning paths. Nevertheless, recently some cross-linguistic data and general models (cf. Pienemann 1994; MacWhinney 2002) have been developed which deal with general patterns of second language acquisition.

The proportion of L2 learners of the total set of learners of a language in a given community varies greatly. Although this proportion can, in principle, be measured, the biggest problem is that the available data are not precise enough, neither for the ratio of L1/L2 learners, nor for the first language of the L2 learners.

2.2.3 Communicative and symbolic function

Until now I have assumed that the context in which learning, production and perception take place is always the same. However, a language user is active in an array of different contexts in which language fulfils diverse functions. For instance, a particular language may be used to negotiate in the market-place, to talk with officials, to act in a ritual context, or to speak among close relatives. For the purposes here, I reduce all these functions to two broad functions of language, which are 1) the communicative function: communicating new information and influencing a hearer, and 2) the symbolic function, which prevails when language is used for all kinds of other -symbolic- reasons. These two functions are abstractions from actual situations, and in most situations both dimensions are present. However, this division is motivated by the fact that the two

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20 Other divisions of functions have been made by e.g., Jakobson (1960), Halliday (1973), Horalek (1964) and Hymes (1974), with which my set of distinctions tallies. The communicative function corresponds, for instance, to Jakobson’s referential, conative and metalingual function, and the symbolic function to Jakobson’s poetic, phatic and emotive functions.
functions correspond to opposing pressures on language structure with respect to inflectional complexity. Moreover, speech communities can be distinguished to the extent that they use language more for communicative or more for symbolic purposes.

The communicative function is the function in which language is used to depict a state of affairs, and to transmit this information as clearly as possible to a hearer. In this function stress is laid on the informational content of a message and the transmission of this information. In the communicative function language is used to represent (a model of) reality, and to spread such a representation to others. In most semantic approaches, this informational-representational view on language is taken as the basic function of language to which all other functions can be reduced.

The communicative function prevails in situations where interlocutors interact primarily with each other to transmit information as quickly and smoothly as possible. For instance, at an open market-place where people only interact to buy and sell, language is mainly used to convey information, and to represent a state of affairs clearly and without ambiguity. Other examples are situations where people work together. In factories, shops, the army, plantations, etc., the communicative function is clear when language is used to facilitate the dispersion of information on how to perform, and how to cooperate. In written instructional language the communicative function is most obvious: in aircraft manuals, surgeon’s procedures, and juridical contexts, language must be foremost instructive and unambiguously representational.

The symbolic function is less concerned with depicting information and meaning. Instead of the content, it is more directed at the form of a message, and the symbolic values it can carry in this form. When a formal elaboration is invested with symbolic meaning, it may remain in the structure of a language, even when it does not improve efficient and clear communication. The symbolic function has three aspects: 1) it may shape and reinforce group identity; 2) it may serve some aesthetic feeling, which corresponds with Jakobsons’s (1960) ‘poetic function’ of language; 3) it may express speakers’ attitudes, which corresponds to Jakobson’s (1960) emotive function. Although the attitudes of a speaker relate to some informational content they are detached from plain meaning transmission.

These aspects of the symbolic function are most apparent when people gather with no intention to acquire new information. This may be in a religious context, in a conversation where mutual solidarity relations are stressed or in events where language is used in verbal play. Language may then be used to preserve a relation with the past, and support a group identity through time (cf. Jónsson 1998; Hastrup 1998). For instance, in Icelandic (cf. section 5.1.2), certain expressions are preferred just because they were also used in the past. By retaining such older forms a sense of continuity with earlier generations, that is a group identity, is expressed. In oral cultures (cf. Goody 1968; Ong 1982) this means that oral narratives are often repeated and retained in the same form as before. The conservation of a similar form is easier in oral culture when language structure has certain characteristics. Language may also be used to create a distinct group

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21 That is, information in a strict meaning of the term. It may be argued that the symbolic function also carries information. However, this seems to be information of another kind. While in the representational mode information represents something that was in one way or another already "out-there", in the symbolic mode something new seems to be created.
identity in space. To express membership of a certain group, presumed characteristics of this group are adopted and contrasted with characteristics of another group (cf. Barth 1969). These characteristics may consist of the kind of clothes one wears, stories about a common origin, a common religion, or common linguistic indicators of group membership. These latter indicators of one’s identity as a group member can be e.g. the use of particular words, phrases, or a specific intonation. The groups can be generational groups, different groups on a social hierarchy scale, but also geographical groups. For instance, Arabic as spoken by Najdi Bedouins has served for a long time as the reference point for speakers’ judgements on how proper Arabic should be, while today Standard Arabic fulfils this function in the Arab world. As far as today features from Standard Arabic are adopted just to express one’s identity as an Arab, the symbolic function prevails. This aspect of the symbolic function is related to the idea of prestige. In these examples from Icelandic and Arabic the poetic aspect of the symbolic function is also present. Bedouin Arabs and Icelanders do not only stick to their varieties because they yield them identity. The use of these varieties is interwoven with the importance of literature in their community. Najdi Arabic and Icelandic serve as the vehicle and the medium of oral and literate culture, and are also appreciated because of this role of medium for creating, conserving and transmitting culture. Finally, the development of different styles and ways of expressing the speaker’s attitudes is also placed under the symbolic function. The modifications and modulations of messages enlarge the range of personal touches a speaker can add to the information transmitted, but do not necessarily improve the transmission of information. Such an elaboration of language is also related to the broad category of ‘oral culture’, and the growth of a stylistic repertoire is associated with the poetic and the identity shaping aspects of the symbolic function.

The symbolic function of shaping group identity may be independent from considerations of optimal efficiency and transparency. Sometimes the symbolic function even conflicts with the communicative function. Language may be used, not only to shape a distinct group, but also to exclude others from the group. In that way, language may be used in a manner as intransparent and opaque as possible for outsiders. Efficiency and clear transmission of information is in such a case avoided. Hymes (1971: 73) writes:

“If the simplification of pidgins is a means of transcending language boundaries, might not the complication of some languages in outer form, such as those of many small American Indian communities of the Pacific Coast, be a means of maintaining boundaries? Within a small community, sharing a maximum of knowledge and experience, variation in form, variable relation between form and grammatical function, syntagmatically complex words, reliance on inflational, and covert relations might more easily develop. Such a development could at least have the effect of maintaining boundaries between small autonomous communities. Such an effect might be welcomed, even cultivated, especially where one’s language is regarded as the vehicle of indispensable lore, where it might serve to discriminate against persons who marry in, etc.”

The three oppositions discussed here: production versus perception; L1 versus L2 learning; and communicative versus symbolic function, are not independent from each other. A second language may be acquired for various reasons. Depending on the motivation of the second language learner, the communicative or the symbolic function is

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22 The actual situation in the Arab world with respect to multidialectism and multilingualism is far more complex than this.
more important. When for instance, a foreign language is learned in order to facilitate trade and information exchange, the communicative function is in the foreground. When, however, a second language is acquired because of e.g. its prestige, the symbolic function is more important.

The communicative function is closely attuned to the requirements of the production/perception dimension, while the symbolic function depends less directly on that dimension. Optimal communication - in the strict sense of communication as information transmission- means that the highest amount of information is transmitted to a hearer with the least effort and as clearly as possible. This maximal clarity and minimal effort can be translated as speaker and hearer interests of efficient processing. In the symbolic function, in contrast, demands of the speaker and hearer are less relevant, since the aim of interaction here is not information transmission, but symbolic interaction, largely free from efficiency considerations.

2.3 Different types of communities

There are many ways in which speech communities can be grouped. I propose one particular, and define two prototypical speech communities, Type 1 and Type 2, which are extremes on a three-dimensional continuum.

In a Type 2 community the kinds of processing preferred by ‘outsiders’ (cf. section 1.2) prevail, while in a Type 1 community the opposite processing types dominate:

I. In Type 2 communities more attention is given to guaranteeing successful perception than in Type 1 communities. More attention is paid to explicitness for the hearer, and hearer’s preferences are valued relatively highly. This will be the case when some speakers have more control over the language than others, or differ in their way of speaking, or in the amount of background knowledge they have. In Type 1 communities speakers’ preferences, in contrast, override those of hearers. This is the case when the hearer already can guess what is going to be said, knows the language quite well and needs little explication. Considerable background knowledge is shared in a Type 1 community, and the transmission of information is less of a problem.

II. In a Type 1 community, the number of L1 learners far outnumbers the number of L2 learners, while in Type 2 communities L2 learners form the larger segment of the population.

III. In Type 1 communities, the language has an important symbolic function: it expresses group identity, and it is the glue that keeps the community together; it serves an aesthetic function, and it is used for the expression of individual attitudes. In Type 2 communities the main function of language is communicative, since in the relations between speakers (work, trade, etc.) interaction is characterised by the transmission of information. For members of a Type 2 community other languages may carry these symbolic functions.

When combining the three kinds of processing, we arrive at two prototypical speech communities.

Type 1 speech communities

The population of an idealised Type 1 community is relatively small, and most people know each other. Most interactions take place among members of the community, and when
interactions take place with outsiders, a different language is used. Outsiders not raised in
the community do not learn its language. The people of Type 1 communities share a large
common background. Life cycles are relatively predictable, and the concept of time is often
cyclic. Originality and innovation are not appreciated very much, and neither is the
transmission of new information. Language is used to keep social relations between
members of the community in balance.

In addition, there is a body of literature (written or oral) in the community, which has a
sacrosanct status. People are proud of their language, and they have stories and myths that
relate the origin and form of the language to their religion and their cultural origins. In
everyday life, verbal language skills and verbal play are appreciated. Different registers
exist, which are largely shared by the members of the community, while there is no dialectal
variation. Ties between community members and the possession of communal values are so
strong that no local centres of prestige can develop, and therefore, also no dialects (see
below). An approximation of this idealised Type 1 community is the Shammar community
in northern Saudi Arabia, who speak a form of Najdi Arabic (cf. section 4.1.3.4).

**Type 2 speech communities**

Type 2 communities only form a speech community because all members use the same
language. They do not necessarily form a unit in space or time, or share other social or
cultural values. The number of speakers of a Type 2 language can be high. Most speakers
know other languages as well, and the language in question is often not their first language,
but is only used as a lingua franca. The members of a Type 2 speech community do not
share much background knowledge, and their precise way of speaking the language in
question may differ. In interactions the language is mostly used for negotiating and
exchanging practical information.

The language in question is not associated with any cultural or religious standard, and
speakers accommodate their way of speech freely in order to be clearly understood. The
language does not function as a medium in which group identities are expressed. Other
languages may be more important to the speakers to express their group affinities. There are
no different registers, but there may be different dialects (see below), or at least different
ways of speaking, possibly related to the original languages of the new groups of speakers.
This has the effect that when speakers interact, they must accommodate and assimilate
each others’ ways of speech. A prototypical example of a Type 2 community is the group
of pidgin Swahili speakers in the larger cities in Kenya (cf. section 7.1.4).

The characteristics of these two types correspond more or less to earlier societal
typologies made by 1) Trudgill (1992, 1996, 1997), who described tightly knit versus
loosely knit speech communities, 2) Andersen, (1988), who distinguished between
central and peripheral communities, with exocentric versus endocentric attitudes, 3)
Thurston (1987, 1992), who discusses esoteric versus exoteric speech communities, and, 4)
Nichols (1992) who examines the effects of two kinds of geographical positions, that is,
residual areas and spread zones on language (see also Dixon 1997; Milroy 1992; Penny
and anthropological literature like Barth (1969), Giles (1979), LeVine & Campbell
In a typological study Perkins (1992) found a relation between the number of deictic categories and what he called 'complexity of culture'. Cultures in which there is little structure above the family or clan level, and in which subsistence needs little planning and organisation over time, are called less complex by Perkins, following the anthropologist Murdock (1967). Such cultures seem to foster deictic categories, while languages in more complex cultures have fewer deictic categories. Perkins suggests that this is explained by the fact that in less complex cultures more conversation concerns the immediate present to which reference is made.

With respect to the linguistic side my definition of inflectional complexity also considers the number of (deictic) categories in the verb. However, with respect to the non-linguistic side, my description of society and culture differs from Perkins’, though, there is also some overlap. In a Type 1 community there is a large background of common knowledge and communication is not focussed on optimal efficiency, while in a Type 2 community speakers share less common assumptions, and are more oriented toward efficient information transmission. The distinction between complex and non-complex cultures as made by Perkins (1992: 92) has similar characteristics:

“Communication in less complex cultures is under relaxed conditions where the speaker can plan as he goes without time pressures (Givón 1979: 296). Another important characteristic of communication among persons in less complex cultures is the amount of shared background. This is of two sorts. First, familiars share a large background of pragmatic presuppositions. Second, the topic or referents involved in a communication are often at hand or at least visible.”

The difference is that Perkins seems to assume that cultures as wholes can be plotted along a cultural complexity level within the paradigm of cultural evolutionism. However, I assume, that a community can easily switch from Type 1 to Type 2 and vice versa, and my Types are not embedded within the framework of cultural evolutionism, which is under severe criticism anyway (cf. Schultz & Lavenda 1998: 271ff.). In addition my community types are construed by combining three dimensions of language processing, while Perkins’ measure of cultures stems from anthropological theory.

Differences between cultures as envisioned by Perkins are also suggested by Fortescue & Lennert Olsen (1992: 214) when they write about West Greenlandic:

“The fact that such languages [with an abundance of semantically weighty morphophonologically variable bound morphemes with general meanings like West Greenlandic, WK] generally seem to have emerged in hunter-gathering societies in rather specific physical environments can hardly be ignored. Adaptation to a more complex world requiring greater referential specificity, greater emphasis on “things” rather than on actions and on states (for the description of which polysynthetic “holophrasis” can be extremely efficient), may militate against the preservation of extreme polysynthesis, and there do seem to be pressures of this sort at work in modern Greenlandic.”

Although my focus lies on the community types mentioned above, in some instances the disappearance of categories seems to be connected to the transition from one form of culture to another (e.g. in Arabic, cf. section 4.6). In section 8.3 I discuss how the

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23 In addition to ‘Type 1’ and ‘Type 2’ I will call the two prototypical communities also: ‘closed’ versus ‘open’ and ‘expanded’ versus ‘compact’.
sweeping changes in culture of the past 10,000 years, after first sedentarisation may have affected complexity.

Type 1 and Type 2 speech communities are ideal types, and in practice they are never found in their purest form, although some speech communities come rather close. Between these two extremes, many intermediate forms exist. On each dimension of language processing there is variation. Some Type 1 communities differ from the ideal type in having a substantial number of L2 learners, and being rather large. The Russian speech community may be an example. Deviations from the ideal Type 2 speech community are found when a lingua franca also has symbolic functions for its speakers, like Standard Arabic, or when it has a large proportion of L1 learners, like Norwegian in the late Middle Ages.

It is important to keep in mind that speech communities are not stable, and that their features are not set once and for all. A community that was once isolated may become open to new-comers, and its language may be used for communicative purposes. In many of the cases below, we will see how the inflectional morphology of an originally closed speech community changes when the language comes into another niche and assumes other functions. On the other hand, languages that served as lingua franca, mainly for communicative purposes, at one time, may become the first language and a group symbol within one generation. This is what happens under creolisation.

These two processes do not mirror each other. That is, the first process may change a highly elaborated inflectional morphology into a more transparent and economic morphology that is better suited for the new lingua franca status. The second process, which may be the opposite process in social terms, does not lead, correspondingly, to a mirrored return to an elaborate inflectional morphology. Changes in languages are often uni-directional (cf. Lass 1997). Finally, the world is not a patchwork of Type 1 and Type 2 communities. People can be part of more than one community, just as people may speak more than one language. Moreover, just as the boundaries between one language and another are hard to draw, so one community is not completely separate from another. For example, on the Faroe Isles several small dialects are spoken in small tight-knit villages. These can be considered as Type 1 communities. When, however, we perceive the complete Faroe Isles as one speech community with one language, we would rate it as a Type 2 community. The variety of Faroese used in contacts between the various dialect speakers is used more for communicative purposes, and is spoken in a less tight knit community in the capital (cf. section 5.1.3). Just like the other characteristics of the two types of communities, the fact that in a Type 2 community there are more internal differences and dialects than in a Type 1 community is a definition and not an observation. The language in a Type 2 community that emerged from the contact between several Type 1 communities, must be some kind of koineised of standardised or selected variety from among the dialects.

When, however, there is no such variety, there is also no reason to speak of an encompassing Type 2 speech community. In that case there is only a collection of Type 1 communities. For instance, today there is no all-encompassing Quechua language which

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24 However, the traditional view that creoles emerge from an earlier pidgin by nativization has been challenged (cf. Arends 1989). Instead, creolization is considered as an ongoing process without sharp breaks, and without the necessity of an earlier pidgin.
is learned and used by all who speak Quechua in various ways. In that sense we do not speak of one, but of several Quechua speech communities.

My hypothesis is that complexity as defined in section 1.2, is more commonly found and retained in Type 1 communities than in Type 2 communities. When dimensions of processing favourable for an outsider dominate in the history of a speech community, in the longer term, the inflectional morphology will adapt to these processes. Dimensions of processing in turn depend on community type.

In section 2.4 I will elaborate upon what aspects of inflection might be considered complex from the outsider perspective. In the rest of this book I will show that we can actually trace the history of (Type 1 and Type 2) speech communities in the corresponding (complex and simple) inflectional morphologies.

The two bold containers in Figure 2.1 refer to two speech community types, with their varying processing type combinations. The upward arrows refer to the influence that the processing types have on the three dimensions of inflection.

### Figure 2.2 Inflection and language processing

#### 2.4 Inflectional complexity in language processing

What are the difficulties in the six kinds of language processing with respect to the dimensions of inflection - Economy, Transparency and Isomorphy? For each dimension I examine how it is appreciated in the six types of processing. The difficulties for perception, L2 acquisition and the communicative function constitute outsider complexity. The dimensions of production, L1 acquisition and the symbolic function on the other hand are essential for a language spoken in a Type 1 speech community.

In principle, the three inflectional dimensions should be considered from the various combinations of the six processing types. Production, for instance, should be considered both from the perspective of an L1 learner and an L2 learner, and both for the
communicative and the symbolic function. Therefore, I could potentially examine 24
types of processing in three dimensions of inflection, which makes 72 subsections. I will,
however, abstract away from these fine-grained distinctions. When discussing L1 and L2
acquisition, production and perception in the following sections, I assume that these take
place while language is used in the communicative function.

We do not know what the exact difficulties are with respect to the three inflectional
principles within all six dimensions. Studies in language production and perception are
often oriented towards modelling a speaker’s cognitive or linguistic apparatus, and less
towards the comparison between the ease of processing of different constructions. The
focus in acquisition studies is seldom comparative, especially in L2 acquisition studies.
Finally, data on what would count as easy or difficult in symbolic versus communicative
language use are rather scarce. These drawbacks are most clear in the dimension of
Isomorphy, which is a less central inflectional principle in European languages.
Therefore, the arguments and conclusions below are, unfortunately, partially based on a
priori reasoning and circumstantial evidence.

2.4.1 Economy

2.4.1.1 Production and perception

From an encoding point of view, inflectional notions like subject and object agreement
are relatively costly, because their expression presupposes planning ahead by a speaker.
For instance, if a VSO language has object agreement, all relevant properties of the
object have to be encoded at the start of the sentence. There is some evidence, at least
with respect to production by L1 learners’ of verb agreement in V-initial constructions in
Hebrew (cf. Berman 1985: 301), that such planning may indeed be more difficult. Other
notions, like aspect or tense, are less difficult to encode since they do not lay relations
between different parts of a sentence.

Phonetically, production of forms becomes faster and easier when information is
compressed in an assimilated or fused form, or when it is fully deleted. When we suppose
that a speaker wants to transmit as much information as possible with little effort, it is
expected that non-core notions (cf. Bybee’s 1985 hierarchy of categories and the
hierarchy of information density in 2.1.1) are the first to be omitted in language
production. Which categories are deleted in each individual instance depends, however,
also on the accidental phonetically “weak points” of an inflectional system. For instance,
in several dialects of Najdi Arabic (cf. section 4.3.2.2) the so-called ‘internal passive’ has
disappeared, due to its phonetic weakness, although from an informational point of view,
voice is a highly relevant notion. The way in which the internal passive disappeared -
first in the infrequent parts of the paradigm - is however, still guided by the hierarchies of
Relevance and informativity. Moreover, phonetic weakness is no prerequisite for a
category to disappear: the dual in Arabic was not phonetically weak, but nevertheless
disappeared in modern Arabic.

It costs the language user, both speaker and hearer, considerable effort to keep non-
informative notions in their lexicon and to use them appropriately, in comparison with
the ‘yield’ of these notions. Stemberger (1998: 433) confirms that from a production
point of view the obligatory expression of inflectional categories can be an obstacle for a
speaker, and, especially in non-frequent and irregular verbs inflectional affixes are
omitted in English. However, most problems in language production do not occur due to
the presence of inflectional categories themselves, but due to irregularities in their expression, like allomorphy (see section 2.4.2.1).

Although there is some motivation to omit inflectional categories, these categories are nevertheless rather robust in language history. That is, languages may have an abundance of inflectional, even fully redundant categories for thousands of years (see Carstairs-McCarthy 1999, and the discussion in section 8.1). In these cases speaker interests seem to rank lower than other interests like those of language use in the symbolic mode, or interests of the hearer to which I turn now.

Baayen et al. (1996, 1997) distinguish between lexical processing, i.e. direct processing of a word without previous analysis, and parsing, i.e. processing after earlier analysis of complex words. They argue that in processing of at least some inflected forms either one or the other route is taken, dependent on which route is the fastest in individual cases. One might conclude from this that inflected forms have advantages both over syntactic devices, which are processed only by parsing, and over lexical expressions, which are processed only by lexical processing. Baayen et al. (1997), however, confine this dual route possibility to ‘inherent’ inflection (e.g. tense but not agreement inflection), because lexical processing of inflected forms is only possible when the forms in a sense constitute a conceptual unit (see also Bybee 1985). Now, valency and voice form a conceptual unit with the verb. The inflectional expression of these latter categories may therefore be considered to be advantageous for hearers. Categories like tense and aspect lend themselves less clearly to conceptual fusion, while agreement does not merge conceptually with the verb; these can therefore not share this particular advantage of inflection. Unfortunately, research in perceptual processing has only been done with native speakers, and L2 learners may react differently (cf. section 2.4.1.2). This prevents firm conclusions about perception in general.

Baayen et al. (1996, 1997) did also not compare processing of inflection with processing of equivalent syntactic or prosodic devices. One could argue that for a hearer inflectional categories are difficult to comprehend, in comparison with syntactic devices. Inflection as a means to express notions like subject agreement, tense or aspect is less iconic and therefore less easy for a hearer than means - like word order or stress - that are more flexible and that can mirror topicality or prominence hierarchies. Finally, inflectional categories are prone to phonetic reduction and are often unstressed, which may also lead to perception problems. Even when these inflectional notions are redundant, and not essential to the meaning of the sentence, they may confront the hearer with noise that disturbs efficient parsing. On the other hand, phrasal and agreement inflectional categories that are redundant can be of help for the hearer, since it may help in decoding missed or forgotten parts of earlier utterances.

In conclusion, the sheer presence of inflection is neither a clear complication nor advantage for a hearer (cf. McQueen and Cutler 1998: 419). More derivation-like inflectional notions like voice, probably provide a little more advantage than agreement, and redundancy is not necessarily problematic for a hearer. From the perspective of the speaker, language would gain in efficiency when it would be without agreement, and possibly also without more inherent forms of inflection like tense and mood.

A speaker would be helped with shorter forms, and from his or her perspective we expect that through grammaticalisation, assimilation, and reduction, inflection would become more compact, finally leading to disappearance of inflection. These three phases: long
forms – short forms – no forms are increasingly optimal for a speaker, though not for a hearer. A hearer prefers either long forms, or no forms, but not condensed, compact short forms. This asymmetry leads to a paradox in language change as well: when a speech community changes from Type 1 to Type 2, it often first passes through a stage where the language becomes more complex (for an outsider). Only later is it rapidly simplified.

2.4.1.2 Child and adult learning

In studies reported in Slobin and Bever (1982) and Slobin (1985-1997), it is found that L1 learners acquire agreement morphology with the same ease and a little faster than other devices to express grammatical relations, like word order or prosody. The mere presence of inflectional morphology is not problematic at all for a first language learner. Within two or three months after beginning to speak children have already acquired the basics of inflection (cf. Clark 1998: 377). Data from Turkish show that when categories are expressed transparently, children before the age of two already master most if not all inflectional categories (Aksu-Koç and Slobin 1985: 845, cf. also Clancy 1985: 425 for evidence from Japanese). However, when the inflectional morphology displays much allomorphy and homonymy, as in Servo-Croatian, things are different.

Morphosyntactic categories that refer to unmarked values, e.g. 3SG.PRES, are acquired first. The order and speed of emergence of other categories depends on their place in what I call the Feature Hierarchy (see also sections 2.1.1 and 3.3.2 and Slobin 1992: 8), their frequency and their semantic distinctiveness, e.g., person distinctions in the more frequent singular are acquired before person distinctions in the plural. A general path of acquisition would be Aspect >> Tense >> Number >> Person >> Gender (cf. Berman 1985: 299). Grammatical gender in many languages is semantically opaque, and difficulties with its acquisition are expected (cf. Pinker 1984: 183). However, these are only relative difficulties: before the age of three children have usually worked out gender agreement (cf. Clark 1985: 706). Moreover, the difficulties are partly related to allomorphy and homonymy and not to the acquisition of the category itself (see section 2.4.2.2). When notions are infrequent and when they are also expressed in a non-transparent form, acquisition is most difficult. Omar (1973) found mistakes in the formation of dual number in Egyptian Arabic in children who were fifteen years old.

These findings match with theories from a UG perspective, according to which children have an innate capacity to learn language. At an early age, the mind/brain is mature enough to process a structural position, the so-called IP-node, in which inflectional categories find their place. The exact filling of this position with morphological material may take longer.

In the late 80s and 90s several studies showed that while L1 learners acquire inflectional notions quite easily and rapidly, L2 learners have more problems with inflection (Clahsen & Muysken 1996; Meisel 1997a). In areas like inflectional morphology, adults have clearly more learning difficulties than L1 learners. Therefore, they prefer to construct their L2 language with as little inflectional morphology as possible. Klein & Perdue (1997: 343) says:

“We have seen that adult language learners who, unlike children, do not end up by faithfully reproducing all the idiosyncrasies and oddities presented to them by their social environment, but organize their utterances and texts according to elementary principles of
their innate human language capacity, regularly develop a type of language, which is perfectly well-structured, highly efficient - and very simple.”

This simplicity of adult L2 language consists, among other things, in the lack of inflectional morphology. Researchers like Vainikka and Young-Scholten (1996) and Eubank (1993, 1996) explain these results from an UG perspective by proposing that the capacity to learn inflection is innate, but at a later age no longer accessible. Syntactic operations and morphological spell-out would become impaired and be ‘filled’ with L1. In this view, the Economy Principle would be more important in L2 than in L1 acquisition. According to other researchers, like Schwartz and Sprouse (1996) and Prévost and White (2000), learners would retain full access to the innate language acquisition device. Problems with inflectional morphology would be caused by impairments in more peripheral components of the language faculty, which would consist in the spell-out and mapping of syntactic categories with morphological material. These impairments would follow from communicative pressures or processing reasons (cf. Herschensohn 2001), that would prevent the L2 learner’s full competence from becoming visible. In this latter view Economy in itself would not be a driving force in L2 acquisition. Instead, Economy would only be triggered when the syntax-morphology interface would in some sense be non-transparent. However, this remains a disputed question; for instance, Franceschina (2001) presents data from an L2 learner of Spanish whose learning problems seem unrelated to spell-out, but deal primarily with the handling of syntactic categories themselves.

Even when problems of L2 acquisition of categories sometimes have more to do with spell-out than with syntax itself, Economy seems to be a more important guiding principle than in L1 acquisition, because of syntactic impairment, cognitive changes, changed attitudes with respect to the social environment, or communicative pressure. L2 acquisition of inflectional morphology may be more hampered than other domains, since transfer is more difficult in morphology (cf. MacWhinney 2002: 49).

Instead of inflectional morphology, adults preferably rely on word order, prosody and lexical paraphrases to express the corresponding features. In addition to the general avoidance of inflection, there is evidence suggesting that in the case that adults acquire inflection, they do not acquire all inflectional categories as quickly and orderly as L1 learners do (cf. Meisel 1997a). According to studies like Pienemann (1994), the order of acquisition of inflectional categories is determined by the kind of inflection the categories belong to. Pienemann distinguishes three kinds of inflection: lexical inflection, like tense and aspect, phrasal inflection, like inflection for gender within the noun phrase, and inter-phrasal inflection, like subject agreement. Pienemann (1994) and later studies like Mansouri (2000) show that lexical inflection is acquired first, phrasal agreement next, and at last inter-phrasal agreement would be acquired.

2.4.1.3 Communicative and symbolic function

The advantages of inflectional morphology are different when a language is used in the communicative function, than when it is used symbolically. Now I turn to the advantages and disadvantages of inflection for the symbolic function.

Inflectional categories can provide information about participants involved in an event, about the roles of these participants, and about the location of the event in terms of space, time, and modality. When such information is given by means of inflectional affixes, then
other constructions can be employed for other purposes. The backgrounding and grammaticalisation of tense markers, for instance, enables speakers to use lexical time reference for more subtle modifications. In addition, the setting of syntactic relations between agents and patients by means of inflectional affixes allows a language to have free word order, which can be used for pragmatic nuances.

Labov (1990) elaborates on these ideas, and argues that the transition from a pidgin language, where tense, aspect and mood are expressed lexically, to a creole language, where these categories are expressed as grammatical particles, enhances the stylistic potential of the language. In Labov's view grammaticalisation and inflection provide more subtle means for foreground and background information. When we consider foregrounding and backgrounding as non-informational, these devices are superfluous from a strictly informational perspective. They only demand more computation, while there is no gain in the efficient processing of information. In a more encompassing pragmatic account, however, the potential of the language becomes larger. This enlargement lies in the development of different ways of saying the same thing. Therefore, it improves the stylistic repertoire and the symbolic capacity of a language, though not its communicative potential. Labov (1990: 45) says: "If we want to emphasize the temporal location of an action, we should be able to do so, but if we want to let this slide into the background, we must have means of packing away our grammatical tools so they will not interfere with some other focus."

Mithun (1989) expresses a similar idea when discussing the attrited polysynthetic language Oklahoma Cayuga vs. the full variety Ontario Cayuga. Although the Oklahoma speakers have no informational deficiencies, the stylistic possibilities of their variety are reduced. Mithun (1989: 249, 257) says: "Incorporation can also be used as a stylistic device in discourse, as a means of backgrounding established or incidental information...A characteristic of especially admired speakers is the profusion of incorporation in their speech for stylistic effects."

Sherzer (1983) discusses structure and use of Kuna, a Chibchan language spoken in Panama. In the Kuna speech community, language fulfills a strongly symbolic function, and there are four different language varieties for roughly four kinds of situations. In one of these varieties an extra mood affix is used, and there are also affixes which serve as markers of the linguistic varieties (cf. Sherzer 1983: 40). This shows that extra categories may develop in languages where styles, genres and verbal art are important. The advantages of inflection and morphologisation in general do not imply that languages without inflection do not have stylistic nuances. It only means that inflection is one of the possible means of extending language for stylistic purposes. Other means common among languages with little inflection like English, Lahu and Sranan, are the use of large sets of discourse particles, the use of paralinguistic means like intonation, and a rich repertoire of syntactic constructions and idiomatic expressions.

When the symbolic function of a particular language is mainly to stress identity, and less to foster stylistic and poetic possibilities, language does not necessarily tend towards

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25 Although a speaker would be helped with shorter forms, a hearer would be less satisfied (cf. section 2.5.1.1).

26 In these three examples the three aspects of the symbolic function discussed in section 2.2.3 - identity shaping, attitudinal and poetic - go hand in hand.
Inflectional complexity in language processing

more or less categories. In that case the preferred (non)-change depends on the accidental language norms of the speech community. It may seem that loss of categories is often contravened by institutes like language academies, but an increase of categories is sometimes also contravened. For instance, in French sub-standard constructions the subject pronoun tends to become part of the verbal complex. This is, however, not generally approved upon; cf. the following examples:

Standard French:

(6) Je vois le livre.
   I see the book
   ‘I see the book.’

Sub-standard French:

(7) Moi je-vois le livre.
   I see.sg the book
   ‘I see the book.’

As noted in section 2.3, Perkins (1992) examined the relations between complexity of culture and the number of deictic distinctions. As far as less complex cultures correspond to my Type 1 speech communities, the symbolic function of language indeed appears to correlate with a higher number of grammaticalised deictic distinctions. In other words, when the symbolic function prevails, the Economy Principle plays less of a role.

In conclusion, elaboration for stylistic and poetic reasons may promote an increase of inflectional categories, and perhaps a wealth of categories is more likely to emerge in a type of culture and society where the symbolic mode is more prevalent. Preservation of group identity may prevent loss of categories, but this is not intrinsic to the preservation process itself.

2.4.1.4 Summary and conclusion

An L1 learner has no problems with inflectional categories, and even prefers them above other devices. A symbolic user may exploit inflectional categories for reasons of verbal culture or identity shaping. The non-redundant categories lend themselves especially to expand the stylistic repertoire (cf. section 2.1.1 for an account of redundancy). A speaker, focused on communication, dislikes inflectional categories, especially when these are redundant or demand much planning ahead. The more relevant an inflectional category is to the verb, the more speakers tend to express it with the verb.

L2 learners dislike inflectional categories, especially when they demand considerable computation. Hearers have less problems with a higher number of inflectional categories, especially when they are ‘inherent categories’, like tense and mood or when they are redundant markers.

Table 2.2 on next page summarises what inflectional categories are preferred and avoided by five kinds of language users. The sixth kind of language user, the ‘communicative user’ I have omitted from this table, because his preferences and avoidances correspond mainly to those of the hearer, the L2 learner, and to a smaller extent, the speaker and the L1 learner. Communicative language use may be characterised as the sheer absence of symbolic language use (cf. section 2.2.3).
In a Type 1 community, the speaker, the L1 learner, and symbolic language use occupy a central position, while the hearer, the L2 learner, and communicative language use is more important in a Type 2 community. This implies that inflectional categories are preferred in Type 1 communities, and that a Type 2 community will strive more towards Economy than a Type 1 community. In both types, roughly the same hierarchy influences what categories are preferred. Agreement features are not favoured, especially when they are redundant to both speakers and L2 learners. Non-redundant agreement features and local categories like tense and aspect are less problematic for the different groups of language users.

2.4.2 Transparency

The Transparency Principle refers to a one-to-one relation between meaning and form. In this section, I will discuss whether and how transparency and the four kinds of deviation from it: fusion, allomorphy, fission, and homonymy, yield difficulties in different kinds of language use.

2.4.2.1 Production and perception

A speaker who has full command of a language, prefers to be as efficient as possible. This implies that she will make the phonological form of her words smooth and short, and she will tend to pack different meanings into one form, and allow for assimilation to make pronunciation as effortless as possible. In other words, she will prefer fusion and assimilations that may lead to phonologically conditioned allomorphy. Trudgill (1992, 1996, 1997) supports the claim that in situations where the preferences of the speaker are more important, fast speech phenomena tend to become part of the linguistic repertoire (cf. also Dressler 1984).

Lexically and morphologically conditioned allomorphy do not provide advantages for the speaker. There is evidence that these kinds of allomorphy make production a little more complicated. Stemberger, (1998: 430) reports that errors are ‘commonly’ made in the past tense of English verbs. English past tense displays extensive lexically and morphologically conditioned allomorphy, and irregular verbs are often replaced by regular forms, and - though less frequently - by other irregular forms, for instance choosed instead of chose, and brung instead of brought.

Structural homonymy is advantageous, because a speaker does not have to worry about the expression of at least one of the categories in question. Accidental homonymy does not provide any advantages, except when it co-occurs with allomorphy or fusion. Fission essentially hinders production somewhat. A speaker wants to be as clear and short as possible, and, when a meaning must be expressed twice, this means a redundancy for the speaker.

<table>
<thead>
<tr>
<th>Table 2.2 Preferences for Economy in various processing dimensions</th>
</tr>
</thead>
<tbody>
<tr>
<td>+ = preference, 0 = neutral, and - and -- = degrees of difficulty.</td>
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<tr>
<td></td>
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<tr>
<td></td>
</tr>
<tr>
<td>---------------------------------------------------------------</td>
</tr>
<tr>
<td>Redundant agreement</td>
</tr>
<tr>
<td>Non-redundant agreement</td>
</tr>
<tr>
<td>Aspect/Tense/Mood</td>
</tr>
<tr>
<td>Voice</td>
</tr>
</tbody>
</table>

In a Type 1 community, the speaker, the L1 learner, and symbolic language use occupy a central position, while the hearer, the L2 learner, and communicative language use is more important in a Type 2 community. This implies that inflectional categories are preferred in Type 1 communities, and that a Type 2 community will strive more towards Economy than a Type 1 community. In both types, roughly the same hierarchy influences what categories are preferred. Agreement features are not favoured, especially when they are redundant to both speakers and L2 learners. Non-redundant agreement features and local categories like tense and aspect are less problematic for the different groups of language users.
There are no indications that fused affixes are more difficult to process for a hearer than non-fused affixes. Apart from the difficulty of having a higher number of affixes to store, fusion seems to be unproblematic. It could be argued that fused forms force parallel processing, that is, associating one form to several meanings at the same time. There is, however, no evidence that this is more difficult than the consecutive processing of separate affixes.

Since an abundance of semantic categories is neither more complicated nor more easy for a hearer, structural homonymy is not necessarily difficult or easy either, although the fewer different forms, that is, the more structural homonymy, the smaller the lexicon. Accidental homonymy, however, is a burden for the hearer. Baaijen et al. (1997) show that accidentally homonymic affixes in Dutch are processed with significant delay.

Fission and other kinds of redundancy are profitable for a hearer. Information can be more accurately and completely processed when it is expressed more than once. Joseph (1983) notes that redundancy of person and tense markers in languages of the Balkan especially occurs in situations where the information transmission has been non-optimal, that is, in contact with non-native speakers.

McQueen and Cutler (1998: 414) remark: “Factors, such as semantic transparency, which apply to all classes, appear to determine the strength and nature of connectivity between morphemes.” This explains the finding of Baayen et al. (1997) above that homonymy increases reaction times, since an homonymic affix is not semantically transparent for a hearer. It says nothing about fusion and fission with respect to perception and recognition, since for a hearer fused and fissioned affixes may directly correspond to a uniform meaning. Allomorphy, however, weakens the ‘strength of connectivity between morphemes’. In allomorphy, instead of one invariant form, several forms are used for the same meaning. Irregular forms like the strong past tense in English are less connected to uninflected forms. They are found to display less priming effects, that is, their speed of recognition is not increased when they appear shortly after the uninflected counterpart (cf. McQueen and Cutler 1998: 418).

However, not all kinds of allomorphy are a burden to the hearer. When the allomorphs are phonologically related, the allomorphy does not impair the connectivity between forms in the lexicon. For example, the allomorphic relation between elusive and elude does not impair the priming relation (McQueen and Cutler 1998: 413). We might argue that allomorphy could also be helpful: allomorphic forms like am, are, is, are more salient than when these forms would be more regular. However, there is no empirical confirmation for this supposition.

In conclusion, fusion and phonologically conditioned allomorphy and structural homonymy are profitable in language production, and not difficult for perception. Speakers and hearers have opposite interests with respect to fission: a hearer likes redundancy, while a speaker dislikes it. A speaker has no problems with accidental homonymy, but this kind of homonymy is difficult to interpret. Most difficult of all is morphologically and lexically conditioned allomorphy. These are difficult for both production and perception.

2.4.2.2 Child and adult learning

When comparing the acquisition of categories that are fused, in Servo-Kroatian, with notions that are not fused in Turkish, Slobin & Bever (1982: 252) found that L1 learners
learn the non-fused system more easily. Clark (1998: 377) also remarks: “…the best predictor of relative order [of acquisition, WK] is semantic complexity, with morphemes that are cumulatively more complex being acquired later. A morpheme marking x is acquired before one that marks x + y, and so on.”

However, the difficulties for L1 learners partly reside in the higher rate of other deviations from Transparency in fusional systems, like allomorphy and homonymy. Smoczynska (1985) compared the acquisition of the inflectional fusional morphology of Polish and Russian. These are closely related languages, but they differ in that Russian has more (accidentally) homonymic affixes than Polish. Smoczynska found that Polish inflectional affixes are acquired more easily than Russian inflections, and she explained this by the higher rate of homonymy that would be a hindering factor for Russian children in discerning the correct gender, case, number and declension class of a noun. This suggests that it is not fusion alone which is problematic for children, and Pinker’s (1984) claim that fusion needs a different and more cumbersome kind of processing because of the problems children have with it, seems unwarranted.

Homonymic forms in case-marking, definite articles etc. are also reported to be troubling for L1 acquisition in German (Mills 1985: 224, 245). Although the definite article in German itself is quickly learned, its paradigm with its four cases, two numbers, three genders but only six different forms is learned slowly. In the development of the Scandinavian languages (cf. section 5.6) homonymy also played a role. In all these cases it is accidental homonymy that decelerates acquisition. Structural homonymy is not reported to be problematic for L1 learners.

There is some evidence that fission is also problematic in L1 acquisition: according to Mikes (1967) and Slobin & Bever (1982), locative relations are more difficult when they are expressed twice, once by a preposition and once by a case affix. In some verbs in Scandinavian the expression of past tense and of plural is done by both affixation and stem vowel modification. As far as these verbs can be considered to display fission, their slow acquisition also indicates the difficulty of fission for L1 learners (Plunkett and Strömqvist 1992: 477). Furthermore, there is some evidence that circumfixes are more difficult than continuous affixes (cf. Mills 1985: 168 for German and Clancy 1985: 506 for Japanese evidence), and that infixes are more difficult than other affixes (Berman 1985: 339).

Allomorphy also inhibits L1 acquisition. When an inflectional affix has an invariable shape and clear meaning it is easily mastered, but when it has several allomorphs, only the most frequent affix is learned quickly. Other allomorphs may take much longer; Omar (1973) found that 12-year old children still make mistakes in the highly irregular plural forms in Egyptian Arabic. Children initially acquire allomorphy correctly, when they learn by plain memory. In the next phase, when children discover rules, they make mistakes in the exceptions to these rules, and only in a last phase they learn these exceptions (cf. Fortescue & Lennert Olsen 1992: 146 for evidence from Greenlandic; Mills 1985: 156 for German evidence).

Children first use semantic and phonological strategies to process allomorphic variation. Phonologically conditioned allomorphy is acquired relatively early (see Berman 1985: 319 for evidence from Hebrew; Clark 1985: 706, 721 for evidence from French; Demuth 1992: 597 for Sesotho evidence). Only in the last instance, did children work out the intricacies of

For L2 learning there are less data. There are no comparative studies between the order and speed of acquisition of languages that differ on the dimension of Transparency. UG-inspired studies in L2 acquisition (see 2.4.1.2) point out that non-transparencies between categories and form present serious problems for L2 learners. Although the problems L2 learners experience are more or less the same in superficial outlook as L1 learners, they are much more serious, and remain during a much longer period. As for L1 learners, accidental homonymy and lexical allomorphy confuse the learner. L2 acquisition is different from L1 acquisition in showing greater variation between L2 learners. Some L2 learners may never grasp certain forms, and fossilise.

In conclusion, for a L1 learner accidental homonymy and lexical and morphological allomorphy are most troublesome. Fission and phonological allomorphy are probably also difficult, while fusion presents no problems. These problems are only relative in comparison with L2 learners, whose problems are much more serious, with all deviations from Transparency. In contrast with L1 learners, some difficult constructions are either never learned, or only learned very slowly, by some L2 learners.

2.4.2.3 Communicative and symbolic function

Language users may incline toward non-transparency for stylistic reasons. Elaborations and mixings of different styles may result in the grammaticalisation of previously irrelevant distinctions. For instance, before French was introduced as a prestige language in England, affixes had no allomorphs conditioned by a [+/-native] restriction. However, when French words invaded the vocabulary, several affixes, like [-ation], became sensitive to the native/non-native distinction. An elaboration of styles implies diversification and this diversity may result from a diversity of allomorphs.

Allomorphy may also be a useful device in cultivated poetic language. An essential part of language cultivation and poetry consists of the elaboration of the purely formal level of language, detached from its referential force. Jakobson (1960: 356) says: “This function, by promoting the palpability of signs, deepens the fundamental dichotomy of signs and objects.” This ‘deepening’ boils down to deviating from the Transparency Principle, and it promotes phonologically conditioned allomorphy as a means to be more eloquent. This function may also put pressure on the language user to stretch her language, and to conflate categories into one form (fusion and homonymy), or to spread one category over several forms (fission), all depending on demands that arise from the particular aesthetics of the language and not from communicative intentions.

When one tries to maintain and appreciate the older cultural forms of a language - independent of communicative considerations - it implies a conservative language policy. Such a conservative attitude may either retain or prevent complexities. However, at least in oral speech communities some language devices are better suited than others to retain a link with the past. In oral communities all linguistic knowledge that is considered worth preserving, needs to be memorised by heart, since there is no external device to preserve meanings. For smoother memorisation devices like repetition, rhyme and redundancy are suited best (cf. Ong 1982: 37ff.). On the morphological level redundancy and repetition correspond to fission. Further we hypothesise that allomorphy also has the effect that words and stretches of discourse are more easily memorised. Fortescue (1992: 246) says:
“Once a full set of such allomorphs is mastered, the child actually possesses a more structurally ramified and deeply rooted memory trace for that morpheme than if it had just the one form that behaved in a strictly agglutinative manner” (cf. also Bybee 1985: 57). The Kuna speech community (cf. Sherzer 1983) is an example of an oral community, where language use fulfils an important symbolic function. In more formal ritual styles of Kuna, in which chants are sung and memorised, different speech varieties are used. These are characterised by allomorphic variants of stems and affixes, which result in words usually longer than in colloquial speech. The more formal the level is, the more redundancy and the more affixes per word. Sherzer (1983: 40) remarks: “…ritual speech tends to occur in full, complete sentences rather than in the more abbreviated sentences characteristic of colloquial speech. This is true of formal speech in many societies.”

In conclusion, in communities where the symbolic functions of language predominate, deviations from Transparency like allomorphy, especially phonologically conditioned allomorphy, may flourish, and in addition, especially in oral speech communities, fission may develop.

### 2.4.2.4 Summary and conclusion

A speaker prefers fusion, structural homonymy, and easy articulation, possibly leading to phonologically conditioned allomorphy, while avoiding fission, and non-phonological allomorphy. An L1 learner has difficulties with accidental homonymy and lexical and morphological allomorphy, and to a somewhat smaller extent also with fission and phonological allomorphy. Fusion is hardly problematic for L1 learners, while structural homonymy is even favoured. In symbolic language use fission and allomorphy, especially phonological allomorphy, are favoured.

#### Table 2.3 Preferences for Transparency in various processing dimensions

<table>
<thead>
<tr>
<th></th>
<th>Speaker</th>
<th>L1 learner</th>
<th>Symbolic use</th>
<th>Hearer</th>
<th>L2 learner</th>
</tr>
</thead>
<tbody>
<tr>
<td>Morphological allomorphy</td>
<td>-</td>
<td>--</td>
<td>+</td>
<td>-</td>
<td>---</td>
</tr>
<tr>
<td>Accidental homonymy</td>
<td>0</td>
<td>--</td>
<td>0</td>
<td>--</td>
<td>---</td>
</tr>
<tr>
<td>Fission</td>
<td>-</td>
<td>-</td>
<td>+</td>
<td>+</td>
<td>--</td>
</tr>
<tr>
<td>Fusion</td>
<td>+</td>
<td>0</td>
<td>0</td>
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<td>-</td>
</tr>
<tr>
<td>Phonological allomorphy</td>
<td>+</td>
<td>-</td>
<td>+</td>
<td>0</td>
<td>--</td>
</tr>
<tr>
<td>Structural homonymy</td>
<td>+</td>
<td>+</td>
<td>0</td>
<td>0</td>
<td>+</td>
</tr>
</tbody>
</table>

A hearer has no problems with fission, but dislikes accidental homonymy and morphological allomorphy. L2 learners have the same problems with deviations from Transparency as L1 learners, but on a more serious level. Table 2.3 summarises these findings (cf. section 2.4.1.4).

In a Type 1 speech community the speaker, the L1 learner, and non-communicative language use play the dominant role, while in a Type 2 community the hearer, the L2 learner, and communicative use are of the utmost importance. Deviations from Transparency have therefore the following status in the two community types: fusion, structural homonymy, and phonologically conditioned allomorphy cause no problems in Type 1 communities. Other kinds of allomorphy and accidental homonymy are disliked in both types of community, but especially in Type 2 communities. Fission is preferred in both
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communities in some dimensions and disliked in others. This implies that all deviations from Transparency, except perhaps fission, are more problematic in Type 2 communities than in Type 1 communities. The order of preference of transparency deviations for both community types is:

Morphologically and lexically conditioned allomorphy // Accidental homonymy >> Fission >> Fusion // Phonologically conditioned allomorphy >> Structural homonymy.

2.4.3 Isomorphy

Among the three inflectional dimensions the data on the advantages and disadvantages of Isomorphy, especially with respect to language production and perception, are most scarce. Thus some of the remarks must remain speculative.

2.4.3.1 Production and perception

Theoretically, it should be easier to speak when information that somehow ‘belongs together’, that is, information that forms a unity of meaning, is also produced together. In that case the grouping of elements on the conceptual level does not need to be changed on the expressive levels. This idea is absorbed in the Isomorphy Principle, which I will assume to reflect a speaker preference. However, research in language production has not shown the occurrence of many errors in affix ordering. Stemberger (1998: 434) remarks: “Affixes can themselves be misordered; anticipated or perseverated, either being added to a word or replacing a different affix, being exchanged with another affix, or simply shifting so as to appear on the wrong word; these are rare but do exist.” Furthermore, the examples Stemberger gives are not cases of errors in which the speaker gives preference to the ideal Isomorphy. This lack of results from speech production research may be due to the fact that most research in language production is in English and, affix order in English plays only a minor role. Perhaps research on production of agglutinative morphology like Quechua, Swahili or Turkish would give more insights into the importance of Isomorphy for speakers. There is at least some evidence that affix reordering plays a larger role in agglutinative languages (cf. section 6.2.3 ff.) because of the greater separability of affixes in these languages.

Violations of Isomorphy because of inconsistent order may be more difficult to produce than violations because of a marked affix order. In the former case, for each word it has to be computed again which order is the right one, while in the latter case the order may be marked, but at least it functions as a template for all words.

For language perception there is a similar argument. For hearers it is easier to process information which is ordered neatly and which follows the Principle of Isomorphy. Unfortunately there is no research in reaction times for different affix orderings. Theoretically, however, from a perceptual point of view, inconsistent ordering of affixes might provide more problems for a hearer than marked though consistent ordering.

2.4.3.2 Child and adult learning

Studies in L1 acquisition show that the ordering of affixes is hardly a problem for child acquisition. Dasinger (1997: 34) remarks: “Finnish and Hungarian children alike almost invariably maintain the correct order of bound morphemes in their inflected productions.” This is corroborated by Aksu-Koç & Slobin (1985: 855) for L1 acquisition of Turkish. While Finnish and Turkish may be examples where the affixes appear in an
Complexity in verbal inflection

order complying with Isomorphy, the case of Warlpiri shows that inconsistent orders are also easily acquired by children (cf. Bavin 1992: 314, 349). There are no cases in the literature where children show dramatic problems with either marked or inconsistent orderings of affixes.

Unfortunately there are no data on the problems of L2 acquisition with respect to ‘deviant’ affix orderings as in Warlpiri or Quechua, and therefore we can only speculate on what L2 learners would find difficult. Inasmuch as L2 learners have no access to the innate computational system, we expect that all orderings in L2 that either deviate from their L1 order, or deviate from orderings expected on the basis of general cognitive learning principles, are relatively difficult. Orderings that are both non-Isomorphic and inconsistent may present most problems. L2 learners probably have more problems with deviant orders than L1 learners.

2.4.3.3 Communicative and symbolic function

As far as an increase in possible affix orders also increases the resources for variation in style, it may be argued that various affix orderings in a language could enhance the stylistic repertoire. In addition, when considerations of pure form take over from considerations of Isomorphy, deviations are tolerated more easily. This argument however, can be given for all deviations from any linguistic principle and is not unique to Isomorphy. There seems to be no other specific reason why deviations from Isomorphy would facilitate the symbolic function in any way.

2.4.3.4 Conclusion

Speakers and L1 learners might have a slight preference for Isomorphy, while in non-communicative language use deviations from Isomorphy are more easily tolerated. The hearer and the L2 learner may have a preference for Isomorphy (cf. Table 2.4).

Table 2.4 Preferences for Isomorphy in various processing dimensions
+ =preference, 0 = neutral and - = difficulty.

<table>
<thead>
<tr>
<th></th>
<th>Speaker</th>
<th>L1 learner</th>
<th>Symbolic use</th>
<th>Hearer</th>
<th>L2 learner</th>
</tr>
</thead>
<tbody>
<tr>
<td>Isomorphy</td>
<td>+</td>
<td>0</td>
<td>0</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Marked affix order</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Inconsistent affix order</td>
<td>-</td>
<td>0</td>
<td>0</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

Type 2 communities are only slightly more inclined to Isomorphy than Type 1 communities. They both allow deviations from the preferred order fairly easily.

2.4.4 Other principles

2.4.4.1 Animacy Principle

For speakers the animacy principle may be slightly more difficult than for hearers, since extra possibly irrelevant information needs to be processed, whereas hearers may profit from this extra information in assigning correct references. Because of its semantic naturalness, it is probably an easy principle for both L1 and L2 learners, which is confirmed, at least for L1 acquisition by data from Georgian (Imeadze & Tuite 1992: 94). The ease of applying the animacy hierarchy in language use, however, may be less for L2 learners when this principle is absent in their L1, or when the category boundaries
in the hierarchy are different. As far as the animacy hierarchy expresses cultural values, e.g., the high position of deities on the hierarchy in Burmese, it may be valued more highly in the symbolic use of language than in communicative use. It is not clear whether the animacy principle is a characteristic for Type 1 or Type 2 communities.

2.4.4.2 Suffix Principle
McQueen and Cutler (1998) report that suffixes are easier to perceive than prefixes. Furthermore, L1 learners also have a preference for suffixes above prefixes, which are in turn preferred above infixes (cf. Berman 1985: 339 for Hebrew; Clark 1998). Indeed, typological research has found that suffixes are used most frequently.

2.4.4.3 Phonological Principles
Since there are a whole array of phonological principles it is difficult to make general claims about them. Some of the phonological principles are more closely related to articulation, others to perception. In addition, not all phonological principles can be reduced to characteristics of the speech mechanism, and a third group of principles may be called aesthetic principles. According to Tesar & Smolensky (1997), (cf. also Levelt & Van de Vijver 1998) children start with a grammar that prefers the speaker-oriented above the hearer-oriented principles. In L2 acquisition things are probably different. An L2 learner has already a balance between these two types of principles from her own language, and during acquisition she will be more communication-oriented than a child learner, i.e. she will prefer hearer-oriented constraints. The articulation-related principles concern the ‘surface form’ of a message, while the perception-centered principles concern the relation between the underlying meaning and the phonetic form. An important feature of symbolic language use is its disregard for transparency between form and meaning, and its focussing on the aesthetic qualities of the form.

The three perspectives on language use lead to the same conclusion: in Type 1 communities articulation-related principles like preference for assimilation and vowel harmony are preferred, while in L2 communities perception-centered principles like ‘be salient’ play an important role. In addition, aesthetic principles like preference for binarity, e.g. in metrical structure, are also more likely to pertain to Type 1 communities.

2.4.4.4 Morphological Principles
Language-specific templates and paradigmatic constraints are not problematic for perception and production. In production a template may provide the structure in which a speaker can shape her information, without further computation of affix position or affix order. For perception strict templates may give the hearer a clear frame of reference for further interpretation. For both L1 and L2 learners templates do not correspond to any universal principles and are therefore more difficult to acquire than the three morphological principles above. However, it is unknown whether the expression of e.g. an imperfective aspectual meaning with the help of a template, as in Arabic (cf. section 4.2.1.2), is more difficult than the expression with a distinct imperfective affix. Morphological templates have no specific advantages for symbolic language use. Because of the lack of data this remains speculative, however.
2.5 Conclusion

The discussion in this chapter is summarised in Table 2.5, which combines Tables 2.2, 2.3 and 2.4.

Table 2.5 Preferences for inflectional phenomena in various processing dimensions

+ = preference, 0 = neutral and - , --, and --- = degrees of difficulty.

<table>
<thead>
<tr>
<th>Phenomena</th>
<th>Speaker</th>
<th>L1 learner</th>
<th>Symbolic use</th>
<th>Hearer</th>
<th>L2 learner</th>
</tr>
</thead>
<tbody>
<tr>
<td>Redundant agreement</td>
<td>--</td>
<td>+</td>
<td>0</td>
<td>+</td>
<td>--</td>
</tr>
<tr>
<td>Non-redundant agreement</td>
<td>--</td>
<td>+</td>
<td>+</td>
<td>-</td>
<td>--</td>
</tr>
<tr>
<td>Aspect/Tense/Mood</td>
<td>-</td>
<td>+</td>
<td>+</td>
<td>0</td>
<td>-</td>
</tr>
<tr>
<td>Voice</td>
<td>0</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>-</td>
</tr>
<tr>
<td>Morphological allomorphy</td>
<td>-</td>
<td>--</td>
<td>+</td>
<td>-</td>
<td>---</td>
</tr>
<tr>
<td>Accidental homonymy</td>
<td>0</td>
<td>--</td>
<td>0</td>
<td>--</td>
<td>---</td>
</tr>
<tr>
<td>Fission</td>
<td>-</td>
<td>-</td>
<td>+</td>
<td>+</td>
<td>--</td>
</tr>
<tr>
<td>Fusion</td>
<td>+</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>-</td>
</tr>
<tr>
<td>Phonological allomorphy</td>
<td>+</td>
<td>-</td>
<td>+</td>
<td>0</td>
<td>--</td>
</tr>
<tr>
<td>Structural homonymy</td>
<td>+</td>
<td>+</td>
<td>0</td>
<td>0</td>
<td>+</td>
</tr>
<tr>
<td>Isomorphy</td>
<td>+</td>
<td>0</td>
<td>0</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Marked affix order</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Inconsistent affix order</td>
<td>-</td>
<td>0</td>
<td>0</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

In a Type 1 community speaker preferences, L1 learning and symbolic language use are more important. In a Type 2 community hearer preferences and L2 learning are more important. When examining the preferences of each community type as a whole we must compare the relative weight of each processing dimension. However, we do not know which processing types are most important. Should they be assigned equal weight? For example, does the symbolic elaboration of a language in a Type 1 community have as much influence as speaker preferences?

A goal of future research could be to examine how a more balanced comprehension of Type 1 and Type 2 preferences can be made. Here I will hypothesise that all processing types are equally important. Under this assumption, we arrive at Table 2.6. In the columns under Type 1 and Type 2 I have added the values of respectively speaker, L1 learner, symbolic use, and hearer and L2 learning. I assume that a ‘minus’ and a ‘plus’ counterbalance each other. In the column under ‘difference’ (diff) I have compared the values of Type 1 and Type 2 (Type 1 minus Type 2).

When we look at the columns under ‘Type 1’ and ‘Type 2’ in Table 2.6 we can infer the following conclusions:

I. Phenomena **positively** (non-zero) evaluated across the board are: structural homonymy and isomorphy.

II. **Negatively** (non-zero) evaluated everywhere are: redundant agreement, morphological allomorphy, accidental homonymy, fission, and inconsistent affix order.
III. Phenomena that are evaluated in the opposite direction (non-zero) are: aspect/tense/mood, fusion and phonological allomorphy, which are appreciated in Type 1 communities but disliked in Type 2.

IV. The other phenomena are evaluated as neutral (zero) in one of the types: non-redundant agreement, voice, and marked affix order.

V. Phenomena that are negatively evaluated in a Type 2 community are called complex in my definition.

Table 2.6 Hypothetical representation of preferences for inflectional phenomena
+ and ++ = degrees of preference, 0 = neutral and -, --, ---, etc. = degrees of difficulty.

<table>
<thead>
<tr>
<th>Phenomenon</th>
<th>Type 1</th>
<th>Type 2</th>
<th>difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Redundant agreement</td>
<td>-</td>
<td>-</td>
<td>0</td>
</tr>
<tr>
<td>Non-redundant Agreement</td>
<td>0</td>
<td>---</td>
<td>3</td>
</tr>
<tr>
<td>Aspect/Tense/Mood</td>
<td>+</td>
<td>-</td>
<td>2</td>
</tr>
<tr>
<td>Voice</td>
<td>++</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>Morphological allomorphy</td>
<td>--</td>
<td>----</td>
<td>2</td>
</tr>
<tr>
<td>Accidental homonymy</td>
<td>--</td>
<td>------</td>
<td>3</td>
</tr>
<tr>
<td>Fission</td>
<td>-</td>
<td>-</td>
<td>0</td>
</tr>
<tr>
<td>Fusion</td>
<td>+</td>
<td>-</td>
<td>2</td>
</tr>
<tr>
<td>Phonological allomorphy</td>
<td>+</td>
<td>--</td>
<td>3</td>
</tr>
<tr>
<td>Structural homonymy</td>
<td>++</td>
<td>+</td>
<td>1</td>
</tr>
<tr>
<td>Isomorphy</td>
<td>+</td>
<td>++</td>
<td>-1</td>
</tr>
<tr>
<td>Marked affix order</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Inconsistent affix order</td>
<td>-</td>
<td>--</td>
<td>1</td>
</tr>
</tbody>
</table>

We expect that phenomena that are positively evaluated everywhere, are also relatively common and stable across languages, while phenomena that are evaluated negatively occur only sporadically and are more unstable. Indeed, accidental homonymy is often replaced by more motivated - structural - homonymy, cf. the case of Scandinavian in Chapter 5 and Carstairs-McCarthy 1987). Isomorphy is also frequent and stable. In fact, it is often assumed to be one of the possibly even innate principles of language structure (cf. Baker 1985 and section 2.1.3.1). Morphological allomorphy tends to be among the first phenomena that disappear under language change (cf. Dimmendaal 1987 for a case where morphologically conditioned allomorphy is replaced by phonologically and semantically conditioned allomorphy).

Some might raise the objection that in spite of negative evaluations some phenomena like redundant agreement and fission are still remarkably robust. This could be explained in several ways: 1) The assessments of these phenomena in the various processing types may not have been accurate enough, 2) The weightings of processing types may be wrong. Indeed, if we let L1 learning have a greater share in the build-up of Type 1, redundant agreement would not be evaluated negatively, 3) There may be a trade-off with other parts of the grammar: for example, fission may be induced by the lexicon (cf. the case of Arabic in Chapter 4, and Noyer 1992), or by the phonological module.
When we compare the preferences in Type 1 and Type 2 we arrive at the column under ‘difference’ in Table 2.6. When the difference between the rankings in the two community types is high, we expect such phenomena to be disappearing when a community changes from a Type 1 into a Type 2 speech community. The phenomena of which the difference is highest, are (cf. the last column of Table 2.6):

- Phonological allomorphy (3)
- Agreement (3)
- Accidental homonymy (3)
- Morphological allomorphy (2)
- Fusion (2)
- Aspect/Tense/Mood (2)
- Voice (2)

When we take both the differences in preferences between the two community types into account, and also the absolute preferences, we may draw the following predictions for languages that change from being spoken in a Type 1 to a Type 2 community:

**Economy**:
- Agreement will be replaced by other ways of expressing syntactic relations, although relics of agreement may linger on when these other means are already present.
- Other inflectional categories, especially tense, aspect and mood, are also under pressure to disappear, though less heavily.

**Transparency**:
- Accidental homonymy is under pressure to disappear in both types, but even more so in Type 2. It may be replaced by structural homonymy.
- A Type 2 language will become more transparent: in particular, there will be less allomorphy and fusion.

**Isomorphy**:
- With respect to Isomorphy the picture is somewhat diffuse, though Type 2 languages may tend to be more isomorphic.

In Chapter 4 to 7, four typologically and geographically diverse language groups (cf. section 1.3) are examined to see if they contain these predictions.
3. Optimality Theory

3.1 Introduction

So far I have sketched a number of morphological principles involved in language processing and language change. In this chapter I will place these into the more general framework of Optimality Theory (OT). There are several morphological frameworks, embedded in various linguistic theories and directed at different research problems. In the context of my research a theory should fulfill several requirements. OT seems to fulfill these demands best.

First of all, the framework should be formal, explicit, and rigid. A high level of formality is an advantage, since it guarantees a more transparent relation between a model, its predictions, and the data it refers to. My morphological principles are loosely stated, and rephrasing them into another framework which is no more rigid adds nothing. There are several theoretical perspectives on morphology that are in the same spirit as my theory, but which are not sufficiently explicit and formal. For example, Bybee (1985) and Wurzel (1989) discuss inflectional systems from the same perspective as I do. They consider language structure as a temporary compromise between competing motivations in discourse, and they explain language change and structure invoking performance and acquisition factors. In morphological work by Carstairs-McCarthy (1987), a principle of Transparency is outlined as well, and possible deviations from ideal Transparency are discussed. However, although I have made use of these ideas in earlier chapters, in this chapter I outline a more formal approach to inflectional change. OT provides a formal framework since its primitives and machinery are abstract, general and explicitly articulated. When its formal primitives are given substantial content, explicit algorithms compute the possible output of a specific grammar. OT is, however, only one of the various formal explicit frameworks.

A second requirement is that complex inflectional systems can be distinguished from simple ones. My approach leans on the assumption that social factors correlate with dimensions of complexity, and the theory must be able to distinguish between languages and language structures that comply with Economy and Transparency, and languages that do not. In several theories some kind of notion of markedness or naturalness is assumed. However, a framework like Anderson’s (1992) fits this demand less easily. Anderson’s theory is formal and is well-suited to handle facts from highly complex inflectional morphologies in languages like Georgian and Potowatami. However, in this model it is assumed that inflectional affixes are essentially not morphemic. Instead, inflectional spell-out rules involve all kinds of morphological processes like subtraction, metathesis and infixation. Uniform morphemes are just accidental by-products or abstractions from these processes. Since my notion of Transparency depends on a notion of morphemic structure the model is inappropriate for my purposes.

The advantage of Anderson’s model is that it deals with complex paradigms. Other approaches that are meant to handle complex inflection, and are formal, explicit and morphemic, are so-called pre-syntactic lexicalist theories like Lieber (1981), Selkirk (1982), and Wunderlich (1996). In such theories both inflected and derived words are composed in the lexicon by the concatenation of morphemes on the basis of their subcategorisation frames. Morpho-syntactic properties like ‘agreement’ percolate from the individual building-blocks to the level of the full word. Syntax operates on these full
words with their properties, and post-syntactically only phonological processes like assimilation apply. This kind of framework has several variants. However, I will not explore these further for two reasons. First of all, these models have severe difficulties with handling complex inflectional phenomena. For example, restrictions on combinations of different categories, what I call Economy, must be translated into feature specifications or subcategorisation frames of individual morphemes, since there is no module where such generalisations find a place (cf. Noyer 1992). These models are better suited to derivational phenomena than to the inflectional phenomena dealt with here, since in derivation, complex phenomena like underspecification or Economy play a minor role. In addition, these models have difficulties in making distinctions between inflection and derivation, which is an important distinction in my theory (cf. section 1.5.3). In pre-syntactic models, both inflection and derivation take place at a deep level, and distinctions between them can only be stipulated ad hoc.

Post-syntactic models distinguish inflection and derivation, and they deal with Economy more elegantly. In post-syntactic models syntactic operations work on semantic features, and lexical items and inflectional affixes are inserted post-syntactically. In these frameworks, derivational morphology takes place through word-formation rules in the lexicon, and uninflected words are inserted into syntactic structure as atomic units. Inflection is treated in the interface between the outcomes of the syntactic operations and the phonological and phonetic modules. In that interface interaction takes place between the semantic and syntactic information as provided by the syntax, idiosyncratic properties of the inflectional lexemes, and inflection-specific generalisations such as underspecification, fusion and fission (cf. Anderson 1992; Noyer 1992).

A post-syntactic model that is both explicit and morphemic is Distributed Morphology (DM) (cf. Halle and Marantz 1993). In DM inflectional spell-outs are essentially instantiations of lexical morphemes, and operations that are not affixations, or which consist of complex affixations, are considered to be deviations from the ideal state (cf. Noyer 1992: 8ff.). The attractive idea behind such more restricted post-syntactic frameworks is that in principle morphology could be an extension of syntax and phonology, but that there are some complex phenomena that call for an independent treatment (cf. also Aronoff 1994, 1998). Such a perspective on an ideal state with deviations tails with the analysis of deviations from Transparency, Economy and Isomorphy in my model. In DM these deviations boil down to specific morphological rules necessary to relate a syntactic representation to a phonological representation.

However, instead of using the terminology of DM itself, I prefer the model and notation of OT, though in a version compatible with the DM framework. In fact, it is argued by Noyer (1993) that DM is translatable into OT. I prefer the notation method of OT for several reasons. First, while DM is mainly restricted to morphology and syntax, OT is a framework which is more widely used. OT makes few specific claims about the architecture of grammar. Instead, it is a notation method, and a way to expose solutions in a common framework. Therefore, OT is compatible with many other approaches. With the help of the tools of OT various ideas and theories can be given shape and eventually compared. For a decade various approaches have found their expression in OT, and the mutual comparability with the help of a common notation framework has proved to be advantageous. Second, the OT notation clearly shows how principles of language processing relate to model-internal notions, because OT ‘rules’ are formulated in such a
way that they refer to the surface form, instead of to underlying machinery. As we will see below, Type 1 and Type 2 processing dimensions (cf. section 2.3) translate quite easily into OT notions.

A final advantage of the OT notation, which is shared with the less formal approaches of Bybee and Wurzel (see above), but not with DM or other generative approaches, is that it is also compatible with a functionalist perspective on language. Although OT is often considered as a framework that characterises innate knowledge of language, OT is flexible enough to be compatible with functionalism. In OT, there are no rules changing one representation into another, but only ‘constraints’ on representations. Unlike traditional linguistic rules, these constraints may be violated, but nevertheless remain present, as universal pressures or “forces”, that surface when other constraints blocking them are absent in certain linguistic environments, or after linguistic change. In this view on language, where constraints may contradict each other, certain groupings of constraints correspond to the Principles of morphology and eventually to the two types of speech community as discussed above in 2.3. Moreover, like my Principles, these groups of constraints can be related to different functions of language (cf. Kager 1999: 11). In other words, while the content of constraints may be universal, the order of importance of groups of constraints may be connected to the various types of language processing, and the two types of speech communities I proposed in section 2.3.

So, although OT is not intrinsically a functionalist model, it is at least compatible with functionalism, when constraint families are considered as mental correlates of communicative pressures. Haspelmath (1999: 3) states:

   "It seems that most of the widely used, non-ephemeral constraints can straightforwardly be reformulated in user-optimality constraints. Thus there is a generalisation here that has not been captured so far. Loosely speaking, what is good from the point of view of the theory is good from the point of view of language users. Grammatical optimality and user optimality are largely parallel. The obvious way of accounting for this striking match between grammatical structures and speaker needs is the notion of adaptation” (cf. also Bresnan and Aissen 2002).

After these statements Haspelmath goes on to describe grammars as outcomes of adaptation brought about by language change. Like Haspelmath, I also relate constraints and groups of constraints to language processing (cf. Bresnan 2000).

As discussed in 1.2, the ideal linguistic theory should explain all language use phenomena, and thus the difficulties experienced by speakers, hearers, L1 learners and L2 learners would all follow automatically from the theory. OT theory cannot fulfil these high demands. Complexity defined as ‘outsider complexity’ cannot be deduced from a formal property in OT. Various constraint rankings in OT (cf. below) that I relate to morphologies which I call ‘simple’ versus ‘complex’ do not differ from each other in their formal properties. As Bresnan and Aissen (2002: 6) write: “The ranking of constraints is a conventional property of grammars, which can be altered by style shifting and influenced by the social value attached to outputs, and by a myriad of other factors independent of the theory embodied in the constraints [emphasis added].” However, although OT itself does not produce any kind of complexity measure, I will show in the following sections that when we take a further look at this ‘myriad of factors’, we may not be able to incorporate these factors into OT, but we may correlate them with particular types of constraint rankings.
3.2 Basics of Optimality Theory

Optimality Theory is a framework that originally dealt with phonology (cf. McCarthy and Prince 1993). In OT the relation between two levels of representation, the Input and the Output level, is not made by rules that transform one level into the other. On the contrary, the central tenet of OT is that there is a set of constraints, that govern and determine the form of the Output level. This contrasts with earlier models where the output was just a result of earlier rules, which were blind to what they produced.27 OT does not focus on the question of how to relate representations to each other. Instead, its central question is: what is the most plausible set of constraints which will account for as many Output forms as possible? However, there must be a relation between different levels. This relation is made in OT by claiming that there are constraints on the amount of deviation the Output may display with respect to the Input. Note that even such constraints are focused on the Output, by evaluating the amount of deviation in the Output, and not on the kind of processes that relate the Input and Output levels.

In the OT model three components are distinguished: (a) a universal Input; (b) a set of candidates produced by the universal GEN function; and (c) an evaluation function, EVAL which selects the optimal Output from these candidates. The Input may consist of anything, e.g. phonological strings without syllabification, strings of morphemes that have not been subject to assimilation, bare semantic specifications, etc. To each member of the Input set, GEN attaches an infinitely large list of Output candidates. When the Input consists of a phonological string without syllable structure, the set of Output candidates comprises all kinds of suggestions for possible syllabifications of the string, and the optimal Output is the optimal syllabification of this string. The optimality of the Output is computed by the EVAL function. This function consists of a universal set of constraints, a language particular dominance ranking of this constraint set, and a universal algorithm which calculates the optimal candidate with respect to the language specific constraint ordering. It is this constraint set, and its ordering possibilities with which most OT work is concerned. When the Input is again a string without syllabification, an OT grammar tries to formulate appropriate constraints which interact, are hierarchically ranked, and for any Input provide the correct actual Output for a particular language.

The universal set of constraints consists of constraints like Faith, which demands that the Output is similar, or ‘faithful’, to the Input, and No-Coda (+Voice) that forbids a voiced coda.28 In different languages these constraints are ordered in different ways. An important difference from other models is that, unlike rules, constraints may be violated. That is, a constraint is preferably but not necessarily obeyed. When two constraints conflict, the lower ranked constraint in the hierarchy may be violated. For instance, consider a language where Faith is more important than No-Coda (+Voice). In such a language, like English, syllables that end in a voiced consonant are allowed. Such syllables violate No-Coda (+Voice), but comply with the higher ranked constraint, Faith.

27 Another difference is that there are no intermediary levels of representation in OT. In earlier models intermediary levels between an underlying form and a surface form were used to deal with so-called feeding and bleeding phenomena (cf. Kenstowicz 1994: 94ff.). For these problems other solutions are sought in extensions of OT, like ‘sympathy theory’ (cf. McCarthy 1999).
28 The first time I name and define a constraint I put it in bold face.
In a language where No-Coda (+Voice) is ranked higher than Faith, syllables do not end in a voiced consonant. For instance, when the Input is /b-i-d/, the Output will be /b-i-d/ in the first case, in e.g. English, and in the second case, as in Dutch, the Output will be /b-i-t/. The standard way to present OT analyses is with the help of so-called tableaux:

<table>
<thead>
<tr>
<th>Input: Dutch b-i-d</th>
<th>No-Coda (+Voice)</th>
<th>Faith</th>
</tr>
</thead>
<tbody>
<tr>
<td>bid</td>
<td>*</td>
<td></td>
</tr>
<tr>
<td>bit</td>
<td>*</td>
<td></td>
</tr>
</tbody>
</table>

In the lower left-hand column a list of (in this example: two) candidates is given. The optimal candidate is marked with an arrow. In the other columns we find constraints and stars (*) when the candidate violates the constraints. Exclamation marks refer to violations that prevent a candidate from being optimal. The order of constraints corresponds to the left to right order of columns. Columns are separated by a dotted line when constraints are unordered with respect to each other. A double spaced line separates constraints that are intrinsically ordered. A dotted line separates constraints that are mutually unordered.

Tableaux are useful ways to present dominance relations which are linearly ordered. When the dominance order is not linear I use an adapted version of Hasse diagrams to show the mutual ordering. Figure 3.1 (cf. section 4.7.2.1) shows an example of relations between constraints that cannot be shown in a tableau. An arrow connects a constraint to another it dominates.

![Figure 3.1 Example of an adapted version of a Hasse diagram](image)

Regular variation between and within languages is governed by differences in the constraint rankings. In Tableau 3.1 the order of No-Coda (+Voice) above Faith should be turned around for English. An important part of language change must therefore be modelled as changes in constraint rankings. As we will see in section 3.4, in addition to constraint reranking, lexical changes are also involved in language change.

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29 In my version of the Hasse diagram the direction of the arrows refers to the direction of dominance. In traditional Hasse diagrams this is shown by a high or low position in the diagram.

30 Voice in this diagram is morphological voice, and has nothing to do with voicelessness of consonants as in Tableau 3.1.
The constraints can be divided into two huge families, faithfulness constraints and markedness constraints. The faithfulness constraints state that the Input and Output should be as similar as possible. Such constraints can be divided into two groups: one group demands that all features of the Input are also present in the Output. These are formulated as \( \text{Max(imality)}(X) \), which means that X in the Input level is also present in the Output level. For instance, \( \text{Max}(d) \) prevents deletion of the segment /d/. The other group of faithfulness constraints demands that every part of the Output is also part of the Input. This prevents epenthesis. For instance \( \text{Dep(endence)}(\text{vowel}) \) prevents the insertion of vowels. These constraints account for structure in language, because they connect syntactic, morphological and phonological levels. When these constraints are relatively unimportant in a language, many structure-changing deviations are possible, since deletions, epentheses, and other structure changing processes may take place.

The other kind of constraints are the markedness constraints, which reduce markedness of structure. Essentially, in phonology all deviations from an optimal CV-CV form, or /ma-ma/ form, are marked and somehow constrained. For instance, \( \text{Onset} \) demands that a syllable has an onset, and when this constraint is ranked higher than the relevant Dep-constraint, an epenthetic onset consonant may be introduced. Another example is the constraint \( \text{NoObsBV} \), which forbids obstruents between vowels. When this constraint is ranked higher than \( \text{Max}(d) \), as in Dutch for instance, the Input /rod/ will not be identical to the Output /roj/, cf. Tableau 3.2.

<table>
<thead>
<tr>
<th></th>
<th>( \text{NoObsBV} )</th>
<th>( \text{Max}(d) )</th>
</tr>
</thead>
<tbody>
<tr>
<td>/rod/</td>
<td>*!</td>
<td></td>
</tr>
<tr>
<td>/roj/</td>
<td></td>
<td>*</td>
</tr>
</tbody>
</table>

In principle the ranking of constraints is language-specific, and differences between rankings lead to language variation. This does not imply, however, that there are no universals. Some universal principles emerge from the content of the constraints. For instance, since there are no constraints that demand unvoiced plosives intervocally, or constraints that forbid voiced plosives except between vowels, there is simply no way to construct a grammar in which plosives are voiceless only intervocally. The absence of such constraints entails the universal: “there is no language with voiceless plosives only intervocally” The reason for this lack of constraints must be researched outside OT, for instance, in limitations on articulation. However, this leaves other universals unexplained, since some languages and grammars that are not attested could be constructed by selecting a proper constraint ranking. For instance, there are no languages with labials but without coronals. However, for various phenomena constraints like \( *[\text{Lab}] \) and \( *[\text{Cor}] \) are necessary, and a grammar with labials but without coronals could be constructed. Therefore, Prince and Smolensky (1993) suggest that implications like:

\[ 31 \text{ In Correspondence Theory (McCarthy and Prince 1995) faithfulness relations have been generalised. It is only demanded that there is a correspondence between domains. Except the Input and Output domain, this may, among others, be the Base and Reduplicant domain, or two Output levels (cf. section 3.3.3.3).} \]
there is no language with labials but without coronals’ can be captured by a universal ranking of *[Lab] above *[Cor].

3.3 Morphology and Optimality Theory

3.3.1 Introduction

In an OT account of inflectional morphology the Input level is the level of semantic features, and the Output level the morphological form of inflected words (cf. Bresnan 2001: 14; Noyer 1993). The Input consists of semantic specifications like “drink+PAST+3+SG”. The candidates are combinations of lexemes and inflectional affixes, consisting of semantic specifications and phonological material, like “drink+PAST / drank”, “drink+PAST+3+SG / drank-s”, etc. The constraints determine which candidate wins.

The candidates are composed from elements from the lexicon, which plays a crucial role. In phonology the lexicon is less important, because the focus lies on the phonology of all possible words. In morphology, however, the main focus lies on the appropriate generalisations to account for the regularities in the set of actual words. What an actual word is, depends on whether it is complete in itself, or composed of various lexical items.

Therefore, in addition to the OT components GEN, EVAL, Input and Output, a speaker also has knowledge of a lexicon. What exactly belongs to the lexicon depends on the theory of the grammar. On the one hand it is assumed that the lexicon consists of at least all idiosyncratic information that cannot be derived from the interaction of universal constraints. Among these is knowledge about what lexical stems and derivational and inflectional affixes a language has. On the other hand, inflectional, and derivational generalisations are sometimes also assumed to belong to the lexicon. In my model of OT the function of the lexicon is to check whether the candidates proposed by GEN correspond with lexemes and affixes present in the lexical knowledge of the speaker. Therefore, in my model the lexicon consists of derived though uninflected form-meaning-pairs (morphemes and morpheme combinations) like words and inflectional affixes. The lexicon check is demanded by a constraint which, according to Noyer (1993: 3) is never overruled: Lexicality (LEX), which says:

“A complex sign is well-formed if and only if it consists only of morphemes.”

I assume that morphemes are couplings of sound and meaning, and are subsumed in the lexicon (cf. also the discussion in 3.1). Then the LEX constraint rules out all strings of sound that do not consist of actual lexical material. For instance, nonsense words like duft or words uttered with a non-conventional meaning like table for ‘chair’ are excluded by LEX. This does not imply, however, that lexical form-meaning relations do not change. LEX only secures that there is a boundary between morpho-phonologically possible morphemes, like duft, and morpho-phonologically possible and lexically actual morphemes, like dust. Morpho-phonologically possible strings that comply with all constraints except LEX are not signs in the sense of Saussure (1972). They do not have a conventionally licensed meaning. They only become signs when they are loaded with meaning and become part of the lexicon of at least one, but according to Saussure
(1972), of at least two speakers. Now, when they are part of the lexicon, and therefore comply with LEX, and do not violate other high-ranking constraints they have become acceptable linguistic signs.

One can state the function of LEX informally by saying that GEN draws the set of candidates from the lexicon which are subsequently presented to EVAL. We must keep in mind, however, that in fact GEN produces an infinite set of candidates consisting of all possible form-meaning-pairs, which is subsequently subject to this constraint LEX. The elements of the lexicon are morphemes that are specified for their phonological form, their syntactic class, their semantics, and their possibilities to subcategorise.

A learner builds up a lexicon by absorbing, analysing and generalising over Output forms. The learner makes hypotheses about what parts of the Output are determined by the forms of lexical items, and what parts are determined by constraint interactions. The lexicon which the linguist postulates is an approximation of the learner’s lexicon. The linguist can choose to propose highly abstract forms in the lexicon, thereby reducing its size. This leads to a large battery of constraints in the grammar. On the other hand, the lexicon could be extended and filled with numerous forms. The advantage of such a large lexicon is that less constraints are needed. This same dilemma plays a role in inflectional change. In section 4.7.2.2 I discuss a morphological change in Najdi Arabic which can be represented as the promotion of a constraint that forbids combinations of voice and aspect in certain environments. However, the same change can also be represented as a change in the lexical content of the affix in question (cf. section 3.4 and 4.7.2.3). In such cases results from psycholinguistic research may, in principle, decide what representation is more appropriate.

In some cases affixes are sensitive to the lexeme or to other affixes to which they are attached. In some instances we can account for this with the help of constraints that lay restrictions on certain co-occurrences (cf. section 3.3.2), or with constraints that determine the way of affix attachment (also called ‘alignment constraints’, cf. McCarthy & Prince 1993; Van Oostendorp 1998). However, often we want to express that an affix or a stem subcategorises for a specific group of other affixes or stems. For instance, the inflectional affix \(-st\), 2\textsuperscript{ND} PERS in Old Norse and Icelandic is only used for a particular group of verbs, namely, the so-called second form of strong verbs. When a subcategorisation frame does not match with the lexemes in question a clash arises. I assume that such clashes are banned by LEX, just like non-lexical elements themselves are disallowed by LEX. For example, when \(-st\), 2\textsuperscript{ND} PERS is used for other groups of

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32 In fact, the issue here is when does an utterance count as a conventionally acceptable utterance? Or, when does something belong to the lexicon? On the one hand, not all conventions need to be known by all members of a speech community. On the other hand, conventions that are only followed by individual speakers are problematic as well (cf. Saussure 1972; Wittgenstein 1953). Depending on one’s view on the status of OT grammar, one may consider LEX as a normal constraint within the grammar of an individual language user, or as a kind of social constraint. Considered from a Saussurean point of view LEX distinguishes between the ‘langue’ as a calculus, and the ‘langue’ as a conventional system (cf. also Kaldewaij 1986: 10ff. and Koefoed 1993).

33 LEX is an untypical constraint since it is never violated and by definition top-ranked. Therefore, we could also say that LEX is part of the hardware of OT grammar. However, LEX plays an important role when the lexical inventory changes and it is more insightful to represent it as a constraint (cf. section 3.4).
verbs, like weak verbs, it violates LEX, because its subcategorisation frame is not met. The subcategorisation frame is also part of the inflectional system in other respects. When a constraint demands the absence of a certain category, affixes subcategorised for this category are filtered out.

The inviolability of LEX implies a morphological model in which inflected words are constructed from elements of the lexicon, which are basically morphemes, and not from processes like subtraction, as Anderson (1992) argues. Anderson argues for a model in which inflection is governed by a separate set of language-specific rules in a morphological component (cf. section 1.5.3). These rules may add, delete and change phonological material, and they convert a so-called Morpho-Syntactic Representation (MSR) into an inflected morphological word. In Anderson’s model an inflected word does not necessarily consist of morphemes, and LEX may be violated. In the model of OT as I conceive it, all rules that Anderson uses to account for complex phenomena where MSRs do not translate unequivocally into morphological words have to be taken care of by a set of inflectional constraints.

In section 1.5.3 I argued that inflectional and derivational morphology react differently to the social processes discussed there. Therefore a model of inflection should distinguish between inflection and derivation. In OT the difference between inflection and derivation can be described as follows. Both inflectional and derivational affixes belong to the lexicon, and their manifestations in actual speech are determined by constraint ranking and constraint interaction. However, derivational affixes behave like other lexical items, while the form of inflected words is co-determined by a special class of OT constraints, involving morpho-syntactic features. The combinatorial possibilities and restrictions of derivational affixes are part of the idiosyncratic properties of the lexicon, while their phonological shape is defined by the ordering of constraints. The same applies to inflectional morphology, but in addition inflection is governed by a specific set of constraints. Among the OT constraints there are constraints like *[Pers, Pl] that demand that person and plurality are not expressed together in inflection (see section 3.3.2). Such constraints refer to the content side of specific morphemes, which is only available when the wider syntactic constellation is known. In this sense inflection takes place ‘after’ syntax. Anderson (1992: 85) writes: “...inflection is precisely that morphology [in contrast with derivational morphology, WK], with respect to which principles of syntax and of word formation interact within particular grammars.” In OT terms, this implies that constraints dealing with inflection may refer to (morpho)-syntactic properties of the morphemes, in contrast to constraints that govern derivational morphology. These latter constraints may refer to prosodic, phonological and morphological properties of a word, but they do not have access to (morpho)-syntactic properties. Semantic restrictions on derivational affixes are determined by the lexical content and subcategorisation of these affixes.

The set of morpho-syntactic properties relevant for inflection is restricted. For instance, there is no language in which the length of the agents is expressed in the verb. Although the variation in the precise semantic and pragmatic values of inflectional notions is unrestricted, e.g., what counts as plural and what as singular is language-particular, the constraints are formulated in terms of a restricted set of universal features. Semantic notions that are never expressed in a particular language, fall under OT constraints that forbid that notion, are highly ranked and not violated. Such inflectional notions are either
not present at all in the language in question, or they find a different expression, e.g. in
derivation, lexical semantics or pragmatics. The ranking and interaction of inflectional
constraints determine what inflectional notions surface in what form in a language. This
ranking is partly determined by a universal hierarchy of constraints discussed in section
3.3.2.

I assume that constraints that deal with inflectional morphology are intrinsically ranked
above phonological constraints. The ‘inflectional constraints’ concern semantic-syntactic
categories, of which the expression is independent of phonological considerations that
deal with the material form of the inflected words. Cases where phonological
considerations are apparently more important than inflectional ones are in fact
misleading. For example, although some phonological changes in older Quechua led to a
conflation between the narrative past and future tense in 1st person subject forms, these
semantic categories are still present in these forms. However, losses of semantic
categories are often triggered by phonological changes. For example, the loss of vowel
quality distinctions in Faroese led eventually to loss of number distinctions in the past.
Nevertheless, this latter loss is not directly caused by a rising of phonological above
inflectional constraints, but indirectly by a triggering of the promotion of inflectional
constraints that was caused in its turn by the rise of the phonological constraints (cf.
section 5.7.6).

3.3.2 Markedness Constraints and Constraint Composition

The Economy Principle states that as few categories as possible should be expressed in
inflectional morphology. The inflectional categories I deal with in this study are: voice,
tense, aspect, mood, person, number, gender. These categories are subdivided in
subcategories like person-subject agreement, person-object agreement, dual, singular,
etc. In OT we can formulate the Economy Principle as a morphological markedness
constraint, which expresses universal markedness in morphological structure. These
constraints have the form of a ‘filter’ *[X, (Y)] which means:34

“The inflectional categories X (and Y) is/ are not allowed to be represented (together) in
a word.” (Y is one or more categories).

Filters of the format *[X, Y] are conjunctions of the filters *[X] and *[Y]. Such
conjunction filters can only co-determine the computation of optimal candidates when
they are ranked at least as high as their subparts. With the help of conjunction a restricted
set of general constraints combine to yield a larger set of specific constraints. For
example, when we take for X the 3 persons, for Y 3 numbers, singular, dual and plural,
and 2 genders, feminine and masculine, we can combine these general restrictions to
form *[Gender], *[Pl], and *[2nd] to *[Fem, Pl, 2nd], etc.

Constraints also combine in slightly different ways. In Arabic there is a constraint
Sim(V) that demands that vowels are similar in Input and Output, though this constraint
allows minimal vowel modifications. When we adopt a stricter version of this constraint
we arrive at the constraint that vowels in Input and Output must fully correspond,
Faith(V). Another conjunction-like combination in Arabic is the stronger version of the
constraint *(CV.CV.C), which forbids two open non-final syllables, namely a constraint

34 I will call these constraints filter constraints, markedness constraints or Economy constraints,
depending on what aspect of the constraint I focus on.
that forbids all non-final open syllables: *(CV.C). In all these examples violation of the weaker constraint entails violation of the stronger constraint, and the weaker constraint is either ranked higher than the stronger constraint or it is applied vacuously. Constraint conjunctions and combinations appear in filters, but also in faithfulness constraints (cf. section 3.3.3) like \textbf{Max(Pers, Pres, Ind)} as in Faroese.

During language change a general constraint often seems to split into more specific constraints that are promoted one after another. For instance, in Najdi Arabic the general markedness constraint *[Voice] is in first instance fully ranked below Max(Voice). Part by part *[Voice] is promoted. In other words, more specific sub-constraints of *[Voice], like *[non-3rd, Voice] and *[Intr, Imp, Voice] split off and are promoted first. Actually, the sub-constraints do not split off. Instead, the general constraint is an abbreviation for a family of more specific constraints.

Cross-linguistically, the various instantiations of such filters like *[3rd], *[1st], *[Dual], and *[Pl] have different chances of being ranked highly (cf. Bybee 1985; Cysouw 2001). A universal hierarchy can be stipulated in which person ranks below number, 3rd person below 1st person, and dual below plural. A low ranking on this hierarchy implies a high chance to be ranked high in the filter constraint ranking. The hierarchy is branched and parts of the hierarchy look as follows:


Person-branch: 1/2nd Person >> 3rd Person.

Number-branch: Sing >> Plur >> Dual.

This ordering predicts, for example, that *[ObjAgrNum] ranks higher than *[SubAgrPers], and *[1st, Pl] higher than *[1st, Sg]. It does not predict the ranking of *[3rd] and *[Dual], since nodes in different sub-branches are not related. Moreover, the order in the hierarchy is not always exactly mapped one-to-one onto the constraint ranking. For instance, in Icelandic *[1st, Sg] is ranked above *[1st, Pl], and in Bolivian Quechua the expression of number in the object is more important than the expression of the person in the subject when the object is first person. In the line of work in stochastic OT by e.g. Boersma (1998), the sign ‘>>’ could be given a probability number: only arrows that are always mapped as predicted onto the constraint rankings, like pl >> dual would receive a 100%.

The hierarchy also determines choices where the constraints themselves are not decisive. That is, a constraint of the form *[X, Y] results in the expression of the feature of which the category is ranked highest. For example, a constraint like *[Past, Pers, Pl] results in the neutralisation of person, since this is the lowest category of the three (consider for example the case of Faroese in section 5.7.4). Again, the hierarchy is not always complied with: in Icelandic the filter, *[Subj, Pl] leads to the reduction of the subjunctive mood and not the loss of number. Furthermore, the hierarchy also specifies what category is spelled-out in cases where the semantic features are not lexically specified. For instance, in Faroese affixes are unspecified for singular, and this feature is automatically assigned in instances where spell-outs are otherwise undetermined. Finally, in Arabic there is a constraint that demands that the hierarchy also operates in individual affixes:

\textbf{Max(High)}: “A candidate with affixes that have features that are high on the feature hierarchy is preferred above a candidate with lower features.”
The feature hierarchy is implemented in several parts of the OT grammar. Like phonological universal hierarchies, e.g. the sonority hierarchy, are founded in phonetics (cf. Prince & Smolensky 1993) the feature hierarchy is based on universal characteristics of communication. Eventually it is based on pragmatic preferences for relevance and clarity (cf. Bybee 1985; Grice 1967).

3.3.3 Faithfulness Constraints

The Transparency Principle demands that in morphological structure one form is related to one meaning. In OT this Principle corresponds to various Faithfulness constraints, both morphological and phonological. Kager (1999: 10) writes on faithfulness:

“From a functional viewpoint, faithfulness constraints protect the lexical items of a language against the ‘eroding’ powers of markedness constraints, and thereby serve two major communicative functions. First, they preserve lexical contrasts...Second, by limiting the distance between Input and Output, faithfulness constraints restrict the shape variability of lexical items...This enhances the one-to-one relations of meaning and form.”

The Input-Output faithfulness constraints are of four kinds: two morphological ones that operate on the meaning, and two phonological ones that operate on the material side of the morphemes. These are further subdivided by the directionality of the faithfulness. First of all, **MaxMorph (X)** is defined as (cf. Noyer 1993: 3):

“Each syntactic-semantic property X in the Input is represented by a separate form in the Output.”

Analogously, **MaxPhon (X)**, the phonological counterpart of MaxMorph (X), states:

“Each phonological feature X in the Input must be present in the Output.”

In addition, due to high-ranking LEX, the phonological Output form may only consist of lexical material. **Dep-Morph (X)** is defined as:

“Each syntactic-semantic property borne by the form of the Output is also a category in the Input.”

Related to Dep-Morph (X) is **Dep-Phon (X)**, which says:

“Each phonological feature X of the Output must be present in the Input.”

When we compose an OT grammar, we may put all information about what category combinations are **impossible** in various filter constraints. However, we may also use only one general filter constraint and to let various high-ranking faithfulness constraint express what categories are **possible** in spite of the general filter. For instance, in Katanga Swahili there are two ways to represent the fact that there is no object agreement with class 5 nouns, though there is object agreement with class 1 and subject agreement with class 1 and 5 nouns. First, we may rank more specific constraints like Faith(ObjNC5) below *[Agr], but Faith(ObjNC1), Faith(SubNC1) and Faith(SubNC5) above the general *[Agr] filter constraint. The other solution is to specify *[Agr] as *[AgrObjNC5] ranking above a general faithfulness constraint Faith(Agr), and *[AgrObjNC1], *[AgrSubNC1], and *[AgrSubNC5] below this constraint. The choice between these solutions depends on the rest of the grammar in question and on descriptive efficiency, though in some cases the choice seems rather arbitrary (cf. section 7.6.2).
3.3.3.1 Fusion

In fusion (cf. section 2.1.2.1) two or more syntactic or semantic notions are spelled out in one affix. For instance, Icelandic -um expresses both first person and plural number. This is a violation of MaxMorph (X), because ‘property X - in this case, person or number - is not represented in a separate form. I consider this as a weak violation (one star), because property X is represented, though in fused form, together with another feature. When property X is completely absent, this counts as a heavy violation (two stars). For instance, the Faroese counterpart of Icelandic -um is -a, which only expresses number and therefore violates Max(Pers) twice.

When we compare a language which has two separate affixes for two semantic features with a language which has only one fused affix for two features, we may hypothesise that the latter language is ‘closer to’ erosion, that is disappearance of one of the semantic notions. In the first stage in a transition from two non-fused forms to one fused form, MaxMorph is not violated. Instead, phonological constraints are reranked: assimilation becomes more important than phonological faithfulness. When eventually two phonological forms have been assimilated to such an extent that they are reanalysed as representing two semantic features in one form, MaxMorph is violated once, and we speak of a fused form.35 From a fused stage to an eroded stage is only one more violation of MaxMorph (X), while a markedness filter, *[X] is better complied with. When this transition from a fused to an eroded form is also accompanied by the promotion of other preferably high-ranked phonological constraints, fusion can be considered to be a weak spot in a language. In comparison with a two-step loss of a category, the direct transition from a non-fused stage to an eroded stage demands a heavier constraint re-ranking. MaxMorph(X) receives two instead of no stars, while still only one markedness constraint *[X] is better complied with. Nevertheless, such inflectional changes can also be found, for instance, in the loss of a number category in Ecuadorian Quechua (cf. section 6.6.2).

Fused forms stand between non-fused and eroded forms, and often the road from two non-fused forms to one non-fused form passes a stage of fusion. This road is however not uni-directional. Fused forms may also be replaced by non-fused separate expressions. For instance, in Argentinean Quechua the fused 1SUB/2OBJ fused form -yki of Cuzco Quechua is replaced by two separate forms -ni, 1SUB and -su, 2OBJ (cf. section 6.6.3), and Max(Sub) and Max(Obj) are better complied with than before.

Two alternative accounts of fusion are possible. Instead of MaxMorph we could propose two constraints: one strong constraint demanding separate expression of a category, and one weaker constraint that would comply with any expression of feature X (Muysken, pers.comm.). I use a similar distinction in 4.7.2 for weak versus strong similarity between Input vowel and Output form. However, at least for the cases in this study, such a distinction is not needed. Another extension of my treatment of Transparency and fusion would be to propose that there is a continuous scale of increasing violation of MaxMorph(X). The measure of violation would depend on various phonological factors like heaviness of the syllable in which X is found; number of possible vowel contrasts that are used for expressions of X; and position of X in the word with respect to stress.

35 Other paths towards fusion are also possible, for instance, through complex reanalyses, and semantic shifts (cf. Van Bree 1996: 150ff.).
(Van Oostendorp, pers.comm.). However, in my approach MaxMorph takes only the presence and possible merger of a **syntactic-semantic** feature into account, while the phonological form of the expression is accounted for by the phonological constraints that are independently needed anyway. This entails that in my approach the opacity of a form depends on the ranking of the phonological constraints in question, in combination with MaxMorph, while in the alternative approach the measure of opacity is directly apparent from the MaxMorph constraint. However, the price of this direct access is that the phonological constraints are copied onto the MaxMorph constraint. The advantage of such a doubling would mean that we could model more phonological constraints for inflectional affixes than for non-inflectional material, because the phonological evaluations within MaxMorph would not necessarily be similar to the other phonological constraints. Whether such an extension is necessary still remains in question: my model functions without this extra machinery, at least for the cases in Chapter 4 to 7.

As in the cases discussed so far, the disappearance of fusion may be a result of the reranking of filter constraints, Max(Morph) constraints and phonological constraints. In addition, constraints like Max(Order), which is the OT formulation of the Isomorphy Principle (see below), may also be involved. In Ecuadorian Quechua all three kinds of morphological constraints play a role in the disappearance of fused affixes.

Until now I have discussed the constraints that prevent fusion. Apart from the interplay of faithfulness constraints and a specific lexicon, there is also a constraint that directly promotes fusion, namely **Max(Cat)**, which states:

“A candidate with affixes that have features a and b is preferred above a candidate expressing only b, that is, a more specified form is preferred above a less specified form.”

This constraint demands that as many features as possible are expressed in the inflected word, at the expense of requirements stemming from Transparency and Economy, that is MaxMorph, and filter constraints. In Arabic the interaction of Max(Cat) with MaxMorph and filter constraints explains the variation in person, number and gender. The advantage of this constraint above the use of a constraint like *[X, Y]*, which would explicitly forbid fused affixes, is that the constraint Max(Cat) can also be used to account for fission. The Max(Cat) constraint is the OT formulation of the Paninian Principle or the Elsewhere Condition that also demand to use first the most specified forms available in a derivation, leaving forms with fewer specifications to cases where the earlier fully specified forms do not apply.

### 3.3.3.2 Fission

Fission (cf. section 2.1.2.4) is a violation of DepMorph(X), because in fission property X is expressed in more than one section of the inflected verb. Fission may be a result of template demands on word structure which compel semantic notions to split in order to fill all the slots in a template. Another motivation for fission is ‘hyper-saliency’. In Athabaskan languages, for instance, like Slave (cf. Rice 1989), negation is expressed twice in inflected verbs: once in an unstressed affix, already present in older stages of the languages, and again in a younger affix that seems to amplify the eroded power of the older affix. Negation is expressed in more than one affix in Swahili as well.

Fission, fusion and allomorphy are hard to distinguish, when one affix of a fissioned pair also expresses another category. For instance, `-i` in Swahili *ha-wa-ø-imb-i*, NEG-2-SG-
NEG.PRES.IND?36 can either be considered to be a fused affix that also expresses negation twice, or it can be considered as an affix that expresses present indicative with the help of an allomorph conditioned by negation (cf. section 7.6.3).37

Apart from DepMorph(X), lexical template demands, and filter constraints, Max(Cat) plays also a role in fission. Max(Cat) states that as many categories as possible should be expressed, and thus also violates DepMorph(X).

3.3.3.3 Allomorphy and homonymy

The OT constraints and mechanisms for economy, fusion and fission discussed so far play a major role in this research. In the language descriptions below I also discuss reductions of allomorphy: in Scandinavian, for instance, I examine the fate of strong and weak verb allomorphy. In addition, I also use homonymy to explain early Scandinavian change and avoidance of particular forms in Southern Quechua. However, allomorphy and homonymy lend themselves less easily to a smooth and interesting general OT account. Allomorphy reduction in Faroese and Norwegian strong verbs follows paths too capricious to subsume them in a straightforward OT account. Allomorphy also plays a role in Arabic strong verbs, and in the tensed stem of Swahili, but an account here in terms of OT would not provide extra insights into general inflectional change. Allomorphy and homonymy deal with aspects of language structure which are hard to capture in generative grammar and in OT, namely paradigmaticity. Allomorphy and homonymy are only apparent when we take relations between several Output forms into account, while generative and OT approaches tend to focus on the analysis of the relation between an underlying form and one surface form. However, there have been made several proposals to capture paradigmaticity in OT.

First, we may suppose that allomorphic and homonymic relations are found in the lexicon, and that reductions in allomorphy and homonymy are instances of lexical change (cf. Booij 1997; Rubach & Booij 1998). As far as interactions between paradigmatically related Output forms are only local and not generalised, as Joseph (2002) claims, this is a plausible solution. However, although the observations Joseph (2002) makes on the capricious behaviour of lexical items challenge a view that treats all analogous changes within the grammar, the opposite, namely that no analogous change is generalised as a general rule or constraint reranking is still unmotivated.

Second, Benua (1997) proposes a special form of correspondence constraints, namely, Output-Output (OO) constraints. These constraints demand faithfulness between different Output forms and lead to paradigmatic regularity, thereby restricting allomorphic and homonymic deviations from faithfulness. Originally, OO-correspondence was used to explain over- and underapplication of markedness constraints in forms that were intuitively felt to be influenced by some kind of relationship with a paradigmatically related basic form. For instance, Benua (1997) discusses why ‘passing’ is pronounced as pesig in American English in New York, and not as pasig, which would be expected because of a high-ranked phonological constraint that says that low vowels are lax in

36 Except in examples from Scandinavian the ‘ø’ stands for a zero-morpheme. For Scandinavian I use this sign also to refer to a front round mid vowel.

37 The frequent occurrence of negation in fission is a result of a kind of pragmatic preference, like the universal feature hierarchy discussed above, based on notions like relevance, saliency and frequency.
open syllables, as in related words like ‘passive’, *pæsiv*. Benua suggests that this is a case of OO-correspondence between the tenseness of the vowels in ‘pass’, ‘pes’, and ‘passing’ ‘pesiŋ’. This high-ranking OO-constraint prevents markedness constraints from distorting the relation between the base and the affixed form. Output-Output-correspondences are used to explain phenomena where a form violates markedness constraints in order to correspond, not to the Input, but to a stem, or base form. OO-correspondences can be considered as the OT modelling of the pervasive tendency in language to have exactly one meaning expressed in exactly one form in different contexts, that is, paradigmatically. However, OO-relations evaluate forms on the basis of a base form. In rich inflectional paradigms allomorphy reduction does not always take place by taking one form as the base and other forms as derived. To extend the idea of regularity between surface forms, McCarthy (2001) proposed the model of ‘Optimal Paradigms’, which is the third solution for allomorphy and homonymy, to which I turn now.

The ‘Optimal Paradigms’ theory does not only take care of variation between base and derived forms, like *pass* and *passing*, but it applies to all paradigmatically related lexical items. In other words, it rewards restrictions on allomorphy without assuming that there is one form on the basis of which regularisations within the paradigm take place. McCarthy (2001: 14ff.) shows that in the Arabic perfect paradigm (cf. also section 4.2.1) of the form CvCvC-Suffix, the second vowel can never be long. Although in forms with a vowel-initial suffix a long second vowel would be possible, Optimal Paradigm constraints prevent this. These constraints demand that the number of mora’s remains the same across the paradigm. In addition, forms with consonant-initial suffixes must have a short vowel, because of another markedness constraint that forbids three mora’s in one syllable. These forms also induce a short vowel in other forms of the paradigm, because of the high-ranking Optimal Paradigm constraints. McCarthy’s (2001) extension of the OO-correspondence model may be used to model morphological paradigmatic relations as well. For instance, in Bolivian Quechua the verbal suffix string *wa-yku*, is a rather strange form when we look only at the Input meaning of the separate affixes, which would be: OBJ - 1PL.EXCL. Its actual meaning is however 1PL.EXCL.OBJ + 2/3SUB. The reason why this form is chosen becomes clear when we look at the rest of the paradigm. Then we see that this form falls quite neatly into an analogous pattern, and it can be said to be faithful, not to the Input -the set of syntactic and semantic categories- but to the other Output members of the inflectional paradigm (cf. discussion in 6.6.3).

It is important to note that the OO constraints and the OP constraints do not necessarily lead to less deviations from Transparency. Although in McCarthy’s example from Arabic above verb stem allomorphy is prevented, this is not always the case. OP constraints only reduce deviations between Output forms, which does not necessarily imply greater Transparency between meaning and form. In Southern Quechua (cf. section 6.6.3) the reduction of violations of OP-constraints does not imply reductions in Transparency deviations, because the basis from which the paradigm becomes optimal in Southern Quechua is violating Transparency constraints, and this violation is spread through the whole paradigm.

One last word on homonymy: most homonymy emerges as a result of filter constraints, because when a filter conflates two semantically different forms, we have a violation from the viewpoint of transparency, namely homonymy. However, in addition, there is also accidental homonymy (cf. section 2.1.2.2). The avoidance of this form of homonymy
can only be accounted for in a paradigmatic approach that evaluates several Output forms together.

### 3.3.4 Isomorphy

The Isomorphy Principle demands a one-to-one correspondence between the order of affixes in morphology and the order of semantic notions in a syntactic, semantic or pragmatic representation (see section 2.1.3). The maintenance of this order on two levels of representation can be modelled in OT as another form of Correspondence constraint. While the faithfulness constraints discussed so far all deal with preservation of phonological and morphological features between two levels, the correspondence constraint here must govern the order of material. Such a constraint falls under Linearity constraints, which McCarthy and Prince (1995) introduced to account for restrictions on metathesis. I will call such a constraint $\text{Max(Order)}$:

“...The order of semantic notions in domain$_1$ must be similar to the order in domain$_2$.”

These domains are either Output-Output, or Input-Output. In the first case, the constraint says that there must be as little variation between various affix orders as possible. That is, in all Outputs a similar order of affixes must be realised. In the second case, the constraint says that deviations from the ideal affix order should be avoided.

### 3.3.5 Summary

In Table 3.1 the Principles of section 2.1 are given in the left column, while in the right column the corresponding OT constraints are shown.

**Table 3.1 Morphological Principles in the OT model**

<table>
<thead>
<tr>
<th>Morphological Principles</th>
<th>OT constraints</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Economy</strong></td>
<td>Markedness constraints; e.g. *[Pers, Pl], *[ObjAgr]</td>
</tr>
<tr>
<td><strong>Transparency:</strong></td>
<td>Faithfulness constraints:</td>
</tr>
<tr>
<td>No Fusion</td>
<td>MaxMorph(X) constraints, e.g. Max(Pers)</td>
</tr>
<tr>
<td>No Fission</td>
<td>DepMorph(X) constraints, e.g. Dep(Pers)</td>
</tr>
<tr>
<td>No Allomorphy</td>
<td>OO-Faithfulness constraints, Optimal Paradigm Theory</td>
</tr>
<tr>
<td>No Homonymy</td>
<td>OO-Faithfulness constraints, Optimal Paradigm Theory</td>
</tr>
<tr>
<td>Isomorphy</td>
<td>Max(Order) constraints</td>
</tr>
<tr>
<td>Morphological Principles</td>
<td>Feature Hierarchy; Lexical Templates; OO-Faithfulness constraints, Optimal Paradigm Theory</td>
</tr>
</tbody>
</table>

### 3.4 Language change

Knowledge of a language consists of language-specific lexical knowledge and constraint ranking. In addition, each language user has universal cognitive capacities and universal language capacities like the EVAL and GEN functions. When we compare two stages of a language, in other words, when we examine language change, we must look for the constraints that have been reranked and the modifications that have taken place in the lexicon. My focus is on morphological change, particularly on inflectional changes from Type 1 to Type 2 languages.
Constraint reranking can be illustrated with Scandinavian. In Old Norse the tableau for plural 1st person verbs may be schematically depicted as in Tableau 3.3 (cf. section 5.2 for a more detailed description).

**Tableau 3.3 Input: Old Norse dom-? Judge+PRES+IND+1+PL**

<table>
<thead>
<tr>
<th>døm-? Judge+PRES+IND+1+PL</th>
<th>Max(Pers)</th>
<th>*[Pers, Pl]</th>
</tr>
</thead>
<tbody>
<tr>
<td>døm-a PL (+PRES, +IND)</td>
<td>**</td>
<td></td>
</tr>
<tr>
<td>døm-um 1 + PL (+PRES +IND)</td>
<td>![</td>
<td>![</td>
</tr>
</tbody>
</table>

In Faroese the filter constraint *[Pers, Pl] was promoted above Max(Pers), which resulted in Tableau 3.4.

**Tableau 3.4 Input: Faroese dom-? Judge+PRES+IND+1+PL**

<table>
<thead>
<tr>
<th>døm-? Judge+PRES+IND+1+PL</th>
<th>*[Pers, Pl]</th>
<th>Max(Pers)</th>
</tr>
</thead>
<tbody>
<tr>
<td>døm-a PL (+PRES, +IND)</td>
<td>![</td>
<td>**</td>
</tr>
<tr>
<td>døm-um 1 + PL (+PRES +IND)</td>
<td>![</td>
<td>![</td>
</tr>
</tbody>
</table>

In Faroese not only -um-, 1PL was replaced by a, but also 2nd and 3rd plural -ud and -id were replaced by -u, and -a. This change is the result of reranking of morphological constraints, because it makes no sense as a lexical replacement or a phonetic change, when not taking the morphological feature specifications into account. The three suffixes that were lost all had a specified feature for person in the plural, while the Faroese suffixes are not specified for person. This implies that the operation of loss or removal of the suffixes was directed at this feature specification. In other words, it was a new restriction on the feature specification that caused the loss, which is, in OT terms, the promotion of the specific markedness constraint in the tableau, *[Pers, Pl]. In this example, constraint reranking must have happened first, and only later had its effects on the construction of the lexicon. This later step is taken by a next generation of language learners. While the earlier generation may retain the lexical item in memory, though it does not surface anymore, the new generation simply does not learn the affix anymore.38

An example of lexical change is found in Ecuadorean Quechua, where the plural marker -ku disappeared. This was probably not the result of an earlier constraint reranking because there are no other changes in the grammar that would suggest reranking. We could propose constraint reranking, but that would boil down to the reranking of a constraint that would only refer to this particular affix, -ku, since other plural markers, like -cis are still present in Ecuadorean Quechua.

These two kinds of change, constraint reranking, and lexical changes, are related. Constraint reranking leads to a different Output, and since this Output is the basis for lexical acquisition by new learners, the lexicon changes also. In the Scandinavian case above the suffix -um did not surface anymore, since its semantic specification was 1Pl, which in Faroese is always prevented from emerging, because of the promotion of *[Pers, Pl]. When new learners do not hear this affix anymore, -um will disappear from

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38 Of course, this later step is not univoically taken by a particular generation in a speech community. Knowledge of older stages, and of other varieties may still be present though the affix in question is not productively used anymore.
Language change

the language. Consequently, when there is no trace of -um, and since there are no other candidates to slip through the upper ranking constraint LEX, and also violate *[Pers, Pl], there is no longer any evidence for the mutual ranking of *[Pers, Pl] and Max(Pers). When the ranking of a constraint cannot be determined, because there are no lexically approved candidates that could violate the constraint, I call such a constraint ‘floating’. It floats freely in the constraint hierarchy, and only when there are new lexical items, with a proper feature specification, may the constraint receive a ranking again. In the case-studies below we will see that this is a common path of change: first, promotion of ‘simplifying’ or ‘Type 2’ constraints that prevent lexical items from surfacing; second, reanalysis of the lexicon leading to loss of these lexical items; third, floating of the constraint in question; and fourth, a new affix may be introduced that captures the constraint ranking again.

From this perspective constraint rerankings and lexical changes alternate. Moreover, it is not always clear whether a change in the Output is due to a lexical change or to a constraint reranking. When there are several lexical changes in the Output that could be explained by one constraint reranking, it is clear that reranking is involved, as in the Faroese case above. On the other hand, when one new lexical item would need a battery of constraint rerankings, more plausibly a lexical change is involved. In many cases, however, both an explanation in terms of the lexicon and in terms of the grammar is possible. For instance, in Katanga Swahili several tense markers were lost, but it is not clear whether a constraint that forbids ‘non-salient’ TMA markers has risen or whether only lexical items were lost.

In section 2.5 I predicted with respect to Type 1 and Type 2 speech communities that the following changes would occur with respect to the principles:

**Economy:**
- Agreement will be replaced by other means that express syntactic relations, although relics of agreement may linger on when these other means are already present.
- Other inflectional categories especially tense, aspect and mood are also under pressure to disappear, though less heavily.

**Transparency:**
- Accidental homonymy is under pressure to disappear in both types, but even more so in Type 2. It may be replaced by structural homonymy.
- A Type 2 language will become more transparent: in particular there will be less allomorphy and fusion.

**Isomorphy:**
- With respect to Isomorphy the picture is somewhat diffuse, though Type 2 languages may tend to be more isomorphic.

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39 In fact, this disappearance can be quite gradual. When we assume that lexical items are marked according to how archaic they are, lexical items may disappear by moving to registers that are more and more archaic.

40 This discussion has its parallel in the discussion between the causes of phonological changes. Some changes seem to be “immediately” taking place through a whole grammar. These are purely phonetic changes. Other phonological changes start at a particular lexical item, and possibly spread later through the whole lexicon cf. Wang (1969), and for a parallel in syntax Kroch (1990).
As said earlier, though loss of homonymy and allomorphy play a role in the descriptions of languages below, I hardly discuss them in the OT sections. When summarising the other tendencies in OT terms, we can predict that the following might happen when a speech community turns into a Type 2 community:

- Filter constraints are promoted, approaching the following ideal ordering: *[Agr] >> *[Tense/Mood/Aspect] >> *[Voice].
- MaxMorph (X) and DepMorph(X) are promoted and prevent fusion and fission. Constraints like Max(Cat) and other constraints that favour fused affixes, are demoted.
- Max(Order) may be promoted a little.

In the case studies of Chapter 4 to 7 I use both my own morphological model and the OT model as presented here. In Table 3.2 I show how a description of inflectional change in my model corresponds to a description in OT terms.

In the case-studies below we will see several types of rerankings that lead to the ideal situations mentioned above. First of all, the filter constraints may be ranked on top, which leads to loss of categories. When categories are lost, the possibilities of violating constraints that demand faithfulness with respect to these categories, are also lost. The change in Faroese above is an example of this: the promotion of *[Pers, Pl] prevents fused affixes that violate faithfulness constraints from appearing.

A second way of reranking is found when only the faithfulness constraints are better complied with. This does not lead to category loss. Instead, the categories are more transparently expressed. Examples of such changes we find in Arabic replacement of infixal voice expressions by prefixal voice expressions, and by the loss of complex affixes in Quechua, especially Ecuadorian Quechua. In other cases it is a combination of faithfulness and markedness constraints, that are promoted above complexity-inducing constraints like Max(Cat). An example is Moroccan Arabic, where it is impossible to tell what kind of constraint promotion exactly triggered the change. In Ecuadorian Quechua there is also a kind of conspiracy of several types of constraints that together lead to promotion of both markedness, faithfulness, and isomorphy constraints. Yet another route of reranking is found in Swahili, where various faithfulness constraints oppose each other. Swahili varieties in Type 2 communities tend to prefer the type of faithfulness constraint that demands faithfulness to a category which is somehow more transparent or universal. In the Swahili case this means that faithfulness with semantic language universal agreement is preferred above agreement with formal language particular agreement. Finally, economy and faithfulness constraints may oppose each other, and radical Type 2 communities may prefer the promotion of the filter constraints. Examples are found in Nubi and in some aspects of Swahili change.
Table 3.2 Comparison of the model of Chapter 2 and the OT model

<table>
<thead>
<tr>
<th>Model of Chapter 2</th>
<th>OT model</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Sketch of a complex language spoken in a Type 1 community</strong></td>
<td></td>
</tr>
<tr>
<td>1. Morphological language specific principles determine morphological structure</td>
<td>1. The lexicon is not optimised and contains templates, split and fused</td>
</tr>
<tr>
<td>2. Phonological principles obscure transparency between form and meaning.</td>
<td>2. PhonMark &gt;&gt; PhonFaith</td>
</tr>
<tr>
<td>3. Transparency is less important than principles that distort Transparency like</td>
<td>3. Max(Cat) &gt;&gt; Faith(X) &gt;&gt; *[X, Y] //</td>
</tr>
<tr>
<td>those under 1 and 2, but more important than Economy and Isomorphy</td>
<td>Max(Order)</td>
</tr>
<tr>
<td>4. Isomorphy is not so important.</td>
<td>4. Max(Order).is ranked low</td>
</tr>
<tr>
<td>5. Economy plays a minor role</td>
<td>5. *[X, Y] constraints.are ranked low</td>
</tr>
<tr>
<td><strong>Changes when a Type 1 community evolves towards a Type 2 community</strong></td>
<td></td>
</tr>
<tr>
<td>1. Morphological language specific principles disappear</td>
<td>1. The lexicon is optimised</td>
</tr>
<tr>
<td>2. Phonological principles induce more Economy or are overruled by considerations</td>
<td>2. Highly ranked PhonMark constraints induce promotion of filter constraints</td>
</tr>
<tr>
<td>of Transparency</td>
<td>and loss of non-optimal lexical items or PhonFaith constraints are promoted</td>
</tr>
<tr>
<td>3. In combination with 1, 2, 4 and 5, Transparency becomes more important and</td>
<td>3. Max(Cat) is demoted, and in combination with 1, 2, 4, and 5, Faith(X)</td>
</tr>
<tr>
<td>restricts fusion, fission, allomorphy and homonymy</td>
<td>constraints are promoted</td>
</tr>
<tr>
<td>4. Isomorphy may become more important</td>
<td>4. Max(Order) may rise</td>
</tr>
<tr>
<td>5. Economy becomes more important, especially restrictions on agreement, and to</td>
<td>5. Filter constraints rise, especially *[Agr], and to a lesser extent *[Tense],</td>
</tr>
<tr>
<td>a lesser extent on tense, aspect and mood</td>
<td>*[Aspect] and *[Mood] constraints</td>
</tr>
<tr>
<td><strong>Sketch of a simple language spoken in a Type 2 community</strong></td>
<td></td>
</tr>
<tr>
<td>1. Economy is most important</td>
<td>1. Filter constraints rank high</td>
</tr>
<tr>
<td>2. Transparency restricts fusion, fission, allomorphy and homonymy</td>
<td>2. Faith(X) constraints are complied with by optimised lexical candidates</td>
</tr>
<tr>
<td>3. Isomorphy may have risen</td>
<td>3. Max(Order) may also be complied with.</td>
</tr>
<tr>
<td>4. Phonological principles are in line with the form of lexical items and do not</td>
<td>4. Faith-Phon constraints are important, and Faith-Mark constraints have little effect due to the optimised lexicon</td>
</tr>
<tr>
<td>oppose the three universal morphological principles</td>
<td></td>
</tr>
<tr>
<td>5. Morphological principles have disappeared</td>
<td>5. The lexicon is optimised</td>
</tr>
</tbody>
</table>

As discussed above, constraint reranking leads to modifications in the lexicon. In many of the morphological changes discussed here, both faithfulness and markedness
constraints are promoted. These promotions prevent the consequent surfacing of more complex affixes, which are either filtered out because they are not transparent, or because they express categories that are too complex. When these affixes disappear, they are dropped from the lexicon, which means that candidates with these complex affixes fatally violate the top-ranked constraint LEX. This is typical for the changes discussed here: the lexicon is modified in such a way that the candidates that are provided no longer violate high-ranking faithfulness and economy constraints. Candidates that would violate high-ranking faithfulness constraints also violate LEX, in other words, they are not in the lexicon. In OT terms this process of lexicon adaptation can be called an historical form of ‘lexicon optimisation’ (Prince and Smolensky 1993: 192). Kager writes (1999: 33): “In terms of constraint violations, this strategy [of lexicon optimisation, WK] has the advantage of minimizing the violation of faithfulness, as compared to any other hypothetical inputs producing the same output.” Now, the avoidance of complex affixes that violate LEX in favour of other affixes has indeed the advantage that fewer faithfulness constraints are violated. In Kager (1999: 32ff.) lexicon optimisation is described as a method in language acquisition by which the child hypothesises which Input should be given a definite Output. On the basis of the Output alone numerous Input forms could be proposed by the child, since many Input forms relate to the same Output form. For instance, presupposing that in English there is a high ranked phonological markedness constraint that says No Clicks, a child could propose two Input forms for a given Output form: one with an added click and one without this added click. Both Inputs lead to the same Output. Now, when a child builds up a lexicon, the idea of lexicon optimisation is that the lexicon retains, out of all possible Input forms, only the Input form on the basis of which the winning candidate violates least faithfulness constraints. Therefore, the Input form with the click loses from the Input form without the click, since the winning candidate -without the click- will be closer to, or violate less faithfulness constraints with respect to the clickless Input form. In language acquisition lexicon optimisation is a process that reduces a possibly infinite lexicon to an optimised finite subset. In language change the child learner does the same. However, when we compare two stages of a language, where in the later stage constraints have been reranked, (historical) lexicon optimisation can be said to modify the earlier lexicon.

An historical example of lexicon optimisation is the disappearance of fused affixes in Arabic. In Classical Arabic high-ranking Max(Cat) forced fused affixes to surface:

### Tableau 3.5 Input: Classical Arabic FEM.PL

<table>
<thead>
<tr>
<th></th>
<th>LEX</th>
<th>Max(Cat)</th>
<th>*[Fem]</th>
<th>Max(Num)</th>
</tr>
</thead>
<tbody>
<tr>
<td>na, FEM+PL (fused) ←</td>
<td></td>
<td></td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>u, PL</td>
<td></td>
<td></td>
<td>!</td>
<td>!</td>
</tr>
</tbody>
</table>

Later in some varieties of North African Arabic, when faithfulness constraints, Max(Num) and filter constraints, *[Fem] were promoted above Max(Cat) the outcome was as follows:

### Tableau 3.6 Input: North African Arabic FEM, PL

<table>
<thead>
<tr>
<th></th>
<th>LEX</th>
<th>*[Fem]</th>
<th>Max(Num)</th>
<th>Max(Cat)</th>
</tr>
</thead>
<tbody>
<tr>
<td>na, FEM+PL (fused) ←</td>
<td></td>
<td></td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>u, PL ←</td>
<td></td>
<td>*!</td>
<td>!</td>
<td>!</td>
</tr>
</tbody>
</table>
Now, since the fused affix -\textit{na}-, no longer appears at the surface, the lexicon is reanalysed, and -\textit{na}- is removed from the lexicon, which gives rise to the following tableau:

**Tableau 3.7 Input: North African Arabic \textsc{fem.pl} (reanalysis)**

<table>
<thead>
<tr>
<th>LEX</th>
<th>*[Fem]</th>
<th>Max(Num)</th>
<th>Max(Cat)</th>
</tr>
</thead>
<tbody>
<tr>
<td>\textit{na}, \textsc{fem}+\textsc{pl} (fused)</td>
<td>*!</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>\textit{u}, \textsc{pl}</td>
<td>*</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

In Tableau 3.7 I crossed out the candidate, \textit{na} \textsc{fem}+\textsc{pl}, because it is not in the lexicon anymore (and therefore violates LEX). This last tableau shows that all candidates that pass LEX also pass other high-ranking constraints. In other words: an optimised lexicon provides candidates that violate fewer high-ranking -faithfulness- constraints than a non-optimised lexicon. The intuition behind lexicon optimisation is that in the lexicon there are only items that minimally violate the constraints. Candidates that would violate high-ranked constraints already ‘crash’ because of LEX. The delegation of this crashing from high-ranking faithfulness constraints to the LEX constraint is lexicon optimisation. The lexicon becomes optimal, because it comes ‘closer’ to the actual Output. The result of lexicon optimisation is constraint floating. In the example above, we can no longer decide what the order of *[Fem], Max(Num), and Max(Cat) is. When constraints are floating, they no longer forbid forms which used to be blocked by these constraints. As discussed above, when constraints float, categories they caused to disappear from the language in an earlier stage, can be reintroduced again. In Arabic we will find examples of such a cycle.

Another example of lexicon optimisation is found in Swahili. While in Arabic the lexicon was optimised \textit{as a result of} constraint reranking, in Swahili borrowed nouns are optimised \textit{in order to} comply with the Swahili constraint order. In Swahili nouns belong to a noun class on the basis of their semantics and on basis of their form. When form and meaning correspond with each other, noun class assignment is without problems. However, in Swahili many nouns were borrowed from Arabic, which initially did not have such a correspondence between meaning and form. Therefore these nouns violated constraints where noun class membership was important. However, several nouns were modified in their form in order to violate fewer of these constraints, which is a form of historical lexicon optimisation (cf. section 7.6.2).

In the case studies in Chapters 4 to 7, I will show how this lexicon optimisation interacts with constraint reranking. In one of these case-studies, Southern Quechua, we will see that it is not only loss of affixes that may optimise the lexicon, but also an extension of an affix.

Another theme that recurs in the OT sections below is the interaction of phonological and morphological constraints. Often the modifications in morphology first occur in contexts where the phonological effects of the modifications are minimal. When two affixes conflate in their phonological form, a modification and reanalysis of their content is expected sooner than when affixes are dissimilar. Especially in Scandinavian and Arabic morphological reductions take place first in phonologically opaque environments. Complexities that obscure transparency in Scandinavian are found in the stem vowels, and in the inflectional endings. Now, since the unstressed inflectional endings are conflated in Scandinavian and not the stem internal vowel contrasts, it is in the endings
that morphological reductions primarily take place. However, this does not imply that such phonological erosion automatically leads to loss of categories. Morphological change depends on the type of language, and it is, though obscured by phonological changes, still led by morphological considerations, as in the example from Faroese above (cf. also the discussion on the Najdi Arabic path of loss of internal voice distinctions.) Scandinavian and Arabic in this respect oppose Swahili and Quechua. In these latter two languages most morphological changes seem quite independent from where the phonologically ‘weak spots’ are found.41

In the history from Old Norse to Icelandic a constraint, *[1, Sg]*, was slowly promoted. In the oldest sources it does not hold, since a 1SG affix is still found. Later during a considerable period of time the affix seems optional with shifting conditions of occurrence. We can propose an OT model with the possibility of slow gradual promotions of constraints by assuming that the distance between constraints is variable, and that constraints may also partly overlap (cf. Boersma 1998).

Another form of continuity is the way constraints sometimes are promoted: for instance, we may propose a general filter constraint, *[Pers]*. When we consider the change from Old Norse to modern Norwegian, this filter has risen above faithfulness constraints, Max(Pers). However, when we take a closer look at Scandinavian it becomes clear that *[Pers]* is promoted step by step. Subconstraints of *[Pers]* like *[Pers, Pl]*, and *[Pers, Subj]* are promoted first. This implies that a constraint like *[Pers]*, when it is ranked low, as in Old Norse, can be considered as an unspecified general constraint, of which the specific architecture and subconstraints, only becomes visible under change. In Quechua as well, we will see that the mutual ordering of several Max(Pers) constraints only becomes visible after some peculiar changes in Bolivian Quechua.

So far I have suggested that constraint reranking in Type 2 communities entails lexicon optimisation, in which the lexicon tends to contain only those items that violate faithfulness constraints the least. Type 2 languages would differ therefore from Type 1 languages because each would have both a different constraint ranking and a different kind of lexicon. Now we may ask whether optimisedlexicons always belong to a Type 2 like constraint ranking. The answer is no. The combination of a complex lexicon -with fused morphemes, allomorphy, etc.- and a Type 2 like constraint ranking is certainly possible. However, the complex items of the lexicon would not surface in the Output of the OT grammar, and in a next generation an optimisation of the lexicon could be expected. This combination is feasible, however, in cases where a Type 2 grammar is parasitic on a lexicon used in other (Type 1) contexts. For instance, baby talk or foreigner talk could be considered as temporary manipulations of constraints rankings that do not affect a possibly complex lexicon. Another possibility is a simple lexicon,

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41 However, when we assume the alternative model for fusion I described in 3.3.3.1 - where the violation of MaxMorph(X) constraints depends also on the phonological form in which X is expressed - then the emergence of phonologically weak spots is also part of the morphologically led change. That is, the emergence of phonological opacity would already be controlled by the MaxMorph constraints. In such a model, still a reanalysis has to be made by the child learner who hypothesises about the Input, and thereby promotes filter constraints. I assume, instead, that changes induced by phonological weak spots are not triggered by ‘too many’ violations of such an alternative version of MaxMorph, but triggered by reanalyses of possible Inputs, given definite Outputs.
Language change

without affixes that violate faithfulness constraint, together with a Type 1 constraint ranking. However, a Type 1 kind of constraint ranking is only proposed by a language learner when there has been some evidence in the Output for this. In other words, a Type 1 constraint ranking must be based on an earlier confrontation of a child with complex Output. Bilingualism may correspond to this combination: when one constraint ranking is used for processing lexicons of different languages, one of these lexicons may be a Type 2 lexicon. The high-ranking Type 1 like constraints may run in this case superfluously for the Type 2 lexical items.

In conclusion, I have argued that OT can be used to model changes in inflectional morphology, and that complexity and simplification, as defined in 1.2, can be described with the help of OT. In order to do so, I have discussed various OT mechanisms. In 3.2 I have introduced Hasse diagrams, which are better suited to depict non-linear constraint orders than standard Tableaux. In 3.3 I have divided the OT constraints into several constraint families: some relate to Input-Output relations, others only to the Output, some to morphological categories, others to phonological features, and one, LEX, to the lexicon. In 3.3.2 I have discussed the composition of these constraints, and their mutual relations in constraint hierarchies, while in 3.3.3 I discussed OT mechanisms that may be helpful to account for paradigmaticity. In Table 3.1 I have shown how the various kinds of OT constraints relate to the inflectional principles of section 2.1. In 3.4 I have argued that lexicon optimisation may be used, not only to model child language acquisition, but also to model language change from one generation to the next. In that section I have also showed how inflectional change can be modelled in terms of OT, and how different kinds of constraint promotion and lexicon optimisation can distinguish between different kinds of simplification. In sections 4.7, 5.7, 6.6, and 7.6 I describe various cases of simplification in terms of OT in more detail.
4. Arabic

In this chapter I will examine whether the proposed model functions when using facts from Arabic. The ancestor of present-day Arabic was spoken in a well-defined area in the Arabian Peninsula, namely in the desert region north of the present-day state of Yemen, and south of the Fertile Crescent area of Jordan and Iraq. In the 7th century several groups, often called tribes, on this peninsula were united, and subsequently an empire arose that expanded its territory over a large area of the Middle East and North Africa under the flag of Islam. This expansion brought both Islam and the Arabic language to new territories. In the new lands Arabic evolved into different varieties, which are not always mutually comprehensible. Here I will examine the question of how the new forms of Arabic are related to the socio-linguistic history of their respective speech communities.

For this purpose I have chosen three modern varieties of Arabic with which to compare the verbal inflection of Classical Arabic. However, first I will discuss the emergence of the Arab people and the Arabic language, and then examine what the precise form of Arabic was from which the modern varieties developed. This latter issue is a question under dispute (cf. Versteegh 1997; Zwettler 1978), and important for the understanding of later Arabic history. The Arabic variety that was spread may have been Classical Arabic as it is represented in the Koran, but it may also have been a more colloquial form of Arabic, or a military koiné which arose during the expansion. I will discuss the different perspectives on Arabic during the time of the rise of Islam in 4.1. There I will also discuss the general extra-linguistic history of Arabic, which is mainly the history of the Arabic Empire. Finally I will focus on the histories of the varieties I have selected here. After the historical sketch, I will turn to the Arabic varieties themselves; first of all I will present the data and analysis of the variety to which I compare the other varieties, that is, Classical Arabic. In 4.3 I will discuss a conservative form of Arabic, that is, Najdi Arabic, which is spoken in the Arabian heartland by both the original Arab population, both settlers and nomads. Among the various Najdi varieties I have selected the dialect of the northern Najdi Shammar tribe, since this is a tribe which has led a relatively isolated life, in a relatively tight-knit community even by Najdi Arabian standards. Moreover, there are relatively ample data on this dialect, collected by Ingham (1982, 1994). In 4.4 I will discuss Moroccan Arabic. This variety is the most problematic of the three varieties discussed here. It is rather distinct from Classical Arabic, but how it changed is unknown. I will focus on the koineised city dialect of Fez, since this is a prime example of an Arabic variety which has had considerable language contact and which has been used as a lingua franca. Section 4.5 focuses on Nubi. This is a creole, which has Arabic as its lexifier. It came into existence in Sudan in the 19th century, and has typical creole characteristics, with respect to its structure as well as to its emergence. In 4.6 I discuss several scenarios proposed for the history of the Arabic varieties. Some authors, like Versteegh (1984) claim that there was initially a rapid change with subsequently a slow change.

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42 I will use the term ‘tribe’ for a culturally and socially distinct group, as is done in arabist literature (cf. Kurpershoek 1995).
in Arabic and the Arab people

Arabic belongs to the Semitic languages, and since the 1970s these are considered to be part of the Afro-Asiatic language family, together with subfamilies like Berber, Chadic and Cushitic, which comprise languages like Tamazight, Hausa and Somali. Semitic is typologically distinguished by a clustering of features like tri-consonantal roots, glottal consonants, paratactic constructions, and verbs consisting of roots with one prefix and one suffix in the imperfect. A subgrouping in the form of a traditional tree diagram can be composed neither for Semitic among the subfamilies of Afro-Asiatic, nor for Arabic among the Semitic languages. Versteegh (1997: 10) writes:

"Unlike the Indo-European languages, spread over a wide area and usually isolated from each other, the Semitic languages tended to be confined to the same geographic area (Syria/Palestine, Mesopotamia and the Arabian desert) and were often spoken in contiguous regions. This led to more or less permanent contacts between the speakers of these languages, so that borrowing between them was always a possibility. Borrowing typically disrupts historical processes of change and makes it difficult to reconstruct the original correspondences between the languages involved."

The classification of Arabic therefore remains mainly typologically and geographically motivated, and the tree diagram of Figure 4.1 is only meant to give an approximate overview.

On the basis of the clustering of shared features, that is, shared innovations and shared retentions, east Semitic -Babylonian and Assyrian- is distinguished from a West Semitic group, which comprises a southern and a northern group.
The southern group consists of Ethiopian languages like Amharic and Tigre, and of languages spoken in the southern part of the Arabian Peninsula, like South Arabian. The northern group comprises Hebrew, Phoenician and Aramaic. Typologically and geographically, Arabic occupies a position between these two groups. In older works Arabic was classified as a southern Semitic language, but Hetzron (1976) adduces arguments for a grouping amongst the northern languages. Since then the discussion continues (cf. Cuvalay-Haak 1996: 5; Versteegh 1997: 21). The position of Arabic between the two poles is often explained in a historical scenario in which the speakers of Arabic hold an intermediary position between the southern and northern Semitic peoples. Such a position is at least attested for a later period when Arabs recurrently changed from a nomadic life to a sedentary life and vice versa at the fringes of the Arab Peninsula.

The splitting and subsequent mixing of the various languages in the Semitic sub-branches is conjectured to have started from about 1,000 BCE (cf. Versteegh 1997: 12). At that time a nomadic population had come to live in the Arabian Peninsula. These nomads probably had detached themselves from a sedentary civilisation. This so-called bedouinisation was made possible thanks to the domesticisation of the camel, which allowed the Arabs to cover larger distances on a higher speed than before. After some technological advances like the invention of a saddle and a saddle-bow, these nomadic bedouins gained importance in the region. They were called Arabs, and, according to the scattered evidence, spoke a kind of Arabic. These nomads traded along the caravan routes through the desert between the north and south. Their power and influence depended on the events in the northern Empires of the Persians, and of the Romans, followed by the Byzantians, and in the southern Empires, such as the 3rd century Himyar, in the present-day state of Yemen. Many Arab tribes were allied to one of these empires, which influenced the Arabs in their culture. For instance, ideas about monotheism, which prevailed in the north in the 4th century, were taken over by the Arabs, although the heart of the Arabian Peninsula, with Mecca as its main commercial centre, remained unaffected. The Arabs grew in power between 400 and 600 CE, because of the fall of the South Arabian Empire, and the constant fighting between Persia and Byzantium that weakened these northern states.

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43 I use the neutral terms CE (Common Era) and BCE (Before Common Era), instead of BC and AD.
Before the rise of Islam Arab culture was largely nomadic. Only a few settlements existed around oases. These oases helped to support the nomadic way of subsistence. Nomadism implied that the Arabs lived in small tribes consisting of several clans. The tribe protected its individual members from drought and invasions, and a tribe had historical rights to a well and to pasture land. Pasture, caravan trading and inter-tribal raids were the main sources of income. In contrast with the organisation of later states, the tribes had no hierarchical structure. There were leaders -sheiks- but these acted only as a kind of spokesmen or representatives. The nomads were adverse to any subjugation. There was hardly any significant division of labour or social castes, neither was there an organised form of religion or a caste of priests. Belief in demons and ghosts existed however, and around 600 BCE Mecca had become the religious centre. Expressions of culture were mainly oral, and poetry was highly developed. In the 6th century poetry became even more vital and it gave all Arab tribes some sense of cultural unity and identity, which had hardly existed before. Weiss & Green (1985: 38) says: “Because the literary language of the poets was a standard one used throughout Arabia it, together with the poetry composed in it, fostered a vague sense of cultural unity among the Arabs which could not have existed at the level of everyday tribal life.”

The nomadism of most Arab tribes was diametrically opposed to the lifestyle of the sedentary centres like Mecca. In those settlements differences between the rich and the poor grew. The former egalitarian tribal clans were transformed into a hierarchy of socially and geographically distinct clans in the cities. The Bedouins values of group solidarity and sharing were quite opposite to this social and moral climate. Furthermore, surpluses were built up, and a monetary and tax system redistributed the wealth in the cities. Leadership became stronger with one monarch, and a judicial formal system was introduced. In the cities monotheism became more common than among the nomads. While Mecca flourished as an international trade centre under the direction of the Quraysh tribe, dissatisfaction with this morality grew, and many longed for the former group solidarity of the Bedouin, although they wanted to keep their individualistic city lifestyle. This formed the background to the success and the popularity with which the teachings of Mohammed, the founder of Islam, were received.

Mohammed had been raised in Mecca, and received the holy word of God, the Qur’an from 610 CE onward. The Qur’an was a religiously inspired call for justice, and a call to subjugate oneself to one God, and his Prophet, Mohammed. Its spirit reminded one of the ‘code of the desert’, but it was adjusted to modern life. Weiss and Green (1985: 40) write: “It affirmed an essentially individualistic ethic. Whereas the tribal code had placed the emphasis on the responsibility of the group as a whole towards its own weaker members, the message borne by Mohammed proclaimed the responsibility of each individual under God to act rightly and fairly.” Mohammed first tried to spread this message in his own town, Mecca, but met with severe opposition from richer merchants. Because of this Mohammed fled to Medina in 622 CE. In Medina, a feud had caused dissent, and Mohammed managed to restore peace between the opposing clans. As a bringer of peace and justice Mohammed was accepted and he gathered his followers in the umma, the Muslim community. This caused rivalry between Medina and Mecca, and eventually Mohammed succeeded in conquering Mecca in 630 CE. Control over these two important cities led, through alliances with Bedouin tribes and proselytising, to the emergence of a united Arab empire in the 630’s.
Now the dispersed nomads were united for the first time in history. Weiss and Green (1985: 47) state: “By putting before the Arabs a monotheistic vision of life contained in an authentically Arabian scripture, Islam strengthened the vague self-identity of the Arabs and transformed them into a true people.” On the one hand the Arabs were united by a universal belief, while on the other hand, this belief was given shape by the Arabic language, culture and traditions, and led by ethnic Arabs. Ever since then, this polarity between universalism and arabo-centrism would lead to tensions in later empires and interstate relations. Another problem that led to tensions and conflicts were the differences between southern Arabian tribes and the northern Bedouin warrior tribes.

Another problem, which still exists today, is between the Bedouins and the more settled populations. Although throughout history Bedouins have become sedentarised and vice versa, a difference has always been felt between these two life-styles, especially in northern Africa. Before I discuss the subsequent spread of the empire and the way Arabic changed during this spread I will give an account of the language situation during the earliest period of Islam.

4.1.2 Arabic at the beginning of Islam

Sources from which information about the early form of spoken Arabic is derived are the Qur’an, classical Arabic poetry, and commentaries of early Arabic philologists in dictionaries and grammars as well as descriptive works on the life of Mohammed. These works also laid the foundation for a norm and a tradition of writing in Classical Arabic, which later evolved into modern Standard Arabic. While this development of written Arabic is relatively well known, the exact form of the spoken Arabic of that time remains unclear and disputable. Two positions on the relation between written and spoken language are to be found in literature. On one hand it is claimed by authors like Blau (1973), Nöldeke (1904), Versteegh (1984) and by earlier Islamic philologists that there are no important differences between spoken and written Arabic of that time, while on the other hand it is held that in Old Arabic a cleavage between spoken language and written language already existed which evolved finally into the difference between the modern Arabic varieties and standard Arabic. This latter position is held especially by Corriente (1971), Diem (1974) and Zwettler (1978). Furthermore, there is disagreement about the way and extent the eastern and western dialects differed. Several smaller phonological differences are agreed upon (cf. Versteegh 1997: 41ff.). However, whether the dialects also differed in the inflectional suffixes remains an unanswered question. Now, in this section I will turn to this issue of the occurrence of word-final vocalic case and mood suffixes in the various varieties of Arabic around 600 CE.

Examples of these mood suffixes are given in bold in the following verb forms: ‘she writes (ind.)’, taktabu, ‘that she write’ taktaba. In early Islamic studies it is claimed that Mohammed spoke in the same language, the Meccan dialect of the Quraysh tribe, as that in which the Qur’an was written. This would be the highest form of Arabic. On the other hand, the language of poetry, and its speakers, the eastern Bedouins, were celebrated as preservers of the purest language. In addition, the language of the Qur’an was claimed to be identical to the language of their poetry. This supposed uniformity clearly leads to contradictions (cf. Schipper & Versteegh 1987: 44; Versteegh 1997: 38), because at the same time differences between eastern and western, nomadic and sedentary dialects were acknowledged and described.
Vollers (1906) was the first to propose as a solution to these paradoxes that there was a difference between the form of spoken Arabic around 600 CE and the written form of the Qur’ān. He suggested that the dialects of the eastern nomads and the western sedentarised population differed, and that the western dialects, under influence of the ‘decadent’ city life had already lost some inflections. In its first conception the Qur’ān would have been written in the western vernacular, and would have been standardised later in the more prestigious eastern dialect in which classical poetry had been written. This view on the Qur’anic language has been refuted on philological grounds by Nöldeke (1904) (cf. also Zwettler 1978: 118; Versteegh 1997: 40), who stated instead that although there might have been changes in the spoken language, there would be no reason to assume that the colloquial would differ fundamentally from Mohammed’s writings.

Arguments for supposing a similarity between the speech of, at least, the eastern Bedouins and the written language is also found in reports by early Islamic philologists about the pure unspoilt state of Bedouin speech. These should not be taken at face value, however, according to Zwettler (1978). Versteegh (1997: 50) remarks: “The force of this argument partly depends on the value which we attach to reports about Bedouin purity of speech...Of course, these reports may also be regarded as symptomatic of the generally nostalgic attitude towards the Bedouin past and the desert.” A further argument for a synthetic unchanged state in the spoken Arabic of the time is that there are still modern Arabic Bedouin dialects that display case and mood inflections. However, Zwettler claims that these are only defective vestiges, occurring mainly in idiomatic and poetic expressions and in borrowings from the Classical literature, and adds (Zwettler 1978: 122): “Given this contemporary state of affairs, it is to be wondered whether anyone would ever have considered proposing that the dialectal tanwin had originated in a three-vowel desinential system, had he not previously been aware that such a system had operated in the Classical ‘arabíya.”

Another argument for the existence of inflections in the colloquial language is that in the versions of poetry written down later, remarkably few errors occur. Versteegh (1997: 51) says: “Such forms are usually a corollary of a sharp divergence between a literary norm and a colloquial variety, and their absence would seem to point to a more widespread usage of the case endings than the limited one advocated by the proponents of the ‘poetic koine’ [see below, WK],” but continues, “One could, of course, object that any errors would have been weeded out by later collectors of poetry and copyists anyway.”

Instead of trying to prove the similarity between spoken and written language, Zwettler claims that the language, in which the Qur’ān was written and the poetry chanted was different from the vernacular and he calls this variety a ‘poetic koine’. Koiné, as Zwettler (1978: 101ff.) conceives it, should not be taken as a practical levelled compromise dialect between several dialects. This early Arabic koiné must be understood as a special register in which poetry was performed and in which also the Qur’ān was written. It would have been transmitted orally, and would have contained many archaisms, borrowings, retentions, and dialectisms. Zwettler (1978: 97ff.) produces additional

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44 This is however not a very strong argument. Since the classical sources are available, modern suffixes are justifiably viewed from a different perspective as possible relics from these sources. Analogically, one should not relate the inflectional suffixes of, e.g. modern Hindi and modern Danish, because these can only be related to each other with hindsight from some older sources.
emergence and spread of Arabic

evidence by referring to other languages where such poetic registers existed, as in Greek. The difference between the language of the Qur’an and western dialectal features is explained by stating that Mohammed used this koiné to give his recitations more prestige. By distinguishing a koiné and a vernacular, Zwettler also explains why the modern dialects are all less synthetic than Classical Arabic. According to Zwettler, the modern varieties do not stem from the koiné but from the Arabic vernacular in which the suffixes had already disappeared around 600 CE. For this hypothesis Zwettler adduces evidence from Corriente (1971), who examined the functional load of the case and mood suffixes in Old and Middle Arabic texts and concluded that only in very few cases the inflections had a function in the sentence. For Corriente this means that in the Arabic dialects the erosion of the suffixes was already on its way, while for Zwettler it constitutes further evidence that they had already completely disappeared from spoken language. Zwettler considers the existence of such non-functionalities as more plausible in a variety which serves certain metrical and rhythmic purposes in poetry (Zwettler 1978: 145).

However, the non-functionality of inflectional suffixes does not mean their automatic disappearance. As apparent in e.g. Icelandic, languages are full of non-functionalities, and there are no obvious omni-present forces that reduce language to more functionality. Furthermore, the fact, produced as an argument by Zwettler (1978: 133), that the disappearance of the inflectional suffixes also took place in other Semitic languages, or that they are absent from all modern dialects still does not prove that they were already absent from the Arabic of 600 CE as well. In addition, reasons must still be found to account for the loss of suffixes in old Arabic. Moreover, even if the loss of short vowel suffixes had already occurred in Old Arabic, the change from a synthetic to an analytic language form would still not have been explained, because this change comprised quite a bit more than the loss of these suffixes. Long vowel and consonantal suffixes were lost as well (cf. Versteegh 1997: 49, and below). What can be concluded from Corriente (1971) is not a positioning in time, but only that the loss of the vocalic suffixes would not have hampered the language user too much.

Another argument for the loss of inflectional suffixes is found in Diem (1974) who states, on the basis of inscriptions, that already in Nabataean Arabic of the 1st century, the vocalic suffixes were disappearing. However, this cannot be taken as conclusive evidence, since Nabataean Arabic was spoken in a language contact area, and influence from the more analytic Aramaic cannot be excluded (cf. Versteegh 1997: 47). Further arguments for an early loss of the inflections are taken from reports of early Islamic philologists in which errors and mistakes in the inflections are commented upon. This would show that the language was already changing in the early days of Islam. However, Versteegh, (1997: 50) argues that the opposite can also be claimed, when he says: “the point in the anecdotes is precisely that the target language of the newly converted, the language of the Arabs which they wish to imitate, still contained declensional endings.” Finally, intricate arguments pro and contra the existence of inflection in the dialects come from Qur’anic studies (cf. Versteegh 1997: 47ff; Zwettler 1978: 122ff.), which are also inconclusive. Versteegh (1997: 48) concludes that: “The conclusion from pre-Islamic and Qur’anic orthographical practice is that neither can give a definitive answer to the question about the presence or absence of case endings.”
In conclusion, it is generally accepted that a kind of special oral register, or poetic koiné existed in Old Arabic, which was used for poetry. In this register the Qur’an was conceived. The distance of this koiné to the spoken language remains unclear. This continues to be the topic of a complex and as yet inconclusive debate. Holes (1995: 10) states:

“As a special register of Arabic it may have gradually evolved in conditions, and then perhaps become fixed by constraints and conventions, which did not apply to everyday speech, though the question of the extent of the grammatical differences between the poetic idiom in its fully developed form and that used in the everyday spoken Arabic dialects of the seventh century is finally irresolvable given the nature and amount of the data available.”

Therefore, the loss of inflections must have happened some time, but it cannot be linked to specific social or cultural circumstances with any certainty. Other changes will also appear to be difficult to locate exactly in space and time, but, for those changes, to which I will turn below, at least the original situation is known in spoken Arabic of 600 CE. About the relevance of the question discussed in this section Versteegh remarks (1997: 51):

“The general conclusion is that even when some of the changes which Arabic underwent in the post-Islamic period may have been present in pre-Islamic speech, the fundamental structural differences between the Old Arabic of the pre-Islamic period and the new Arabic represented by the contemporary dialects still need an explanation. The emergence of this new type of Arabic in the period of the conquests is characterised not only by the disappearance of the declensional system but also by a complex of other features.”

4.1.3 The spread of Arabic

Arabic spread initially during the expansion of the Arabic Empire in the 7th century. In this section I will first sketch the general social and cultural background of the spreading of Arabic over the new Arab lands, after which I will focus on the individual histories of the communities where Najdi and Moroccan Arabic, and Nubi is spoken.

4.1.3.1 Expansion of Arabic

Here I will briefly describe the history of the Arab Empire focusing on contacts between native Arabic speakers and new learners, and on the network structures for the use of Arabic.

After Arabia was united in 630 CE (cf. section 4.1.1), for the next hundred years the Arabic Empire rapidly expanded its boundaries northwards to Syria and Iraq, eastwards to the river Indus, and finally westwards as far as Morocco and Spain (cf. Figure 4.2). The conditions that fostered this expansion were of several kinds, both demographic, cultural and external-political. Weiss & Green (1985: 58) present the following factors: population pressure, a warrior culture, weakness of the Byzantine and Persian Empire, the presence of Arabs outside of Arabia before the expansion, and the equally uniting and inspiring force of the new religion. In the conquered territories the people were allowed to retain their own religion, and their own way of life. Often the Arabs lived in separate settlements, which were originally military camps, and which later grew into full-blown cities. Arabian rule initially meant that taxes were collected and internal peace was guaranteed in exchange. The administration was often in local hands, and Arabic became the language of administration at the end of the 7th century. During the earliest conquests
Arabs settled mainly in newly founded military camps, but sometimes in already existing cities as well. Between 200,000 and 400,000 Arabs migrated to Syria, which already had a population of about 4 million. Egypt initially only had 80,000 Arabs in a population of 8 million, and the number of Arabs in the whole Maghreb was probably between 70,000 and 150,000, although later, from the 11th until 14th century, about a million Arabs migrated to the Maghreb which had consisted of five million people until then.

In the settlements many Arabs married Jewish and Christian non-Arab women. After 750 CE Arabs were also allowed to migrate to the countryside. Language contact predominantly took place, especially in the beginnings of the conquests, in the cities, in contact situations of taxation, trading and administration. Versteegh (1984: 66) writes:

“The garrison towns that had been founded in the course of the early campaigns grew into large centres of social attraction and civilisation to which people flocked in order to participate in the prestigious new order. Here, the necessity of learning as quickly as possible the language of the new masters was felt acutely; here, too, the polyglot society that is typical of early Islamic urban civilisation developed.”

According to Versteegh (1997: 93), the arabicisation occurred at a faster rate than the process of islamisation, and it was completed earlier. However, for a long period other languages must have been spoken in the Arab lands, such as Coptic, Greek, Persian, Berber, Aramaic, etc. The success and speed of arabisation generally depended on the extent of migration and the measure of assimilation, the process of urbanisation, the pre-conquest contacts with Arabs in the new territories, and the success of Islam (cf. Holes 1995: 28).
The Arabic empire was unstable, and the central power of the Caliph could no longer be sustained after 750, when the empire fell apart. The arabisation and islamisation continued however, especially in the lands adjacent to Arabia. In the following centuries several smaller empires arose and collapsed again because of internal struggles over taxes, and religious issues, and because of external threats. From 1050 until 1350 a slow and steady migration of Arab Bedouins took place westwards as far as Morocco in search of new pasture lands, which meant a second arabisation (see also section 4.1.3.3). From the 13th century until 1517 Turkish Mamluks ruled the central parts of the former Empire, who were succeeded by the larger empire of the Ottomans which lasted until 1600. After 1600 independent states arose, and European powers began to extend their influence to the Arab lands. In the 19th and 20th centuries most Arab countries were occupied by western powers. They became independent states only after the Second World War. In spite of the many differences, there is still a strong feeling of solidarity amongst the Arab nations of today, because of their shared religion and their common language and history.

From earliest times until the age of imperialism, a typical Islamic society existed. It had strong internal bonds in the various Arab lands (cf. Weiss & Green 1985: 145ff.). The Islamic order was sustained by a military force, and it constituted a jurisdiction. In contrast with earlier nomadic Bedouin culture, the Islamic society was strongly city-centered. Islam spread from city to city, and reached the countryside only later. Rural communities were mainly seen as a way of making easy money, and as a consequence agrarian activities lessened during the centuries of Islamic rule. In the cities the neighbourhoods were segregated along ethnic and religious lines, and sometimes also along class divisions. Nevertheless, there was considerable social mobility. The Islamic society was strongly intertwined with the Arabic language, which alongside its religious function, was also used for administration, science, literary culture and all other high culture.

4.1.3.2 Najdi Arabic

An important group in my argument are the Arabs living in the central part of the Arabian Peninsula, particularly the northern Najdi tribes of the Shammar. I will first sketch their background and will then focus on three themes: (a) the contact the Najdi Arabs, especially the Shammar tribe, have had with others; (b) their attitudes with respect to their own language; (c) the homogeneity of their speech community. In the literature different names are used for the regions of Arabia and their people. I will use ‘Najd’ for the central and northern area of the Arabian Peninsula and ‘Najdi’ for the people who live there (cf. also Figure 4.2).

Background

The historiography about the Najdi Arabs is limited and interspersed with prejudices. On the one hand the Najdi Arabs are depicted as the bearers of traditional values like solidarity and hospitality, and of Islamic values like justice and faithfulness (cf. western sources like Musil 1928 and Glubb 1960, and Arabic sources described in Versteegh 1997). On the other hand they are described as primitive, violent, and in need of

45 Cf. Glubb (1960: 30, 37) for a description of Bedouins firstly as children, and secondly as innocent people who have not eaten from the apple of the tree of knowledge (cf. also Said 1978).
guidance from some outside power, either Islam, or European civilisation. After these
caveats about the sources, the following history can be sketched.

As described in 4.1.1., the Arabian Peninsula has been inhabited by Arabs since at least
1000 BCE, that is, since the domestication of the camel. The power of the nomadic
Arabs rose after the invention of the camel saddle, and their control over the caravan
trade on the peninsula increased. In the 7th century the Bedouins converted to Islam, and
under this new banner the surrounding lands were conquered and the Arab Empire was
founded with Medina as its capital. In 661 CE, however, Damascus in Syria became the
capital. While the Arab tribes continued to play their role in the Arabian Empire for
centuries, the heartland of Arabian nomadism itself fell outside the mainstream of Arab
history, especially after the trade routes had changed and trade had decreased in the first
centuries after the Arab expansion. Glubb (1960: 41) says: “Central Arabia, which had
originated this world-shaking movement [that is, the Islamic expansion, WK], returned to
its former isolation.”

Between the 8th and 20th century social life changed little, in a thinly populated area, of
which Glubb (1960: 24) says: “The oases of Nejed [that is, Najd, WK], however,
resembled rather an archipelago in the desert sea, with long bays and creeks of wasteland
running in between one settlement and the next.” Around the belt of oases the desert
stretched out, as far as Yemen in the south, the religious cities in the west, the Gulf coast
states in the east, and the Jordan, Syrian and Mesopotamian cultivated areas in the north.
In these settlements there was agriculture and a little trade. Nomads were also present in
groups of around 600 people. These nomads were camel breeders and traversed huge
distances in search of pasture land. They also visited the lands bordering the desert for
trade purposes, and they were involved in the caravan trade across the desert. Caravans
and settlements were frequently raided by them. There was much inter-tribal warfare, and
in most periods there was no judicial power above the tribal level. Donner (1981: 41)
says: “The tribe was thus not only the basic social unit, but also the basic political
grouping around which relationships of power were ordered - that is, politics was
essentially a question of intertribal relations.” The settlers were dependent on the
protection and benevolence of the nomads, who, being mobile, could easily raid the
settlements without much chances of being harmed themselves (cf. Musil 1928: 257). In
their turn the nomads were dependent on the settlers for water during the dry period in
the summer, and for the purchase of goods (Ingham 1994: 3ff.).

The Shammar, who speak the northern Najdi dialect under examination here, are a
northern tribe, who have lived in the area since pre-Islamic times, although some groups
allied with the Shammar a few centuries later (cf. Sowayan 1992: 7). They probably
expanded their territory in late medieval times (cf. Ingham 1982: 73). In the middle of
the 18th century, Muhammad ibn Abdel Wahhab, who studied in Medina, Basra and
Damascus, founded the Wahhabite denomination, which propagated a religious return to
the Qur’an and the words of the Prophet. This persuasion received support from a local
leader, Muhammad ibn Saud, and gained more influence in the region. In the early 19th
century the Wahhabites conquered the Gulf coast, the holy cities in the west, and
threatened Baghdad and Aleppo in the north. In the 1810s tribes from the lands adjacent
to Najd, and soldiers from Egypt under the protection of the Turks, marched against the
Saudi Wahhabites, and overthrew their regime in 1818. Until 1843 Egypt wielded power
in the region, but then the Saudi’s regained control. In the late 19th century the northern
part of Najd, with Ha’il as its centre, and the Shammar as one of the main tribes, developed its own dynasty under the Rasheeds, who expanded northwards and westwards, and attacked Saudi territory in 1887. From 1887 onward this northern dynasty ruled the whole of Najd, until in 1901 the southern part was reconquered by a Saudi leader. The Rasheeds called for the help of the Turks, and these suppressed movements of unrest in the early 20th century, but soon left the country again. Bloody competition within and between the dynasties of the Saudi’s and the Rasheeds continued in the 1900s. Various alliances were made between the imperial powers of Britain and Turkey, the Rasheeds, the Saudi’s, and the western shareefs of Mecca. The Saudi’s began to propagate settled life instead of nomadism, and tried to stop the culture of raiding. They managed to establish their power further in 1921. The political relations in the region in the 1920s and the religious strife of the Saudi’s made it also possible to subsume the religious cities into the new Saudi state. In 1932 Saudi Arabia became a fully independent monarchy.

In the 1930s economic depression threatened internal stability, but in the decades after World War II the economy prospered again, when the Saudi’s succeeded in controlling the oil fields (cf. Mejcher 1991: 486). Tribes started to communicate more with each other, and koineisation of Arabic occurred on a super-tribal level in the capital city, Riyadh, cf. Ingham (1994: xii): “…the emerging standard avoids certain local features so that in fact Riyadh Standard speech is approaching the nature of a Koine so that if a standard does emerge, it may be rather less Najdi in nature than the dialects of the other towns of Central Najd.” I will however, no longer discuss these developments, since the Shammar variety of Najdi Arabic I describe here is the traditional variety spoken by the older inhabitants of the northern Najd.

Social factors

It should be clear from the sketch above that the northern Najdi have not always lived in complete isolation from outside influence. Settlers sent out caravans to Mesopotamia, Syria and Egypt, while the nomads themselves could also be found in the centres of trade on the fringe of the Arabian Desert. On the other hand, traders, and certainly pilgrims, must have passed through Najd for centuries, and at least some traders would have settled permanently in the larger towns of Najd. In the 19th century Ha’il, the major town in the northern Najd, and the centre of the Shammar tribe comprised about eighty families of merchants, out of a total of 4,000 families, who hailed from an-Negēf in Irak (cf. Musil 1928: 253). Although these merchants may have been richer than the other settlers, their way of life, or their speech did not have a higher prestige than that of the native Najdi Arabic speakers. According to Kurpershoek (pers.comm.) the Najdi considered themselves the best, especially with respect to their language.

Najd has never been tempting for invaders, and, larger mass migrations and revolts seem to have left Najd untouched, cf. Glubb (1960: 26). Instead of migrations into Najd, the direction of movement has always been outwards. The Arabian heartland has been the source from which people, and cultural and linguistic traits, spread through the surrounding lands (cf. Johnstone 1967: xxiii). Several sources describe how in earlier as

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46 The economy of Saudi Arabia before the oil boom depended largely on the large numbers of pilgrims visiting the holy cities. Mejcher (1986: 472) mentions the number of 116,000 pilgrims for the year 1930.
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well as more modern times former nomads settled along the Euphrates and the Gulf Coast. Ingham (1982: 14) says: “…the important point from the linguistic point of view is the existence of a continuous process of nomadic population movement northwards through Arabia to the Syrian bádiya area” (cf. also Musil 1928: 316ff.). Population pressure has been seen as one of the factors stimulating the spread of the Arabs in the 7th century. The opposite movement, settlers from outside of Arabia becoming nomadic on the Arabian Peninsula, is not reported in modern times.47

Although there were no mass invasions from outside Arabia, there have been a substantial number of African slaves on the Arabian Peninsula. They were effective in securing the life and the ruling of the local leaders, since they had no relatives or interests to share with nomads or settlers. They were, therefore, generally feared and avoided by the population, cf. Musil (1928: 303). These black slaves must have learned Arabic as a second language, or Najdi Arabic as a second dialect. Because of their low status, and their restricted contact with settlers and nomads, they probably have not had much influence on the high status Najdi variety of Arabic.48 Even today, 5,300,000 out of 22,000,000 inhabitants are estimated to originate from abroad (CIA 2000). These immigrants also have a very low status, and there are no reports that they have any influence on Saudi Arabic. However, there has probably been some bilingualism by children with non-Arabic mothers (cf. note 48). Whether such contacts occurred to the same extent everywhere in Arabia remains, however, to be seen. The people of the Najdi region, and some tribes of Iraq are reported to have an ideal of racial purity, and they refer pejoratively to the more mixed coastal population as “non-Arabs” (cf. Ingham 1982: 24).

Within Arabia the tribal based society of Najd stands out as a distinct social and cultural entity (cf. Kurpershoek 1995: 4ff.). Its culture was based on the values of the nomads. Ingham (1994: 4) says: “The values and traditions enshrined in the oral literature of the area is that of the martial clan tradition of the nomads in which hospitality, protection of fugitives and loyalty to the clan emerge as the attributes of the idealized nomad.” Already in the days before the Islamic empire the nomads’ culture was focused on the most easily transportable cultural symbol, that is, language. The Bedouins much appreciated poetry and oral recitations, making use of ancient conventions and an extensive and varied vocabulary, which was not restricted to one segment of society, cf. Kurpershoek (1999: 49). The poems articulated eternal recurring themes like war, desert life, and love. With help of the shared language conventions a sense of unity in space and time was created. The Najdi poetry functions as a standard that is more homogeneous than the different Najdi dialects, and seems to put a break on Najdi Arabic language change.

According to Ingham (1982: 29) there would be a difference between nomads’ and settlers’ dialects with respect to the distribution of isoglosses. Since nomadic tribes either stuck closely together or split suddenly, relations between nomadic dialects can be depicted in a tree structure. Different settler communities, however, remain in contact

47 Ingham (1982: 32) remarks that inside Arabia, however, the boundary between nomadism and a settled life is less sharp.

48 However, Ingham (1982: 30) remarks: “The Dhaif are reputed to be of mixed origin combining Shammar and Central Najdi elements with, it seems, a high degree of ex-slave admixture who moved over to the south Euphrates in the early 19th century” [italics added by WK]. More details on this ‘admixture’ are, unfortunately, not available.
with their closest neighbours longer, and settlers’ dialect relations fit better to a wave model (cf. Ingham 1982: 29). According to Kurpershoek (pers.comm.), however, the dialects in Najd cannot be divided in nomads’ versus settlers’ dialects, neither on linguistic grounds, nor on social grounds since the internal social mobility in Najd has always been high.

Although the pilgrim’s road to Mecca passed Ha’il, contact of the Shammar with the outside world was limited. While other tribes used Syria, Mesopotamia or the Gulf coast for grazing in the summer season, the Shammar used the inner Arabian settlement area around Ha’il (cf. Ingham 1982: 72ff.). The Shammar tribe also stands out because their main town, Ha’il lies at the foot of a mountain range and is considered by them to be impregnable. Therefore, according to Ingham (1982: 15-17), there would have been less migration of tribes in the Shammar territory, and there would have been ample opportunity to build up a more stable community, with stronger ties between nomads and settlers than among other tribes. Kurpershoek (pers.comm.), however, doubts whether the Shammar community is more stable than other communities in the region. The central and southern Najd may contain equally stable communities, but remain unnoticed because little research has been done in this area.

**Conclusion**

- Subsistence has hardly changed among the Najdi Arabians since the days of the early Islamic expansion.
- There has been no abrupt dialect mixing or levelling, but only slow diffusion in the Central Arabian settlements.
- In the trade centres in Mesopotamia, nomads and settlers came in contact with speakers of other Arab dialects and perhaps other languages, but not on a permanent basis.
- In Najd itself most non-Najdi Arabic speakers were only on their way through, for trade or pilgrimage. Some black slaves may have remained longer, but these held a low position in society.
- Najdi Arabic had high prestige as an expression of Arabic nomadic culture. It served as a reservoir from which highly valued oral poetry could be composed and in which old poetry could be preserved. In addition, its close relation with Classical Arabic gives it further high prestige.
- Among the Najdi nomads, the Shammar nomads had fewest contacts with the outside world, because, unlike other tribes, they were not affiliated with settlements outside inner Arabia itself.

**4.1.3.3 Moroccan Arabic**

Now I turn to the history of Moroccan Arabic, and especially to the modern urban dialect of Fez. Although data on this history are rather scarce, especially about the history before the 16th century (cf. Lévy 1998: 18), Fez is a good example of an Arabic speech community halfway between a Type 1 and a Type 2 community.

The Islamic Empire was expanded to the Maghreb (modern Morocco, Algeria and Tunisia) around 650 CE. According to Versteegh (1984: 64), this first immigration wave brought at most 150,000 immigrants to the region. As elsewhere these built military
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settlements, which expanded into new cities. The nomadic Berbers, the original population, were attracted to these settlements to serve as soldiers in the Arab army (cf. Abun-Nasr 1987: 3), and adopted Islam without much resistance. After their conversion they themselves began to spread Islam. Since that time Islam, Arab culture and the Arabic language profoundly influenced the Berbers, and soon Islam was no longer considered as a symbol specific to the Arab people.

Although Morocco was ruled by Islamic Berbers in the 8th century, more thorough-going islamisation and arabisation would not start before the Arabic Sunnite Idris, with support from a Berber tribe, founded a new empire which had Fes as its capital in 809 (cf. Marçais 1961: 182). At the beginning of the 10th century the Idrisite state fell apart, and the north-western Maghreb became the centre of the conflict between the Shiite Fatimids in the east, and the Sunnite Umayyads of Spain. In search of land, and for political reasons, between 1050 and 1300 about a million Arab Bedouins migrated to the Maghreb, which had consisted of only five million people before this invasion (Versteegh 1997: 96). In comparison with the earlier Arab immigrants these groups had a culture that resembled the culture of the Berber tribes, since their nomadic life was closer to Berber culture than the urban life of the earlier Arabs. This large influx of immigrants, and the declining strength of the rulers in Spain and in the East led to an unstable period. In the next centuries the power in Morocco would be seized by three succeeding Berber dynasties (cf. Abun-Nasr 1987: 76-118). At the end of the 11th century the ascetic and militant Almoravids conquered Morocco and parts of Spain. They built many mosques and a new capital, Marrakesh, and they shaped Moroccan culture with elements from Andalusia. In the 12th century another alliance of Berber tribes, the Almohads, came to power and also conquered Spain, and large parts of the Maghreb. They had a more liberal stance on religious affairs, and under their rule North African economy and culture flourished. At the end of the 13th century the Marinids came to power. These were weaker than their predecessors, because the tribal rule became too weak with the growing importance of the cities. In the next three centuries the western plains alongside the Atlantic coast were populated with Arabic speakers (cf. Lévy 1998: 13). In the 15th century the power of the Marinids declined, and the influence from outside powers became stronger. The Ottoman Empire had expanded to Algeria, and Spain had become interested in the North African coast-line to set up support bases for the crusades. In the 16th century Morocco was united again by the efforts of a supra-tribal group, the Sa`diyans. In the shadow of the Ottoman Empire Morocco developed as a prosperous state on the western fringe of the European and African trade routes. At the height of the success of the Sa`diyans, at the end of the 16th century, their state reached as far as Timbouctou in present-day Mali. This empire collapsed because of succession troubles, and in the 17th century profits from trade declined sharply in Morocco because of the rise of the more profitable trade routes by sea. In the second half of the 18th century order was re-established, and trade prospered again in Morocco. In that century many Berbers who had lived at higher altitudes came down from the mountains and

49 One of these reasons was revenge; the Egyptians sent these tribes to the west, to destabilize the Maghreb region.

50 This invasion consisted of two large associations of tribes, the Banu Hilal, and the Banu Solaym, each consisting of further tribes and divisions.
settled in the lowlands. These latter two centuries saw much migration in Morocco because of outbreaks of famine and epidemics. Meanwhile Morocco had developed a strong Islamic identity, and due to struggles and disputes with Christian countries Morocco had closed itself off to Europeans around 1800 (Abun-Nasr 1987: 297). Under economic pressure, this slowly began to change, and several foreign powers were threatening Moroccan independence, which resulted in occupations by Spain and France in 1912. At first there was not much resistance, and the French succeeded in exercising a divide-and-rule policy; they promoted the culture and language of the people who were least threatening at the time: the Berbers (cf. Abun-Nasr 1987: 369). In the 1930s however, several forces in Moroccan society began to resist foreign exploitation. When France’s power was weakened by the Second World War, independence was unavoidable. In 1956 Morocco became a fully independent monarchy. Against resistance the monarchy could maintain power with the support of the rich landowners and the leading military elite. Since independence the government has tried to stimulate a nationalist Islamic ideology and a Moroccan Arab identity to keep the various groups in society united, although recently the government has made overtures to the Berber population. Today Morocco is a developing country, with problems like overpopulation, and urbanisation. Its population has grown from 3,370,000 in 1921, to 8,200,000 in 1952, and 30,120,000 in 2000. Other estimates vary considerably. According to Grimes (2002), the literacy rate is between 30 and 50%; an estimated 65% of the population speak Moroccan Arabic, while another 20%, which are Berbers, speak Moroccan Arabic as a second language. The other 15% speak mainly Berber languages: Tamazight, Tachelhit, and Tarifit.

Since the earliest days of Moroccan history there has been a strong contrast between urban and rural life (cf. Abun-Nasr 1987: 11ff.). The first cities under Arab rule were newly founded centres of military activities, trade and administration and were not based on earlier Berber settlements. Fez was the first city of importance in Morocco, and it was the centre in a network of towns. In the 11th century a second important city was built, Marrakesh. It was only much later, when Europe grew in importance in the region, and after Arab tribes had settled in the Atlantic plains, that cities like Rabat and Casablanca became more important. From the 8th century until the time of immigration of the Hilal tribes Arabic was spoken in the cities, while in the countryside only Berber languages were used (Marçais 1961: 186). The majority of the speakers of Arabic in that period is estimated to be of non-Arab descent (cf. Rosenberger 1998: 51). People in the cities were engaged in long-distance trade, military operations, administration, and cultural and religious pursuits. Life in the countryside, in contrast, involved pastoralism, small-scale agriculture, and short distance trade. After the 2nd immigration wave, Arabic spread to the countryside. The relations between the cities and the countryside did not change, however. Only much later, after the 15th century, the balance of power between the tribes and the cities began to change (cf. Abun-Nasr 1987: 206). The city/countryside antagonism was also reflected in religious life; in the cities a more formal mode of Islam was adhered to, while the countryside was always more susceptible to mystic teachings of sufis. In the countryside another contrast arose; the mountainous areas were generally inhabited by Berbers while the plains were the domain of the Arab tribes after 1300 CE. Another important factor for the history of Moroccan Arabic was the presence of other ethnic groups who stayed in, or passed through, the Moroccan cities. Abun-Nasr (1987:
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... says: “Whereas Arabs and Berbers, united through Islam, provided the main ethnic and cultural elements of Maghrebi society, it is important to bear in mind that over the centuries the Maghreb has been a melting-pot of many other ethnic groups and cultures.” For a long time, Andalusian Moslems found their way to the Maghreb. After 1492, Jews fled the anti-Semitic climate in Spain, and in the 16th century everyone who spoke Arabic had to emigrate from Spain. Slaves from south of the Sahara have been taken to the Maghreb since the 9th century. Under the Sa’diyans many mercenaries and about 150,000 slaves from south of the Sahara were drafted into the army. Many traders from other African and European countries have passed through the Moroccan cities. Finally during the age of colonialism there were large numbers of Spaniards and Frenchmen in Morocco. These various forms of contact were not all of the same kind. On the one hand, there seem to have been few Frenchmen who have learned Moroccan Arabic, in contrast with the Berbers. Moroccans, on the other hand, often learned French, while, as far as we know, relatively few native Arabic speakers have learned Berber. These two contact situations correspond to the distinction Thomason and Kaufman (1988) make between borrowing (by Arabs, from French), and language shift (by Berbers, towards Arabic). Concurrent with these observations is the fact that influences from Berber on Moroccan Arabic are mainly of the language shift type, that is, they consist predominantly of phonological and structural influence and less of lexical influence, in comparison with the influence from Arabic on Berber (cf. Lévy 1998: 21, 1996: 133ff.). In conclusion, in the cities Arabic probably had the role of a trade language, learned and used by many Berbers, and also by many Arab and non-Arab traders. Lévy (1998: 13) says: “Eventually the economic and commercial factor, because of necessary contact with merchants coming from elsewhere, is decisive [for the process of arabisation, WK].”

Probably even before the settlement of Arabs in the Maghreb some changes had taken place in Arabic, since the tribes that conquered the Maghreb in the 8th century, and also the tribes that made up the later Hilal migration did not all come from the same Arabic dialect area (cf. Versteegh 1997: 103). The diversity of origins, and the intense contacts eventually had a levelling influence on the modern language. The urban pre-Hilal dialects evolved from a situation with much language learning and bilingualism among Berber speakers in the northern and central cities. The development of most post-Hilal dialects had the pre-Hilal urban dialects as focus point, and later the dialects of the new cities in the western plains. Today it is difficult to distinguish between features that originate from the city dialects from the first Arab immigration, and the Bedouin dialects from the second immigration (cf. Lévy 1998: 23).

In the northern part of Morocco, in the cities and along the roads into the mountain range stretching towards the east an originally pre-Hilal dialect has been influenced by Berber and by Andalusian and post-Hilal varieties blending into a new dialect, spoken by 17% of the mono-lingual Arabic-speaking population (cf. Laghaout 1995: 24). In the eastern and southern desert parts of Morocco post-Hilal varieties are spoken by 8% of the population. These are rather conservative Hilal varieties, especially the Hassaniya dialect.

51 The actual situation was much more complicated. Berbers who speak Arabic also ‘borrow’ from their first language, while Arabs who speak Arabic may also transfer structures from their knowledge of French structures.

52 “Le facteur économique et commercial, en raison du contact nécessaire avec des négociants venus d’ailleurs, est finalement décisif.”
spoken in Mauritania. The largest part of the Arabic-speaking population, 75%, speak the
variety of Hilal descent, which has been thoroughly influenced by language contact and
dialect levelling on the Atlantic plains. This is the variety that I use in my description
below. It is probably not the variety that has undergone most language contact but it has
been best described.

In addition to the influence of language contact and dialect levelling on Moroccan
Arabic, the high status of Classical Arabic has often been adduced as a force that has had
consequences for the development of Moroccan Arabic (Marçais 1961: 179ff.). The
exact role of Classical Arabic in the development of Moroccan Arabic and other Arabic
varieties is unclear. Some authors (e.g. Versteegh 1984, 30ff.) claim that Classical Arabic
was the model towards which the initially pidginised Arabic varieties converged. Other
authors (cf. Diem 1978) assume a gradual slow change away from the Classical language
during which the Arabic varieties would converge into a common direction, but
independent from the Classical norm. In 4.6 I discuss further evidence for these two
scenarios.

There is no evidence that colloquial Moroccan Arabic, as different from Classical
Arabic, has had any prestige in the past millenium. The only form of language considered
to have high value was Classical Arabic. Nevertheless, it could be that Moroccan Arabic
had somewhat more prestige than e.g. Berber languages, since Moroccan Arabic was at
least more related to the Classical language and Islamic culture than Berber languages
(cf. Diem 1978: 145). This could explain its dominance in Morocco over Berber.
However, this can also be due to the status of Arabic as the most important trade
language in North and West Africa. In addition, it is also feasible that Moroccan Arabic
has had some covert prestige (cf. Trudgill 1972). While officially the Classical language
was most important, Moroccan Arabic may have played a role as an expression of
solidarity.

Today Morocco is culturally and linguistically independent (cf. Abun-Nasr 1987: 101,
214). As a political and cultural entity Morocco has been shaped by its specific history;
it geography; the composition of its population; its own school of religious leaders; its
stress on Islamic saints and sufi’s, and its interaction with neighbouring countries.
Moroccan Arabic has however never been used as a symbol of this national identity.
Language policy in the Arab world implies cultivation of the Classical language, and
stressing the pan-Arab identity. On an everyday level the feeling of being a Moroccan
may correlate a little with selecting Arabic features different from other Arabic varieties.
Still, there are no signs that Moroccan identity leans strongly on a diverging trend in its
speech. In fact, ethnic borders hardly correspond to isoglosses among dialects in the
Maghreb.

In conclusion, with respect to the social parameters of 2.2 and 2.3, the situation in
Morocco has been as follows:

- The first Arab settlers, who came to Morocco in the 9th century, became city dwellers,
in contrast to most of the earlier speakers of Arabic.

- In the centuries immediately following the Islamic expansion the majority of speakers
of Arabic were Berber in origin, and the Arab speakers had different dialect
backgrounds.
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- In the cities there have always been lots of contacts with speakers of other languages, especially with Berber, French and Spanish. This happened mainly in a context of trade.
- In a substantial amount of these contacts Arabic was the language of communication, and furthermore many Berbers shifted to Arabic.
- In addition to the vernacular a Classical high-culture language remained. This prestige variety has had some influence on the development of Moroccan Arabic as well.
- Moroccan Arabic has had a very low status in comparison to the Classical language, French and Spanish. However, it is not impossible that it had more prestige than surrounding languages due to its belonging to the same cultural realm as the Classical language.
- Although Morocco has a national identity different from surrounding countries, this identity is not actively supported by a particular language variety.

4.1.3.4 Nubi
The Nubi speech community originates from southern Sudan and was subsequently shaped in Uganda. Nubi has often been considered as a creole language.

In studies of creole languages (cf. Arends et al. 1995) three perspectives are discernible. The emergence and development of a creole can be considered from the perspective of the substrate languages, the superstrate language, or universal processes. From the first view-point the differences between a creole and its lexifier are stressed, and correspondences between the creole languages and the native languages of the oldest speakers of the creole are examined (cf. Boretzky 1988). Adherents of the superstrate perspective stress the continuity between the lexifier language and the creole, and extend methods of dialectology to creole research (cf. Owens 1991). Universalists examine aspects that set off creole languages from both the lexifier and the substrate languages. These aspects are either of a cognitive-linguistic, or a sociolinguistic nature, or both (cf. Owens 1997). In this study I adopt the superstrate and the universalist perspective. My universalist view implies that creolisation is the most radical example of a general kind of language change under particular social circumstances. My superstrate perspective means that I examine the consequences of this radical change for the morphological substance of the superstrate language. Therefore, although Nubi may have non-Arabic structures retained from a substrate language, I will focus on the morphology of Nubi from the perspective of Arabic.

Background
The Arabic expansion in Africa initially left the lands south of the Sahara untouched. In the region south of Egypt, presently called Sudan, southward expansion was blocked by strong states, like the Christian Nubian empire, and by difficult lines of communication (cf. Holt & Daly 1961: 15ff.). However, individual traders from the cities in the west of the Arabian Peninsula (cf. Figure 4.2) came to Sudan even before the rise of the Islam. These Arabs mixed with the east-African population and they were a factor in the early Islamisation and Arabisation of Sudan (Prokosch 1986: 31). In the 14th century the Nubian kingdom had weakened, and from then on the influence of the Arabic speaking
Islamic north slowly extended southwards. In the 16th century the Islamic Funj kingdom was established in large parts of Sudan. By that time Arabic probably already served as a trade language for large parts of the region (cf. Owens 1997: 127). In the early 19th century the Funj kingdom fell, and at the same time Egypt started to expand further southwards. Egypt was motivated to secure the slave and ivory trade, and to find the fabled gold-mines (cf. Holt & Daly 1961: 47ff.).

In the first half of the 19th century Egypt succeeded in conquering the northern half of Sudan. In the southern part, however, independent traders in slaves and ivory of Arab and European origins came to control the area. These merchants established settlements, which grew out into camps with sometimes more than 10,000 inhabitants. By that time pidginised forms of Arabic probably already served as lingua franca in the Egyptian army and in commercial contacts inside and outside the trade settlements (Wellens 2003: 10; Hill 1959: 85). From this lingua franca, as spoken in the southern camps, a variety arose, which would later become Nubi. The name “Nubi” may have been based on the high number of traders and officials who came from Nubia, that is, the arabised region in the north of modern Sudan (cf. Wellens 2003: 24). In the 1870s the Egyptian government wanted to expand further southwards (cf. Holt & Daly 1961: 74ff.). With the help of European and Arab military leaders, and with predominantly local slave-soldiers, the Egyptians gained control over the banks of the Nile river and the settlements on it. This led to resistance on the part of the traders. Several efforts by the traders to resist this Egyptian policy followed, and the upsurge of the Mahdist movement finally broke Egyptian control over Sudan in 1882. The Mahdist victory cut off the lines of communication and supply between the settlements in the south and Egypt. The German leader, Emin Pasha, eventually abandoned the settlements that fell under his command and moved southwards with a large part of the population of the settlements along the Nile. During this journey many higher officials and finally also Emin Pasha himself left the troop of soldiers and slaves and they were replaced by former lower officials. From 1888 to 1891 the troops were left in isolation near the Sudan border with Uganda, until they were ‘discovered’ by the British who were then in need of troops to control Uganda. There were about 10,000 Nubi at that time (Wellens 2003: 21). These were subsequently invited to Uganda to serve as a mercenary army.

Since they had no land in Uganda, and because they were former mercenaries, the Nubi always occupied a special position in Uganda society. During their first decades in Uganda they were regarded as welcome mercenaries for the army. For that purpose they were stationed in the town of Bombo where the army headquarters were situated. They enjoyed special privileges, and a partly autonomous status. In the 1920s, however, fewer Nubi joined the army, and they were replaced by members of local ethnic groups. This loosened the link between Nubi ethnicity and military identity, which became further separated after the army headquarters were moved from Bombo. Subsequently, their special status in society was questioned, and several proposals were made to assimilate them into Ugandan society. These were mostly unsuccessful, and the Nubi remained a separate group. They held a rather conservative attitude that prevented them from taking advantage of modern education, which in their opinion was against the teaching of the Qur’an. Socio-economically they entered the lower end of the spectrum (Wellens 2003: 22). In the 1970s things changed in Uganda, when Idi Amin seized power. The new ideology was both nationalistic, militaristic, and Islamic, and the Nubi found a new niche.
in the society, led by the muslim Idi Amin. After Amin’s expulsion in 1979 many Nubi were accused of collaboration with Idi Amin and were expelled from Uganda. In the late 1980s many of them returned to their country.

The early history had important consequences for the sociolinguistic situation of the Nubi speakers, their network structure, and their language attitudes. I will first discuss the period of the south Sudanese camps, and then the period of the Nubi community in Uganda.

Nubi language contact and network structure in south Sudan

Nubi has its origins in the pidgin Arabic, spoken during the second half of the 19th century in the south Sudanese settlements along the Nile.53 Owens (1997: 139) estimates that the total population of the camps in the southern Sudan was about 60,000, while the rest of the population in the region numbered 190,000. The ethnic groups outside the camps spoke several Nilo-Saharan and Niger-Congo languages, like Zande, Bari, Dinka, Mamvu and Lumbara. These languages are not mutually understandable. The speakers of Arabic in the settlements were traders from western Sudan, and officers and soldiers both from Egypt and from the Maghreb. It is disputed what kind of Arabic was the basis for the pidgin that arose in the camps. According to Heine (1982) it would be a form of Egyptian Arabic, as spoken by the officials from the north, while Owens (1985) argues that western Sudanic Arabic as spoken by the traders was more important. According to Wellens (2003: 25ff., 206ff.) various pidgin and non-pidgin Arabic varieties must have been involved in the Nubi formation process that spanned several decades. Most aspects in which the non-pidgin varieties differ from each other, however, lie outside inflectional morphology and are largely irrelevant to this study.

In the first years of the settlements the proportion of native Arabic speakers was higher, while later the number of slaves and soldiers from the local non-Arab population increased. In 1870, sixteen years after the first camps were established, the percentage of Arabic speakers was estimated to have been between 15 and 25% (Owens 1997: 138). The percentage of native Arabic speakers who ended up in Uganda must have been even lower. On the basis of a census from the German administration in Tanganyika in 1898, Owens (1997) estimates the number of Arabs to be at most 4.5%. This raises two questions: first, why did a form of Arabic become the language of later generations, and second, why was Arabic so thoroughly modified? An answer to the first question is that the speakers of the several local languages did not have any language in common. Local languages were used for intra-group communication. However, a common inter-group language was needed since there were many contacts between members of different ethnic groups, e.g., soldiers took local slaves. Since Arabic was the dominant language and was needed in contact with officials a pidginised form of Arabic became the language of inter-group communication. The answer to the second question lies in the combination of restricted access to Arabic, imperfect learning, and levelling between the several kinds of Arabic spoken. Second language learners of Arabic overwhelmingly outnumbered native speakers.

The relations between the inhabitants of the camps and the local population were bad (Owens 1997: 129). The latter suffered from raids and risked becoming slaves in the

53 However, according to Versteegh (pers.comm.) there is also some evidence that Nubi originates from training camps in the Aswan region (cf. Wellens 2003: 35).
camps. Within the camps there were also several groups. A three-way division can be made between the northern officers, the southern soldiers, and the local slaves (Owens 1997: 143). Local slaves could become members of the soldier group. This did not lead, however, to any solidarity between these two latter groups. The soldier group, in its turn, was looked down upon by the northerners. In addition, soldiers grouped according to their descent. When their origin no longer was a source of distinction, they remained a group of their own. Hansen (1991: 562) says: “The strength of their consciousness as a separate social entity was borne up by the hardships that these military communities sustained for almost a decade.” According to Owens (1997: 144) the emergence of class consciousness among the camp’s inhabitants resulted in the stabilisation of the pidginised forms of Arabic. If so, then this pidgin must have had some status, and apart from being a means of communication, it must have been a symbol of group membership as well. This is plausible since a pidginised form of Arabic may have expressed both Islamic and Arab values and a military way of conduct that distinguished the soldiers from their ethnic origins, as well as their distinctiveness from the higher officials and traders, by its particular pidginised form.

**Nubi language contact and network structure in Uganda**

When the soldiers and their slaves migrated to Uganda, many northerners left. This led to a further separation of pidgin Arabic from its lexifier, colloquial Arabic. The separation was, however, never complete. There have always remained contacts between speakers of Nubi, and native Arabic speakers (Wellens 2003: 29ff.). When children grew up in this environment, they learned pidgin Arabic as their mother tongue, which accelerated the process of nativisation and creolisation of pidgin Arabic. The whole trajectory from a variable pidginised Arabic through a stable pidgin to a nativised creole must have taken several decades (Wellens 2003: 33ff.), as is usual for creoles. The new creole language, Nubi, would become the language of the next generations in the Nubi speech community.

At the same time, a steady stream of non-native Nubi speakers was absorbed into the Nubi speech community. In the first years after their migration from southern Sudan the Nubi continued to raid for women and slaves. This implies that there remained a rather high percentage of second language speakers among them. Another kind of second language speakers were those attracted by the status of the Nubi as soldiers in Uganda, and their relatively comfortable position in society. The number of newly ‘nubianised’ members of the Nubi speech community must have been considerable, since ‘nubianisation’ was treated as a problem when the British government tried to regulate the position of the Nubi in society and to determine the number of ‘real’ Nubi (cf. Hansen 1991: 570ff.). Finally the Nubi language is also used as a language of communication by non-nubianised speakers in the north of Uganda, which is understandable because of the proximity of southern Sudan, where pidginised and creolised varieties of Arabic function as lingua franca’s (cf. Wellens 2003: 34; Owens 1997: 135).

Apart from the relatively large group of second language speakers of Nubi, many Nubi proper have always been bi- or multilingual. The languages they speak vary from English to Swahili, Luganda, Luo and Lugbara, depending on place of residence and social activities. While the Nubi were cut off from access to Arabic when they had just migrated to Uganda, today there is contact with other forms of Arabic, e.g., through education in Arab countries. There is no decreolisation, however, since Nubi speakers are proud of
the Nubi variety and clearly separate it in their speech from other Arabic varieties (Wellens 2003: 35).

The Nubi speech community consisted of about 10,000 immigrants at the end of the 19th century. Today it is not so clear who should count as a Nubi, and the estimates of the number of Nubi in Uganda varies between 10,000 and 15,000, while a similar number is claimed for the Kenyan Nubi speakers. After their arrival in Uganda the Nubi have not always lived in the same region. Periodically they served as soldiers, and after Idi Amin’s regime many fled abroad. However, they have always formed a quite distinct group in Ugandan society. They often live in separate areas in the larger towns, and most of them still live in the former military centre, Bombo. They differ from other groups in Ugandan society because they cannot claim a common geographical or ethnic origin. Therefore they do not fit the traditional label of ‘tribe’ or ‘ethnic group’. However, they have a clear tradition, and a common history distinct from other Ugandan groups. Their morals and values are still characterised by their mercenary history, their religion is a pragmatic form of Islam, and, last but not least, they have their own distinct language, of which they are very proud (cf. Wellens 2003: 35). It has a high status and fulfils an important role in expressing Nubi identity. The religious part of this identity, the loyalty to Islam, however, is also expressed by switching to standard Arabic (cf. Hansen 1991: 578). On the other hand, Nubi often disguise their Nubi identity since they are still associated and frowned upon as collaborators with the Amin regime.

Within the Nubi speech community in Uganda, there are no dialects in the traditional sense, although there is some variation depending on the influences of the other languages spoken by the Nubi. In the north vocabulary and phonology is more influenced by Arabic, while southern Nubi is more influenced by Luganda and Swahili. In southern Sudan pidgin Arabic also remained in use in the 20th century. In Juba, one of the larger towns, this pidgin has gained about 80,000 native speakers and may as well be considered a creole, like Nubi. This variety is called Juba Arabic. It is rather similar to Nubi, but recently it has been more influenced by other forms of Arabic present in Sudan (cf. Versteegh 1993: 72). This has resulted in a range of Arabic varieties between pidgin Arabic and standard Arabic. In 4.6 I will discuss the consequences of the proximity of colloquial Arabic on the morphology of these varieties.

4.1.4 Summary and conclusion

When we compare the histories of the three societies, the speech community of Najdi Arabic stands out as the most type 1 like community. It has all type 1 characteristics: the Najdi speakers form several closely knit small groups who have been isolated for centuries. In this region there have been hardly any 2nd language learners and even 2nd dialect learners, and throughout its history Najdi Arabic has had high prestige, both among its speakers itself, as among other speakers of Arabic.

The Moroccan Arabic speech community has more type 2 characteristics. Its language sprang forward from a similar Old Arabic variety as Najdi Arabic, but it settled in a different region with many second language learners, especially in its formative period. In the history of Moroccan Arabic it has always been used as lingua franca between ethnic groups of various descent, especially Berbers. Moroccan Arabic came also in contact with other non-Semitic languages like French and Spanish. Finally, it had far less prestige than Najdi Arabic.
The Nubi community started as a typical type 2 speech community in the military camps in South Sudan. The Nubi speakers had various unrelated languages as their mother tongue and they learned Arabic initially as a non-native language. In the formative period of Nubi its function was mainly as a medium for communication. Only later when the Nubi speech community became a rather distinct group the language gained more prestige. It was learned as a first language, and became used as a symbol of Nubi identity in Uganda.

In Table 4.1 I have summarised what happened in the various Arabic varieties.

<table>
<thead>
<tr>
<th>Table 4.1 Social factors distinguishing Arabic speech communities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Source language</td>
</tr>
<tr>
<td>Split from the original language since</td>
</tr>
<tr>
<td>Amount of contact between Arabic and other languages</td>
</tr>
<tr>
<td>Reason of this contact</td>
</tr>
<tr>
<td>Time scale of this contact</td>
</tr>
<tr>
<td>Geographically displaced?</td>
</tr>
<tr>
<td>Kind of learners of the language in question during the contact period</td>
</tr>
<tr>
<td>Substrates/ adstrates</td>
</tr>
<tr>
<td>Status of ad/substrate</td>
</tr>
<tr>
<td>Kind of substrate/ adstrate</td>
</tr>
<tr>
<td>Influence of second language learners</td>
</tr>
<tr>
<td>Evaluation by the speakers of their own language during the period of change</td>
</tr>
<tr>
<td>Attitudes by the speakers towards other languages during the contact period (openness)</td>
</tr>
<tr>
<td>Kind of network structure</td>
</tr>
</tbody>
</table>

54 This label may seem artificial. However, I have introduced it to indicate roughly how much time has passed since the change has begun.
4.2 Classical Arabic

The data from Classical Arabic presented here are drawn from the following sources: Holes (1995), de Moor (1995), Stoetzer (1997), Versteegh (1997) and Wright (1896). To render Arabic sounds and letters, and to generalise over Arabic verbs, I use the following common conventions (cf. Stoetzer 1997; Versteegh 1997):

- $C_1$ is the first consonant in the verb.
- $v_1$ is the first vowel in the verb.
- $\^{\ }$ is a glottal stop (or “hamza”).
- $C$ is a pharyngeal voiced fricative (or “ayn”).
- A dot “,” under a letter as in ‘t’ is used for emphatic consonants.
- Underlining, as in ‘t’ indicates interdental fricativisation.
- A tilde as in ‘s’ is used for pre-palatal fricatives.
- The uvular voiced fricative is written as g.
- The abstract phonological entity, represented in Arabic as an alif, is either omitted, or represented as $|\,|$.  

4.2.1 Data

The Arabic verb consists of a skeleton, or root, of usually three consonants, also called radicals. This skeleton can be augmented by affixes and by consonant and vowel lengthening. The meanings of these augmentations are only partly predictable and the augmentations are not fully productive. Although they fall, strictly speaking, under derivational morphology, I will include them here because they are an essential part of the Arabic verb system. The skeletons, possibly augmented, get their flesh from the vocalic aspect and voice infixes, and they are further dressed up by prefixes and suffixes that signal person, gender, number, and mood. Finally object pronominal clitics may be attached verb-finally. For instance, the skeleton $CLM$ means ‘know’, and the augmented causative- skeleton $CCLLM$ means ‘teach’. Imperfect aspect and active voice insertions render $u$-allim. PGN affixation gives e.g. $t$-$u$-$\overline{c}$-allim-$i$: ‘you (2SG.FEM) teach’, and the indicative mood suffix and object pronominal clitic render the complete form: $t$-$u$-$\overline{c}$-allim-$i$-$i$:na-huma: ‘you (FEM.SG) taught them (3MASC.DUAL)’.

Changes took place in Arabic throughout its morphological system, and therefore each separate component will now be studied in more detail. I will investigate the augmentation system, the vocalic aspect/voice system, the PGN-system, the mood system, and the object clitics. After the general outline I will discuss the variations on this major conjugation type, leaving out negation, and indirect object clitics.

4.2.1.1 Augmentations

The augmentations of the root yield ten frequently used ‘verbal morphosemantic patterns’ (Holes 1995: 82ff.), or ‘derived forms’ (Wright 1896: 29ff.), and five patterns

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55 In modern linguistics there is a tradition to abstract away from different morphological patterns. For instance MacCarthy (1982) tries to account for the augmentation pattern and vocalic voice and aspect pattern by adopting an ‘auto-segmental’ analysis in which he does not need to distinguish between infixes and other affixes.

56 I put the skeletons and the augmented skeletons in capitals in italics. I put Arabic forms with voice and aspect infixes, and forms dressed up with PGN affixes in plain italics.
that are less used (Wright 1896: 29). The first unaugmented basic pattern, $C_1C_2C_3$, is
commonest verbs which occurred in the corpus [a large corpus of literary, journalistic,
documentary and school texts. WK] twenty times or more, 224, or just under half, were
pattern 1, with the other nine common patterns (plus quadriliterals) accounting for the
remaining 250 between them.” In Table 4.2 I display the augmentations and the aspect
and voice infixes. The numerals refer to the augmented patterns. The active and the
passive vocalic orders must be inserted in the patterns that follow. I discuss these
derivations below, and the aspect and voice infixes in the next section.

Table 4.2 Classical Arabic augmentation patterns

<table>
<thead>
<tr>
<th>Pattern</th>
<th>Imperfect</th>
<th>Perfect</th>
</tr>
</thead>
<tbody>
<tr>
<td>active</td>
<td></td>
<td></td>
</tr>
<tr>
<td>passive</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>vNCvCvC</td>
<td>nCvCvC</td>
</tr>
<tr>
<td>8</td>
<td>vCtvCvC</td>
<td>CtvCvC</td>
</tr>
<tr>
<td>9</td>
<td>vCvCvC</td>
<td>CvCvC</td>
</tr>
<tr>
<td>10</td>
<td>vstvCvC</td>
<td>stvCvC</td>
</tr>
<tr>
<td>active</td>
<td></td>
<td></td>
</tr>
<tr>
<td>passive</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>tvCvCCvC</td>
<td>tvCvCCvC</td>
</tr>
<tr>
<td>6</td>
<td>tvCv:CvC</td>
<td>tvCv:CvC</td>
</tr>
<tr>
<td>active</td>
<td></td>
<td></td>
</tr>
<tr>
<td>passive</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>vCvCvC</td>
<td>CvCvC</td>
</tr>
<tr>
<td>3</td>
<td>vCv:CvC</td>
<td>CvCvC</td>
</tr>
<tr>
<td>4</td>
<td>v^vCvC</td>
<td>^vCvC</td>
</tr>
</tbody>
</table>

Pattern 2 is formed by doubling the second consonant of the basic form: $C_1C_2C_3$. It
adds the meaning of ‘intensivity’, in action, time, or people involved: $QLT$, ‘kill’ →
$QLTL$, ‘massacre’. It may also have a causative or factitive meaning, as the example
involving ‘teach’ in the introduction above shows.

Pattern 3 is formed by lengthening v1 of the basic form: $C_1v_1:C_2C_3$. A sense of
reciprocity is always implied, and sometimes pattern 3 refers to the attempt to perform an
act, instead of to the performance itself: $QLT$ → qatalahu ‘he killed him’, $Qv:TL$ → qatalahu ‘he tried to kill him, he fought with him’. It also can convert a verb taking an
indirect object into one taking a direct object (Wright 1896: 33).

In pattern 4 a glottal stop is prefixed, which affects the vocalism of the aspect/voice
system by preventing the vowel after $C_1$ in the perfect from appearing (see below). The
skeleton in the imperfect reduces to vCCvC, for instance, $cLM$ ‘know’ → $cLSLM$ ‘inform’
→ $yu:a^\prime limu$ → $yu:Climu$ ‘he informed’. Its meaning is causative, active or transitive, and
it induces an extra actor in the event.
Pattern 5 adds a $t$-prefix to pattern 2 verbs: $C_1C_2C_3 \rightarrow tC_1C_2C_3$. It usually expresses the state into which the object of the action denoted by the second form is brought. Its meaning is often passive,\(^57\) reflexive, or effective. For example, $KSR$ ‘break’(trans) $\rightarrow KSSR$ ‘break into pieces’ $\rightarrow takassara$ ‘it was broken/broke in pieces’, and, \(^57\)$ $LLM$ ‘teach’ $\rightarrow ta'allama$, ‘he learned, became learned’.

Pattern 6 adds the $t$-prefix to third pattern verbs: $C_1v_1C_2C_3 \rightarrow tC_1v_1C_2C_3$. Its meaning resembles the meaning of pattern 3, but its sense is necessarily reciprocal, and it therefore needs a plural or collective subject: $Wv:FQ$ ‘agree to’ $\rightarrow tawa:faqa$ ‘(a group) reached an agreement’.

Pattern 7 adds the $n$-prefix to the basic pattern, and adds a reflexive or middle meaning. $KSR$ ‘break (trans)’ $\rightarrow nKSR$ ‘break (intrans)’. When no prefixed vowels precede this prefix a prosthetic glottal stop and ‘$i$’-vowel are prefixed before the $n$-.

Pattern 8 inserts $-t$ after the $C_1$ of the basic pattern, $C_1tC_2C_3$. When there are no further prefixes, prosthetic ‘$i$’ is prefixed. Its meaning is rather close to the meaning of pattern 5 and 6, and especially pattern 7, and expresses a reflexive, middle or passive sense: $JMC$ ‘collect’ $\rightarrow ^{^5}jtama:Cu$: ‘they assembled together’.

Pattern 9 doubles the third consonant of the basic pattern: $C_1C_2C_3C_3$. It is uncommon, because it only denotes colours and physical defects. The first vowel is weakened and a prosthetic vowel is prefixed, resulting in, e.g. $HMR$ ‘red’ $\rightarrow ^{^5}hi:marra$ ‘he blushed’.

Pattern 10 is formed by prefixing $st$, and a prosthetic vowel, to the basic pattern. Its meaning is the reflexive, middle or benefactive denotation of the meaning of the fourth pattern of the root. $CLM$ ‘know’ $\rightarrow ^{^5}LM$ ‘inform’, $\rightarrow sta'lama$, ‘he got information for himself’.

Pattern 11 is derived from pattern 9 by lengthening the vowel of the second consonant: $C_1C_2v:C_3C_3$. Its meaning resembles that of pattern 9, but is more transitory.

The other three patterns are very infrequent.

In addition to patterns derived from tri-radical roots, there are also several kinds of quadriliteral verbs (cf. Wright 1896: 47ff.), that is, reduplicated bilateral onomatopoeic verbs, verbs derived by an unproductive affixation of a fricative to a triconsonantal verb, denominatives based on nouns with more than three consonants, and idiomatised formulas. Their augmentations mirror the augmentations of the tri-consonantal roots. There are three kinds of augmentations possible: patterns 2, 3, and 4, which correspond to pattern 5, 7, and 9 of the tri-consonantal roots.

4.2.1.2 Aspect and voice

Voice is expressed by the choice of the vowels that fill the consonantal skeleton. Aspect is also expressed by this vowel choice but, furthermore by a specific skeleton structure, traditionally described as rendering two stems. These two stems each trigger a particular set of PGN affixes. I will call the two stems the imperfect and the perfect stem (cf. Stoetzer 1997: 82; Versteegh 1997: 84; Wright 1896: 51, and for further discussion also

\(^57\) This passive differs from the ‘internal’ passive, discussed below, because an agent cannot be implied in this form.
The skeleton of the imperfect in the basic pattern is \( v_1CCv_2C \), and the skeleton of the perfect is \( Cv_1Cv_2C \). In Table 4.3 I have depicted the possible vowel distributions of pattern 1. In this pattern \( v_1 \) remains the same in the perfect and imperfect stem. The relation between the \( v_2 \) of the imperfect and perfect stem is biunique in the passive voice, while the relation between the \( v_2 \) in the active voice shows some phonological variation, but is also dependent on lexical and semantic properties of the verb (cf. 4.2.1.6, and Wright 1896: 57ff.). For example, the imperfect AKTUR ‘read’ has as perfect counterpart KATAB, while AQSAR ‘become short’ has QASUR.

<table>
<thead>
<tr>
<th>Table 4.3 Classical Arabic vowel patterns</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>active</strong></td>
</tr>
<tr>
<td>( v_1 )</td>
</tr>
<tr>
<td>imperfect ( v_1CCv_2C )</td>
</tr>
<tr>
<td>perfect ( Cv_1Cv_2C )</td>
</tr>
</tbody>
</table>

The many-to-many relations between the \( v_2 \) vowels in the active voice imply that the forms of the two stems are not linked to each other in a predictable pattern in all cases. In the augmented patterns the two stems, however, are strictly mutually determined, and have no lexical or morphological allomorphy.

The vowel patterns of the augmented patterns for the perfect stem are (a)-a-a, and (u)-u-i in the active respectively passive voice, where the brackets refer to the extra vowel in patterns 5 and 6 in which a vowel is demanded by the consonantal prefix. In the passive voice of the imperfect stem the vowel pattern is u-a-(a)-(a), as in the basic pattern, the number of vowels depending on the kind of modifications of the pattern. The vowel distributions of the active voice of the imperfect stem are only partly predictable from the basic pattern (cf. Table 4.2, and Holes 1995: 88; McCarthy 1982; Wright 1896: 63ff.).

4.2.1.3 Person, gender and number

<table>
<thead>
<tr>
<th>Table 4.4 Classical Arabic Perfect inflection</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>sing</strong></td>
</tr>
<tr>
<td>1</td>
</tr>
<tr>
<td>2m</td>
</tr>
<tr>
<td>2f</td>
</tr>
<tr>
<td>3m</td>
</tr>
<tr>
<td>3f</td>
</tr>
</tbody>
</table>

58 Holes (1995: 86) calls the imperfect stem the p-stem (prefixal) and the perfect stem the s-stem (suffixal).

59 I prefer such an analysis above the analysis of Stoetzer (1997: 91), where the first vowel of the imperfect passive is considered as part of the PGN allomorphy. In such an analysis, an extra set of PGN prefixes has to be assumed, the choice of which depends on voice. Under that analysis the resemblance of these prefixes to the other imperfect active prefixes remains unexplained. Furthermore, the relation between the vowel patterns of the imperfect and perfect passives is obscured.
Table 4.5 Classical Arabic Imperfect inflection
Affixes that only appear in the indicative are in brackets (see below).

<table>
<thead>
<tr>
<th></th>
<th>sing</th>
<th>plur</th>
<th>dual</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>^-…(-u)</td>
<td>n-…(-u)</td>
<td>-</td>
</tr>
<tr>
<td>2m</td>
<td>t-…(-u)</td>
<td>t-…-u:(na)</td>
<td>t-…-a:(ni)</td>
</tr>
<tr>
<td>2f</td>
<td>t-…-i:(na)</td>
<td>t-…-na</td>
<td>t-…-a:(ni)</td>
</tr>
<tr>
<td>3m</td>
<td>y-…(-u)</td>
<td>y-…-u:(na)</td>
<td>y-…-a:(ni)</td>
</tr>
<tr>
<td>3f</td>
<td>t-…(-u)</td>
<td>y-…-na</td>
<td>t-…-a:(ni)</td>
</tr>
</tbody>
</table>

There are two sets of PGN affixes. These express first, second and third person; masculine and feminine; and, singular, dual, and plural. This could yield 36 different affixes; however, several syncretisms reduce the number of affix combinations to 25:

The PGN denotation in the imperfect stem consists of a prefix and a suffix. This could be analysed as a circumfix. However, the components of this circumfix seem to mean something on their own as well, e.g., -a: is only used for the dual, and y- only for the 3rd person. On the other hand, an analysis in which the prefix and suffix have a mutually independent meaning misses several generalisations (cf. Noyer 1992: 61ff.). This problem can be analysed in the framework of distributional morphology by assuming a fused PGN-meaning, which then is realised in two affixes. By accepting an intermediate level where the person, gender and number meanings are fused and a subsequent level where they are fissioned again, the partial dependency between prefix and suffix is accounted for without using theoretically unattractive circumfixes. The fission of the fused PGN-meaning into exactly two parts is motivated by a templatic demand on morphological structure, which for the imperfect in Classical Arabic is, PRE-STEM-SUFF. Of course, the costs for this analysis lie in the extra morphological level; however, with such a level generalisations are made for Arabic, for other Afro-Asiatic languages, and for other morphologically complex languages like Nunggubuyu (Noyer 1992). The counterpart of this autonomous morphological level in my model is the Morphological Principle. The affixes of the imperfect stem can be specified as in Table 4.6 (the affixes of the perfect also have straightforward specifications, which I will not discuss here).

Table 4.6 Classical Arabic affixes of the imperfect

<table>
<thead>
<tr>
<th>Form</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>^</td>
<td>1</td>
</tr>
<tr>
<td>n-</td>
<td>1, plur</td>
</tr>
<tr>
<td>t-</td>
<td>2</td>
</tr>
<tr>
<td>-a:ni</td>
<td>dual</td>
</tr>
<tr>
<td>-na</td>
<td>fem, plur</td>
</tr>
<tr>
<td>-u:na</td>
<td>plur</td>
</tr>
<tr>
<td>-i:na</td>
<td>fem/-2</td>
</tr>
<tr>
<td>t-</td>
<td>fem</td>
</tr>
<tr>
<td>y</td>
<td>ø</td>
</tr>
<tr>
<td>-u</td>
<td>Elsewhere/ind</td>
</tr>
</tbody>
</table>

To infer the correct form from a given meaning, in addition, a markedness hierarchy, the Panini Principle, and autonomous structure constraints are needed. In the markedness hierarchy number ranks higher than person, which on its turn ranks higher than gender.
Arabic

Noyer (1992: 93) formulates the Hierarchy Constraint and Panini Principle as follows:

- **Hierarchy Constraint**: If structural descriptions are disjoint or overlapping, then the rule referring to the hierarchically higher feature applies first.
- **Panini Principle**: If one rule’s structural description is contained in the other’s, the rule with the more specific structural description applies first. (Noyer 1992: 93).

With the help of these general principles derivations are prevented like: \( t^-FEM + ROOT + -u:na=PL \rightarrow 2FEM.PL \), because in this derivation the Hierarchy Constraint is violated. Prefixation of \( t^-2 \) is preferred since person is higher than gender on the hierarchy, yielding the correct form, \( t^-2 + ROOT + -na=FEM.PL \) for \( 2FEM.PL \). By the second constraint, \( t^-FEM + ROOT + -u:na=PL \) is prevented to mean \( 3FEM.PL \). Instead, \( y=\emptyset + ROOT + -u:na=FEM.PL \) is preferred.

### 4.2.1.4 Mood

The perfect stem has no further mood distinctions, while in imperfect finite forms three moods are distinguished, the indicative, subjunctive and jussive. Because the labels for the mood suffixes do not coincide completely with their sense in European languages, Holes prefers to call the suffixes u-set, a-set and base-set suffixes respectively. The u-set, used for the indicative, consists of the affixes between brackets in above, and of an \(-u\) after the suffixless forms. The a-set, for the subjunctive, consists of the \(-a\) after the suffixless forms. The jussive corresponds to the forms in Table 4.5 without the bracketed affixes. Examples are: ‘she/they (f, dual)/they (f, plur) write’: \( taktub\_yaktubna/\ taktub:ni \), ‘she/they (f, dual)/they (f, plur) did not write’: \( (lam)\ taktub\_yaktubna/\ taktub:ru \), ‘that she/they (f, dual)/they (f, plur) write’ \( taktub\_yaktubna/\ taktub:ru \).

In an alternative analysis, Noyer (1992: 94ff.) assumes there is a set of affix specifications for the three moods, and, in addition, there is a prosodic word structure constraint, which leads to the truncation in the non-indicative forms. Most mood distinctions, as well as several PGN distinctions are signalled only by a final short vowel. These are the forms and distinctions which were subject to the discussions referred to in section 4.1.2.

### 4.2.1.5 Object clitics

The object pronouns in their bound form, strictly speaking, do not belong to inflectional morphology. Since this system of clitics has also changed in interesting ways I will nevertheless discuss it here. After the full inflectional forms in Classical Arabic the following bound pronominal forms can be placed. These clitics, or suffixes, except for 1SG, are the same as the genitive pronouns. Examples are: ‘I beat you (fem, plur), him, them (dual)’: \( \text{d}arabt\text{tu}kunna, \text{d}arabtu\text{hu}, \text{d}arabtu\text{hu}: \).

---

60 In Classical Arabic there were two other moods, the imperative and the ‘energetic’ (Wright 1896: 51). These are not used in finite tenses, however.
The augmentations, the vowel insertions and affixations all involve a consonantal skeleton. Generally verb formation follows the steps above. However, some consonant combinations cause deviations from this format. Verbs with the same consonant in the second and third position often have no vowel after the second consonant if the first and third consonant are also followed by a vowel, e.g. *farara* → *farra*, ‘he fled’. If the first consonant is not followed by a vowel, the vowel of the second consonant changes its place: *yamlalu* → *yamallu*, ‘he got bored’. This takes place especially in verbs with a second vowel *a* in the perfect stem. When a consonant-initial suffix follows, and when the second consonant is alveolar this consonant is sometimes dropped, and sometimes its vowel is placed after the third radical. In the apocopated jussive forms, an epenthetic vowel is inserted at the end, and the second vowel is deleted instead. In the augmented forms where the second or third consonant is already doubled such contractions and metatheses do not take place. These are not merely phonological rules, since they are sensitive to the morphological environment (cf. Holes 1995: 95).

Another class of exceptions are the so-called weak verbs. These have a consonantal counterpart of one of the three vowels *a*, *i*, and *u* among their radicals, that is, they are analysed as having either an *w*, *y*, or *w* in one or more positions in the skeleton. The underlying glides, *w* and *y* sometimes surface as *w* and *y*. However, the alif, *ḥ*, never surfaces as a distinct sound, and is only hypothesised as an abstract phonological entity to account for the patterns more succinctly. If the first consonant is a *w*, it is dropped in the imperfect when the *v₂* is *i*. Some *w*-initial verbs with *v₂=i* in the perfect also delete the *w* in the active imperfect, because their *v₂* is, contrary to Table 4.3 also *i*. A few verbs with *v₂=a* also delete the initial *w*. When the verb has a prefix with an *i* or *u* vowel, initial consonantal *w* and also *y* assimilate to the preceding vowel, and are realised as vowels themselves. In pattern 8 the initial *w* and *y* assimilate to the following *i*.

If C₂ or C₃ is weak, several morphologically conditioned phonological adjustments take place. I have summarised these in Table 4.8, adapted from Holes (1995: 92ff.).

---

**Table 4.7 Classical Arabic object clitics**

<table>
<thead>
<tr>
<th></th>
<th>sing</th>
<th>plur</th>
<th>dual</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>-ni:</td>
<td>-na:</td>
<td>-</td>
</tr>
<tr>
<td>2m</td>
<td>-ka</td>
<td>-kum</td>
<td>-kuma:</td>
</tr>
<tr>
<td>2f</td>
<td>-ki</td>
<td>-kuna</td>
<td>-kuma:</td>
</tr>
<tr>
<td>3m</td>
<td>-hu</td>
<td>-hum</td>
<td>-huma:</td>
</tr>
<tr>
<td>3f</td>
<td>-ha:</td>
<td>-hunna</td>
<td>-huma:</td>
</tr>
</tbody>
</table>

---

61 Another analysis is possible. Fleisch, discussed in Holes (1995: 91), argues that the initial *w* and *y* are formed from biradical roots by analogy to the ‘real’ triradical verbs. In this view, the initial *w* has not historically been dropped, but has simply never evolved. This does not exclude the synchronic analysis however, in which the underlying form has a *w* or *y* initially.

62 However, even this extensive table is not complete. There are several examples of verbs behaving differently. Cf. *qawamta* → *qunta* (Versteegh, pers.comm.).
Table 4.8 Classical Arabic rules for weak consonants

in v$S$v ($S$ is a weak consonant)

<table>
<thead>
<tr>
<th>$S$</th>
<th>a$S$</th>
<th>i$S$</th>
<th>u$S$</th>
</tr>
</thead>
<tbody>
<tr>
<td>a</td>
<td>a:</td>
<td>i:</td>
<td>u:</td>
</tr>
<tr>
<td>i</td>
<td>iya</td>
<td>i:</td>
<td>i:</td>
</tr>
<tr>
<td>u</td>
<td>uwa</td>
<td>i:</td>
<td>i:</td>
</tr>
</tbody>
</table>

in v$S$v:

<table>
<thead>
<tr>
<th>$S$</th>
<th>a$S$:</th>
<th>i$S$:</th>
<th>u$S$:</th>
</tr>
</thead>
<tbody>
<tr>
<td>a</td>
<td>a:</td>
<td>i:</td>
<td>u:</td>
</tr>
<tr>
<td>i</td>
<td>iya:</td>
<td>i:</td>
<td>i:</td>
</tr>
<tr>
<td>u</td>
<td>uwa:</td>
<td>i:</td>
<td>i:</td>
</tr>
</tbody>
</table>

in C$S$v

<table>
<thead>
<tr>
<th>$S$</th>
<th>a</th>
</tr>
</thead>
<tbody>
<tr>
<td>a</td>
<td>a:</td>
</tr>
<tr>
<td>i</td>
<td>i:</td>
</tr>
<tr>
<td>u</td>
<td>u:</td>
</tr>
</tbody>
</table>

Long vowels are the outcome of many of these processes. These shorten when the weak consonant is in second position, and the syllable following that consonant is closed. When two of the radicals are weak, further combinations of assimilations take place (cf. Wright 1896: 94ff.). These rules allow several exceptions in verbs with similar phonological conditions. Furthermore the rules are sensitive to the nominal or verbal status of a word (cf. Holes 1995: 91-94; Wright 1896: 81-91). Therefore, although the rules are clearly phonologically motivated, e.g., the hierarchy a>i>u plays an important role in the processes, they belong to morphology.

In addition to the character of the radical consonants, verb classes also arise because of the different ways $v_2$ behaves in the active imperfect and perfect stems of pattern 1 (cf. Table 4.3 above). Five alternations are possible: (imp-perf.) a-a, a-i, i-a, u-a, u-u, although there is some regularity as well. The a-a alternation is a phonological variant on the i-a pattern, while u-a is a deviant minority pattern (Versteegh, pers.comm.). Moreover, the choice between $v_2$ vowels of the perfect is partly semantically motivated. A $v_2$ vowel, $a$, is generally used in transitive verbs, like fuʿal, ‘make’ and jarah, ‘hit’. An $i$ is generally used for actions in which the agent is involved or affected, like hasir, ‘lose’, fahim, ‘understand’ and an $u$ is used in intransitives that denote states and qualities like hasun, ‘be good’, kahir, ‘be/become larger’. Although these vowel patterns are to some extent predictable, not all vowel patterns are determined by the consonantal root and the meaning of the verb alone. Therefore, lexical information about a stem must be augmented with information about the pattern the verb uses to mark aspectual distinctions.

4.2.2 Analysis

How should we analyse these data within the framework adopted in this study? It turns out that as in all languages I discuss, the Economy and Transparency Principle play a role. It is specific for the case of Arabic, however, that especially fission and the Morphological Principle play a role.
4.2.2.1 Economy

If the object clitics are analyzed as part of the inflectional morphology, the categories expressed in Arabic are aspect, voice, person (subject), gender (subject), number (subject), mood, and person (object), gender (object), number (object). Aspect is always expressed. Voice is expressed in most verbs, although the passive is, for obvious reasons, less expressed in intransitive verbs, like all CvCuC verbs, other intransitive CvCvC verbs, and verbs of pattern 9.63

Person of the subject is almost always expressed, except in the imperfect feminine dual, which does not distinguish second and third person. Gender of the subject is not expressed in the first person, nor in the second person dual. Number of the subject is always expressed.

Mood is not expressed in the perfect. In the imperfect there are no mood distinctions in forms with short vowel suffixes, that is, 2nd and 3rd feminine plural, and there are no distinctions between subjunctive and jussive in other suffixed forms.

Person of the object is always expressed, gender of the object is not expressed in the first person, and not in the dual. Number of the object is always expressed.

In weak verbs some mood distinctions are lost, e.g., tabqaya and tabqayu both reduce to tabqa. Other distinctions would have been lost in weak verbs, if the rules of Table 4.8 would operate phonologically. However, in several cases where these distinctions would have been lost, other morphological rules interfere (cf. Holes 1995: 93).

Economy would be ranked higher if Classical Arabic would have no short vowel suffixes, as discussed above in 4.1.2. In that case, many other distinctions would not have been made as in the modern varieties, like most mood distinctions and the distinction between 1SG.PERF and 2SG.PERF.

4.2.2.2 Transparency

As extensively argued by Noyer (1992), person, gender and number are fused in Arabic, in the subject as well as in the object, cf. 4.2.1.3. I analyse aspect and voice as not fused. First of all, voice distinctions are only expressed by vowel alternations, while aspect is also expressed by a different placement of these vowels into the skeleton, and aspect triggers also a different set of PGN affixes. Secondly, although the variation in vowel alternation in the active imperfect stem in the augmented patterns is large, voice distinctions can for a large part be distinguished from aspect distinctions. Except in the 5th and 6th pattern, it is the second vowel that changes from a to i, or from i to a when changing the aspectual category of a verb. When going from active to passive voice however, it is the first vowel which changes into u (cf. also Holes 1995: 88).

Structural homonymy is essentially the reformulation of the Economy Principle in terms of the Transparency Principle, because every filtering of a category combination is at the same time a violation of the No Syncretism Principle. Structural homonymy therefore comprises the same forms as mentioned under Economy above. In addition there is so-called accidental homonymy, in which forms are just accidentally the same, without any cancellation of meaning distinctions (cf. section 2.1.2.2 and Carstairs-McCarthy 1987).

63 The passive in Arabic, however, is a flexible device; also intransitives can in principle be passivised, in the so-called impersonal passive construction.
In Classical Arabic there is only one accidental homonymy in the inflectional paradigm, namely between IMPERF.2SG.MASC and IMPERF.3SG.FEM. When assuming an early final short vowel loss in Classical Arabic, however, homonymy would be more prevalent.

As discussed above, fission takes place in the fused PGN category, which is morphologically spelled out into a prefixal and a suffixal position in the imperfect. Other categories show no fission. Another meaning that is not transparently expressed is the lexical meaning of the root itself. The lexical meaning is expressed in the so-called skeleton, which is not a linear unit in the final full verb. Technically this splitting falls under the heading of fission.

The expression of several categories depends on the forms and categories elsewhere. The expression of aspect depends first of all on the lexical root. Weak verbs have, at least on the surface, a different vowel pattern than strong verbs. Furthermore, the various augmented patterns also trigger distinct ways of aspect expression. Finally, aspect is expressed in five patterns in the second vowel, v₂, of the perfect and imperfect, which is only partly semantically motivated. The PGN affixes, particularly the suffixes are also dependent on the weakness of the root consonants. The form of PGN expression is furthermore dependent on the aspect of the verb. Mood suffixes in their turn depend on the form of the PGN suffixes. Mood also depends on the weak/strong distinction in the verb.

4.2.2.3 Isomorphy

Aspect and voice is expressed in between the consonants of the lexical root. Person, gender and number of the subject is expressed outside the root, and mood in its turn follows the PGN suffix. Expression of the object of the person is at the end of the verb. So, the order is:

(PsubGsubNsub) - [Verb+Aspect+Voice] - GsubNsub - Mood - (PobjGobjNobj).

I placed (PsubGsubNsub) and (PobjGobjNobj) between brackets, because (PsubGsubNsub) is only prefixal in the imperfect, and (PobjGobjNobj) is only present in certain syntactic environments. For the exact distribution of person, gender and number agreement, see section 4.2.1.3 above.

The ideal order of these categories, according to section 2.1.3.2, is:

Verb - Voice - Gobj- Nobj- Pobj - Aspect - Mood- Gsub- Nsub- Psub.

The Classical Arabic affix order deviates from this ideal order by having a prefix, and by having a modal suffix farther away from the verb stem than the PGNsub affixes. Finally, the PGNobj suffix is farther away from the stem than the PGNsub affixes.

4.2.2.4 Other Principles

In Classical Arabic morphological as well as phonological principles play a role in inflection. Under the heading of Morphological Principles I have included the principles that operate on the morphological structure but which cannot be traced back to the Economy, Transparency or Isomorphy principles, cf. also 2.1.4. The morphological principles operative in Classical Arabic are requirements for certain position and order templates. As discussed above in 4.2.1.3, the choice of aspect triggers a specific skeleton structure, and demands specific affix positions to be filled. These demands are both distinct from syntactic demands like recoverability, and phonological demands, since
they are category sensitive. These demands constitute an autonomous morphological level (cf. also Noyer 1992). This morphological principle is rather stable in the history of Arabic, probably because it contributes to the relative high recognisability of aspect distinctions. In KiNubi Arabic, however, we will see that it has become less important.

Phonological principles relevant to the history of Arabic are, for instance, the rules that deal with weak consonants, and those that affect verbs where $C_2=C_3$ leads to allomorphy. These rules spring from general principles of phonological markedness, but they are quite specific in Arabic, and sensitive to morphological structure.

4.3 Najdi Arabic

In this section I will discuss the inflection of the verb in the variety of Najdi Arabic spoken by the Shammar tribe. My description is based on Abboud (1979), Ingham (1982, 1994), Johnstone (1967), and Prochazka (1988). I will use the same spelling conventions as in 4.2, with the addition of $c$ and $g$ for palatal, voiceless and voiced, plosives.

4.3.1 Data

As in Classical Arabic, the Najdi verb consists of a root, which can be augmented in several ways. In the augmented skeletons vocalic aspect and voice infixes are inserted, and they are further dressed up by prefixes and suffixes that signal person, gender and number. At the end of these forms object pronominal clitics can be attached. Conjugations vary depending on the consonants of the skeleton. The phonological form is highly influenced by phonological rules.

4.3.1.1 Phonological preliminaries

In Najdi Arabic the phonemic inventory has changed but little from Classical Arabic; the $d/d$ and $g/g$ have merged, and the $i-i-u$ distinction is often neutralised, yielding a schwa. On the other hand two new consonants emerged through fronting of $k$ and $g$, that is, $c$ and $j$, and two new vowels emerged as well, $e$ and $o$. These new phonemes behave mainly as allophonic variants, but in some instances they have phonemic status.

In Najdi Arabic there are a few phonological regularities, which are not present in Classical Arabic, and which affect verbal inflection (cf. Ingham 1994: 13ff.). There is a rule that blocks forms with a word-final consonant cluster ending on $r, l, w, y$, or $n$. In such cases a vowel is inserted, for instance $sahri/ sabur$, ‘my patience’/ ‘patience’. In neighbouring dialects this rule applies in more contexts. The restricted application of this rule is in fact a marker (in the sense of Trudgill 1986) of Najdi Arabic speech. A related rule demands an inserted vowel after a long syllable and preceding a consonant initial suffix, that is, in the context of $CvC^*C$ and $CvCC^*C$. This rule applies especially when the surrounding consonants are voiced, in slow speech, in the northern Najd, and with older speakers and Bedouins. Depending on the order of application, these two rules yield either $ibn-ha$ $\rightarrow$ $ibn-i-ha$, or $ibn-ha$ $\rightarrow$ $ibn-ha$, ‘her sister’.

In Najdi Arabic some phonological rules involve the vowel quality and affect voice and aspect expression (see below). First of all, there is a rule, the CiC Rule, that says:

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64 See note 55.
GiCvC# → CCvC#, this rule applies from right to left, yielding ʰḥibis -at → ʰḥibis -at, and ʰḥibis → ʰḥibis.

Ordered after this rule, there is the CaC Rule, that says:
CaCvCv → CCvCv.

Next, the so-called Short Vowel Raising Rule says:
#Ca# → #Ci#.

These combined rules effectively make an i in an open syllable to be always a derived i. Motivations for this ordering are discussed in 4.3.1.3. This ordering explains cases where each rule has applied only once. More complex cases like: katalatan → kiltan cannot be handled by this rule ordering alone. I will not treat these cases, since my focus is on cases where phonology interferes with morphology.

The CaC Rule and the CiC Rule together express the Resyllabification Rule that restricts the occurrence of open syllables (cf. Kupershoek 1995: 116). Like in Moroccan Arabic, there are more possibilities for sequences of consonants than in Classical Arabic; CC may appear initially and in some instances -CCC- is allowed.

A rule that outweighs the rules above is the Guttural Rule (Abboud 1979: 468ff.), that demands an a in an open syllable, when a velar or post-velar fricative precedes or follows, and also when a voiced continuant /l, n, r, or w/ follows the vowel. The exact conditions vary regionally; in the more central Arabian dialects there are the strictest conditions.

The same velar and post-velar fricatives are also not allowed to appear syllable-finally when preceded by an a. This results in ya-ktib, ‘he writes’, but y-ḥafir, ‘he digs’.

In poetry and rapid speech further assimilation and elision may diminish transparency. Kupershok (1999: 128) says: “For someone who is not a native speaker and has not been steeped in this practice, this is yet another factor complicating the instant deciphering of the stream of sound.”

4.3.1.2 Augmentations

The augmentations of the root yield ten kinds of productively derived forms, that correspond to the Classical Arabic augmentations. The patterns 11 until 15 of Classical Arabic are not discussed for Najdi Arabic by Ingham (1994) and Abboud (1979). The patterns are largely the same as in Classical Arabic, but thanks to the phonological rules mentioned above, they differ in the quality of the infixal vowels. The augmentations have only a partly predictable meaning. According to Versteegh (pers.comm.) they differ from the Classical Arabic patterns probably also in degree of productivity. As in Classical Arabic, they are influenced by the Aktionsart of the verb, its lexical meaning, and they display some idiosyncratic properties as well.

Pattern 2 is formed by doubling the second consonant of the basic form: C₁C₂C₃C₄. Applied to transitive verbs it yields an intensive meaning; applied to intransitives, a transitive meaning, wigaf: ‘he stopped (intr.)’, → waggaf, ‘he stopped (tr.)’.

Pattern 3 is formed by lengthening the basic form of v₁: C₁v₁C₂C₃. Ingham (1994: 82) argues that in fact the meaning of this pattern is based on that of pattern 6, instead of the other way round. It would be a ‘unidirectional reciprocal’, that is, when pattern 6 expresses reciprocity in e.g. tīṣa-fahaw ‘they shook hands with each other’, pattern 3,
sa:fa hih means ‘he shook hands with him’, thereby implying reciprocity but focusing on only one actor.

Pattern 4 prefixes an ^ before the root, e.g. WGF ‘stop’ (intr.) → ^awgaf, ‘he stopped’. Like pattern 2 the signification of pattern 4 is causative.

Pattern 5 adds a t-prefix to pattern 2 verbs, and a passive or reflexive meaning. For example, GT ‘cut’ → GT t ‘cut into pieces’ → tigat ‘it was cut into pieces’.

Pattern 6 adds a t-prefix to third pattern verbs: C1V1:C2C3 → tC1V1:C2C3. Its meaning is reciprocal. FHM ‘understand’ → tifa:himaw ‘they mutually understood each other’.

Pattern 7 adds the n-prefix, and a reflexive, passive or middle meaning. Unlike Classical Arabic, pattern 7 can be applied to already augmented verbs of pattern 5, 6, and 11. In some dialects these augmentation combinations are unpredictable in their meaning. In the perfect it is a pure passive marker, while in the imperfect it may also express potentiality, as in Classical Arabic: dibah, ‘he killed’ → yindibih ‘he is killed, he is killable’.

Pattern 8 inserts t after the C1 of the basic pattern. When there are no further prefixes, a prosthetic i is prefixed. Its meaning is rather close to the meaning of pattern 5 and 6, and especially pattern 7, e.g. ^istalam, ‘receive’. It expresses a reflexive, middle and also a passive sense.

Pattern 9 doubles the third consonant of the basic pattern: C1C2C3C3. As in Classical Arabic, it may denote ‘becoming a colour’, as in ^iswadd, ‘he became black’.

Pattern 10 is formed by prefixing st to the basic pattern. Its meaning is reflexive, middle or benefactive, as in stafham, ‘he sought to understand’, derived from FHM, ‘understand’.

In Najdi there are, as in Classical Arabic, some four-consonantal verbs that derive analogously to pattern 2, 5 and 6. Najdi Arabic has a productive pattern unknown in other dialects or in the Classical language, that is, prefixation of n- and ta-. It behaves like the pattern 5 and 6. Finally, in Najdi the pattern 10 prefix sta- may also be prefixed to pattern 2 or 3 verbs.

4.3.1.3 Aspect and voice
In most Arabic varieties, even in the Gulf and southern Iraq dialects, which are closely related to Najdi Arabic, there is no longer an internal passive (cf. 4.4.1.3). In Najdi Arabic, however, voice and aspect are both still expressed by the vowel quality of the stem vowels (cf. Abboud 1979: 475). The paradigms for the voice, aspect and person, number and gender distinctions, are as in Table 4.9 and Table 4.10.

The stem vowels of these paradigms express aspect and voice. The relation between the categories and the phonological form is not straightforward but the result of phonological rules that apply to the underlying patterns shown in Table 4.11.
Table 4.9 Najdi Arabic transitive inflection

<table>
<thead>
<tr>
<th></th>
<th>Active, ‘to dwell’</th>
<th>Passive, ‘to be imprisoned’</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Perfect</td>
<td>Imperfect</td>
</tr>
<tr>
<td>1SG</td>
<td>sikan-t</td>
<td>^-askin</td>
</tr>
<tr>
<td>2MASC.SG</td>
<td>sikan-t</td>
<td>t-askin</td>
</tr>
<tr>
<td>2FEM.SG</td>
<td>sikan-ti</td>
<td>t-askn-i:n</td>
</tr>
<tr>
<td>3MASC.SG</td>
<td>sikan</td>
<td>y-askin</td>
</tr>
<tr>
<td>3FEM.SG</td>
<td>skan-at</td>
<td>t-askin</td>
</tr>
<tr>
<td>1PL</td>
<td>sikan-na</td>
<td>n-askin</td>
</tr>
<tr>
<td>2MASC.PL</td>
<td>sikan-tu</td>
<td>t-askn-u:n</td>
</tr>
<tr>
<td>2FEM.PL</td>
<td>sikan-tin</td>
<td>t-askn-in</td>
</tr>
<tr>
<td>3MASC.PL</td>
<td>skan-aw</td>
<td>y-askn-u:n</td>
</tr>
<tr>
<td>3FEM.PL</td>
<td>skan-an</td>
<td>y-askn-in</td>
</tr>
</tbody>
</table>

Table 4.10 Najdi Arabic intransitive inflection

<table>
<thead>
<tr>
<th></th>
<th>Active, ‘to drink’</th>
<th>Passive, ‘to be heard’</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Perfect</td>
<td>Imperfect</td>
</tr>
<tr>
<td>1SG</td>
<td>širib-t</td>
<td>^-āšrāb</td>
</tr>
<tr>
<td>2MASC.SG</td>
<td>širib-t</td>
<td>t-āšrāb</td>
</tr>
<tr>
<td>2FEM.SG</td>
<td>širib-ti</td>
<td>t-āšrīb-i:n</td>
</tr>
<tr>
<td>3MASC.SG</td>
<td>širib</td>
<td>y-āšrāb</td>
</tr>
<tr>
<td>3FEM.SG</td>
<td>šarib-at^65</td>
<td>t-āšrāb</td>
</tr>
<tr>
<td>1PL</td>
<td>širib-na</td>
<td>n-āšrāb</td>
</tr>
<tr>
<td>2MASC.PL</td>
<td>širib-tu</td>
<td>t-āšrīb-u:n</td>
</tr>
<tr>
<td>2FEM.PL</td>
<td>širib-tin</td>
<td>t-āšrīb-in</td>
</tr>
<tr>
<td>3MASC.PL</td>
<td>šarb-aw</td>
<td>y-āšrīb-u:n</td>
</tr>
<tr>
<td>3FEM.PL</td>
<td>šarb-an</td>
<td>y-āšrīb-in</td>
</tr>
</tbody>
</table>

Table 4.11 Najdi Arabic vowel patterns

<table>
<thead>
<tr>
<th></th>
<th>active</th>
<th>passive</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>trans./intrans.</td>
<td>transitive</td>
</tr>
<tr>
<td>v₁</td>
<td>v₂</td>
<td>v₂</td>
</tr>
<tr>
<td>imperfect</td>
<td>-v₁CVv₂C-</td>
<td>a</td>
</tr>
<tr>
<td>perfect</td>
<td>CVv₂C-</td>
<td>a</td>
</tr>
</tbody>
</table>

As in Classical Arabic, the active voice in northern Najdi Arabic is expressed by a low v₁ vowel. This is raised in most forms in the perfect by the phonological Short Vowel Raising Rule, as in sakan -t → sikan -t ‘dwell’, 1SG.ACT.PERF, or it is deleted when the CaC Rule applies, as in sakan -at → skan -at, ‘dwell’, 3FEM.SG.ACT.PERF. This last

^65 According to Prochazka (1988: 31), šarib-at, and also šarib-aw, and šarb-an, vary with širib-at, šrīb-aw, and šrīb-an which are analogous to the form of the transitive inflection.
example shows that CaC must apply before the Short Vowel Raising Rule, otherwise it would result in sakan -at → sikin -at, given that CiC applies before the CaC Rule, as I argue below. Because of šārīb -t → šārīb -t, ‘drink’, 1SG.ACT.PERF, the Short Vowel Raising Rule must apply after the CiC Rule, otherwise the form would be like the passive šārīb -t → šārīb -t, where CiC applied to the original i.

The passive voice in Najdi Arabic is expressed by a high v1 vowel, which is deleted when the CiC Rule applies, e.g. in simīt -t → smīt -t, ‘hear’, 1SG.PASS.PERF, and which becomes an a because of the Guttural Rule in e.g. ‘i-smā → “a-smā’, ‘hear’, 1.SG.PASS.IMPERF.66 When only considering strong verbs, this v1 vowel can be analysed as an i. Patterns in weak verbs, cf. below, suggest, however, that this v1 vowel must be an u underlyingly, and, that i is the allophone when the vowel is short.

In the active voice the v2 depends both on the aspect and on the stem class of the verb. In the perfect transitive, and the imperfect intransitive the v2 is low. In other cases, the v2 is high. In the passive voice the perfect triggers a high v2 vowel, and the imperfect a low v2 vowel. This v1 vowel is also sensitive to phonological rules. For instance, the CiC Rule yields šārib -at → šārīb -at, ‘drink’, 3FEM.SG.ACT.PERF, and the Short Vowel Raising Rule yields tiḥbas-e:n → tiḥbīs-e:n, ‘imprison’, 2FEM.SG.PASS.IMPERF. šārib-at → šārīb -at shows that the CiC Rule applies before the CaC Rule. The CiC Rule is, however, also lexically and morphologically sensitive (Prochazka 1988: 33): cf. ya-kītb-u:n versus ya-kītb-in, and ya-jīls-u:n.

In the intransitive verb class, which has a perfect active voice with a v2 vowel i, e.g. simīt, the passive voice is rather similar to the active voice. Moreover, for many verbs of this class, there are hardly any semantic differences between the active and passive voice. When CiC would apply after the Short Vowel Raising Rule, conflations would occur. Passive and active voice actually were conflated in many Najdi varieties, though not in the Shammar dialect (cf. Ingham 1982: 45ff., and section 4.3.2.2 below).

As in Classical Arabic, the perfect versus the imperfect aspect is not only expressed by the vowel quality of the vowel infixes, but also by different syllable structures, and two different sets of suffixes, which I will discuss in section 4.3.1.4.

The vowel patterns of the augmented patterns 2, 3, 4, 7, 8, 9, and 10 follow the transitive stem class, and the phonological rules apply. This yields forms like: LBS, labbasaw → labbsaw, ‘dress’, 3MASC.PL.ACT.PERF and HJM, ‘attack’, t-ha:jimi:n → t-ha:jmi:n, ‘attack’, 2FEM.SG.ACT.IMPERF. Pattern 5 and 6 deviate since they have an a as v2 in the imperfect, and, in addition, they have the suffixes of the passive conjugation in the active forms as well, o:n, e:n, an, e.g. y-tana š șıf/ y-tana š șīf-o:n, ‘dry oneself’, 3MASC.SG/PL.ACT.IMPERF.

4.3.1.4 Person, gender and number

There are two sets of PGN affixes, which express first, second and third person; masculine and feminine; singular and plural.

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66 Abboud (1979: 476, 490) analyses this high v1 vowel as part of the prefix. This leads to a more cumbersome analysis when generalising over the stem vowel patterns in different augmented forms. In studies of the Classical language this first vowel of the imperfect is also analysed in different ways (cf. Stoetzer 1997 versus Holes 1995).
Apart from the disappearance of the dual, the structure of Najdi Arabic has remained quite similar to the Classical Arabic structure, and I will analyse the Najdi Arabic affixes in a similar way (cf. 4.2.1.3). The feature specification of Najdi Arabic imperfect affixes is as in Table 4.14.

### Table 4.14 Najdi Arabic affixes of the imperfect

<table>
<thead>
<tr>
<th>Form</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>ø-</td>
<td>1</td>
</tr>
<tr>
<td>n-</td>
<td>1, plur</td>
</tr>
<tr>
<td>t-</td>
<td>2</td>
</tr>
<tr>
<td>-in</td>
<td>fem, plur</td>
</tr>
<tr>
<td>-u:n</td>
<td>plur</td>
</tr>
<tr>
<td>-i:n</td>
<td>fem/-2</td>
</tr>
<tr>
<td>t-</td>
<td>fem</td>
</tr>
<tr>
<td>y</td>
<td>ø</td>
</tr>
<tr>
<td>-ø</td>
<td>Elsewhere</td>
</tr>
</tbody>
</table>

As in Classical Arabic, further general principles are needed to derive the correct forms, which I have discussed above. The 3FEM.SG.PERF suffix -at becomes -eh when it is not followed by other suffixes.

Variation in the suffixes of the imperfect conjugation depends on voice, cf. Table 4.9 and Table 4.10. In Classical Arabic this variation only depends on the weak/strong verb distinction. However, the Classical Arabic suffixes that differed only phonologically make semantic distinctions in Najdi Arabic. The suffix, -aw, 3.MASC.PL, that was only used in weak verbs in Classical Arabic, is used for all verbs in Najdi Arabic.

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67 The retention of a gender distinction in the plural is one of the typical features of conservative Bedouin speech in Arabic.
4.3.1.5 Mood

The mood system of Classical Arabic has completely disappeared from Najdi Arabic (Ingham 1994: 118ff., cf. also the discussion above in 4.1.2 about the status of modal suffixes in Classical Arabic itself). Instead, a range of particles, preverbs and other modal elements are used to express modality. Many of these items are grammaticalised items in the sense of Hopper and Traugott (1993). Their meaning is extended and generalised, their form is reduced, their positions are more fixed, and they may merge with other words. However, they are not part of verbal inflection in Najdi Arabic. The form that is grammaticalised most, yabi ‘(future/intent) will’ is sometimes prefixed to the verb in a reduced form: tabi tru:hi:n \(\rightarrow\) bi tru:hi:n ‘you (FEM.SG) will go’. However, this is not obligatory, and yabi is never prefixed to forms with perfect aspect. In addition, unlike most other Arabic varieties, the forms without any particle, clitic or prefix, do not express marked modality, like irrealis. Therefore I do not analyze mood as a verbal inflectional category.

4.3.1.6 Object clitics

The system of pronominal object suffixes has remained largely the same. They are, however, merged a little more into the phonological form of the verb, since they trigger stress modifications and vowel lengthenings (Ingham 1994: 30). Among the Najdi dialects there is some variation in the form of these suffixes. The suffixes in the northern Najd are as in Table 4.15.

<table>
<thead>
<tr>
<th></th>
<th>Sing</th>
<th>Plur</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>...-an/ nan</td>
<td>...-na</td>
</tr>
<tr>
<td>2m</td>
<td>...-ak/k</td>
<td>...-kam</td>
</tr>
<tr>
<td>2f</td>
<td>...-ic/c</td>
<td>...-cin/kin</td>
</tr>
<tr>
<td>3m</td>
<td>...-uh/w/h</td>
<td>...-ham</td>
</tr>
<tr>
<td>3f</td>
<td>...-ah/wah/yah</td>
<td>...-hin</td>
</tr>
</tbody>
</table>

The choice between the allomorphs is defined by the ending of the word. The plural object clitics are simply attached to the verb, and trigger an epenthetic vowel, which is the same as the vowel in the suffix, when the verb ends on a consonant. The singular clitics have an initial vowel behind a consonant-final verb. After a verb ending on a vowel the consonant-initial allomorph is used for the 1st and 2nd person objects. For 3rd person objects the 3MASC \(w\) appears after verbs ending on \(a\); otherwise it is \(h\). The 3FEM \(h\) occurs after \(a\); other vowel endings merge with the suffix into -wah, after back vowels, and into -yah after front vowels. Examples are 8a:f-u:h \(8a:f-a-na\), ‘he saw him’, ‘he saw us’; jib-tu \(\rightarrow\) jibtwah, ‘you brought her’. The phonological rules of High Vowel Raising and vowel deletion also apply here, which yield rather opaque structures like: kital, ktiluh, kitalan, ‘he killed’, ‘he killed him’, ‘he killed her’.

According to Ingham (1982: 74ff.), this structure has become more regularised than in Classical Arabic, that is, masculine suffixes tend to have an \(a\) vowel, and feminine suffixes an \(i\), and, furthermore, singular would be expressed by VC suffixes, and plural
by CV(C). In contrast with Classical Arabic the form of the Najdi Arabic suffixes is more motivated, both phonologically as well as semantically.

4.3.1.7 Stem classes

As in most Arabic varieties, variations in the consonantal skeleton induce allophony and allomorphy in the conjugation (cf. 4.2.1.6). As in Classical Arabic, sequences of CV2CV3, where CV2=CV3, are avoided, and CV2 is deleted. In comparison with their non-doubled counterparts such doubled verbs appear as a result of metathesis: sakan-aw → (CaC) skan-aw, ‘dwell’, 3MASC.PL versus sabab-aw → sabaw, ‘curse’, 3MASC.PL. When consonantal suffixes follow, an e: in the active, and i: in the passive is inserted, e.g. sabbe:na, 1PL. 68 When no suffixes follow, degemination takes place.

Verbs with a weak first consonant behave like strong verbs when C1 is followed by a vowel, e.g. Mr, ‘command’, amar, 3MASC.SG.ACT.PERF. When followed by a consonant, the weak consonant is absent and the preceding vowel is lengthened, e.g. ya:mir → ya:mir ACT.IMPERF. In several instances, an i: is expected, but an u: occurs, e.g. in yi:mir → yu:mar, PASS.IMPERF. This can be explained when an underlying u instead of an i as v1 is assumed (cf. Table 4.11). According to Prochazka (1988: 61ff.), if the first consonant is an alif, it is also deleted in the perfect.

When C2 is weak, the rules for weak consonants interact with other phonological rules, resulting in an opaque relation between the weak consonant, and the phonological form (cf. Table 4.16).

Table 4.16 Najdi Arabic weak consonant stems

<table>
<thead>
<tr>
<th>Pattern</th>
<th>Active</th>
<th>Passive</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Perfect</td>
<td>Imperfect</td>
</tr>
<tr>
<td></td>
<td>3rd person</td>
<td>others</td>
</tr>
<tr>
<td>Pattern 1</td>
<td>Ca:C</td>
<td>Ci:C</td>
</tr>
<tr>
<td>Pattern 4</td>
<td>^aCa:C</td>
<td>^aCaC</td>
</tr>
<tr>
<td>Pattern 8</td>
<td>Cta:C</td>
<td>CtaC</td>
</tr>
<tr>
<td>Pattern 10</td>
<td>staCa:C</td>
<td>staCaC</td>
</tr>
</tbody>
</table>

Table 4.16 gives, for instance, for JB, ‘bring’, ja:baw, 3MASC.PL.ACT.PERF and ji:bi:na, 1PL.PASS.PERF. Pattern 1 has three sub-classes, defined by the kind of weak consonant, w, y, or l.

If the third consonant is weak, the following rules provide the correct forms (S is a weak consonant, and v stands for a vowel):

68 Synchronically this can be considered as an insertion. Diachronically, these verbs have changed their augmentation pattern, and are modelled after pattern 2 (Versteegh, pers.comm.).
These rules partially depend on morphological information, since slightly different rules apply in declensions of nouns with weak third consonants.

As in Classical Arabic the effect of weak consonants depends on the kind of weak consonant, the surrounding vowels, the syllable structure of the verb, and morphological information. Related Arabic dialects in Iraq have reduced the variation caused by weak consonants (cf. Ingham 1982: 39).

As in Classical Arabic different conjugations also emerge thanks to different vowel patterns in the active voice of the basic pattern. However, there are basically only two patterns left, which, according to Ingham (1994), partly follow the semantic distinction between transitives and intransitives. The transitives have a CaCaC-stem in the perfect, and an aCCaC stem in the imperfect. The intransitives have a CaCiC stem in the perfect, and an aCCaC stem in the imperfect. In contrast with Classical Arabic, these vowel patterns are far less uniform throughout the paradigm, because of the pervasive effects of the phonological rules that govern vowel quality.

4.3.2 Analysis

As in all languages discussed so far, the Economy Principle and the Transparency Principle play a role in accounting for the Najdi Arabic data. Najdi Arabic stands out because of the promotion of several phonological principles that have had a pervasive effect on the morphological principles.

4.3.2.1 Economy

In Najdi Arabic the Economy Principle is ranked slightly higher than in Classical Arabic. The augmentation system has remained largely unchanged; a few semantic shifts have taken place, but the system as a whole has not moved towards less or more Economy. The various augmentation patterns are still only partly predictable in their meaning, and also the two stem classes have only a vague relation to notions of agentivity (cf. Ingham 1994: 73).

The syntactic categories expressed in Najdi Arabic are also largely the same. Passive versus active voice and perfect and imperfect aspect are still expressed. Three persons are still distinguished, and two genders. However, as in all modern dialects, one number category has disappeared, the dual. Categories of the object are also expressed. One category has completely disappeared: mood. In contrast with the sedentary dialects, where gender is not expressed in all plural forms, in Najdi Arabic the same combinations of categories are possible as in Classical Arabic.

4.3.2.2 Transparency

Under this heading I discuss the four possible violations of the Transparency Principle, that is, fusion, homonymy, fission and allomorphy.
The general structure of Najdi Arabic is similar to Classical Arabic, and the same categories are still fused, that is, person, gender and number, in both the subject and the object affixes (cf. 4.2.2.2). As in Classical Arabic, aspect and voice are not fused. Aspect licenses the choice of PGN affixes and the choice of a particular consonantal skeleton, while voice only triggers a particular vowel pattern.

Structural homonymy comprises the category combinations that are structurally conflated. This is essentially the reformulation of the Economy Principle in terms of the Transparency Principle, because every filtering of a category combination is at the same time a conflation, that is, a violation of the No Homonymy Principle. Structural homonymy comprises therefore the same forms as mentioned under Economy above. In addition there is so-called accidental homonymy, in which forms are just accidentally the same, without any filtering out on the level of meaning (cf. section 2.1.2.2, and Carstairs-McCarthy 1987). In Najdi Arabic the 2SG.MASC.IMPERF and 3SG.FEM.IMPERF are still accidentally the same. As in other Arabic varieties, like Moroccan, the 2SG.MASC.PERF and 1SG.PERF are also accidentally the same in Najdi Arabic as spoken by the Shammar.

In other Najdi dialects however, more homonymies occur. The further away from the Najdi heartland of the Shammar, the more homonymies occur. These homonymies occur between active and passive voice, firstly in the intransitive verb class. Ingham (1982: 45ff.) distinguishes between several stages in the increase in these homonymies:

1. The first stage is represented by the Shammar, where passive and active voice are fully distinguished.
2. The second stage is represented by the closely related dialect of Sudair, where the intransitive active imperfect $v_1$ is $i$ instead of $a$ (cf. Table 4.10 and Table 4.11 above and Prochazka 1988: 34). This results in the conflation of passive and active voice for intransitive imperfect forms.
3. Third, there are tribes where the internal passive voice only exists for third persons. In those instances perfect intransitive forms like, $\text{sim}^\text{f}^\text{na}$, ‘hear’, 1PL.PERF.ACT disappear, and, instead the active form is similar to the passive form, $\text{sm}^\text{f}^\text{na}$.
4. Fourth, there are tribes, mainly in Mesopotamia, where the passive is only used in poetry and idiomatic contexts. In these varieties the formation of the intransitive stem class is merged with passive formation in the transitive class, which leads to the collapse of the four conjugations, passive versus active, and transitive versus intransitive, to only two conjugations. Partially, the conjugations for the imperfectives of the transitive and intransitive classes also merge, yielding even less variation.
5. In the fifth stage, the vowel infixes in the stem are not distinguished by transitivity, voice or aspect any longer. In these dialects of Mesopotamia, as in most sedentarised dialects, root vocalism is fully defined by phonological rules, while other information is expressed outside the root. The augmentations express voice, while the PGN suffixes in combination with syllable structure express aspect.

The kind of homonymy at stake here falls between accidental and structural. The possibility for active and passive forms to become homonymic is accidental, because the change in application of the phonological rules made the passive and active voices accidentally look more similar. The actual occurrence of homonymy, however, is triggered by structural considerations as well. From a phonological point of view, it was also possible that the $v_1$ of the imperfect transitive verb class had become $i$. The conflation, however, took first place only in the intransitive class. Although
passivisation of intransitives was possible, and was actually frequent in Classical Arabic (Versteegh, pers.comm.), the conflation between active and passive was somehow easier in this semantically defined class.

The other conflation of the vowel pattern of the intransitive class with the pattern of the passive was also only possible thanks to close phonological similarity, but the route taken towards conflation was led again by structural considerations, since 3rd person forms were exempted from the conflation. That is, simīt-t 2SG.MASC.PERF.ACT and smīt-t 2SG.MASC.PERF.PASS are conflated at the third stage, while simīt 3SG.MASC.PERF.ACT and smīt 3SG.MASC.PERF.PASS are not conflated at that stage.

The Transparency subprinciple “No Fission” operates in Najdi Arabic in the same way as it did in the Classical language.

The No Allomorphy constraint is violated in Najdi Arabic in several ways. As in Classical Arabic, the expression of aspect and voice is sensitive to the stem class of the verb and the consonantism of the root, that is the presence of weak consonants. The extent of allomorphy has decreased with respect to the number of stem classes; in the Najdi Arabic of the Shammar verbs fall into two formal classes, while in Classical Arabic there were five patterns by which perfect and imperfect vocalism could be related to each other. This is partly explainable by the lower functional load of the i/u distinction, which no longer yields grammatical distinctions. But even when abstracting from the i/u difference in Classical Arabic, there has been a reduction in the number of perfect-imperfect relations (cf. Table 4.3 and Table 4.11 above).

Allomorphy due to weak consonants still widely occurs in Najdi Arabic. However, because of the partial conflation of i and u, there is a little less allomorphy. In addition, some allomorphy between strong versus weak verb suffixes has disappeared; that is, in contrast with Classical Arabic in the 3PL.MASC.PERF, in Najdi Arabic the suffix -aw is used in both strong as well as weak verbs.

On the other hand there is more allomorphy in Najdi Arabic, because of the higher importance of several phonological rules. Thanks especially to the Short Vowel Raising Rule, the Guttural Rule and the Resyllabification Rule, the relation between vowel quality and aspectual and voice category has become more obscure. For instance, an i on v1 position may mark passive voice, but it may also be a result of the Short Vowel Raising Rule, and therefore mark active voice. An i on v2 position can be a raised a perfect marker, a genuine perfect marker in the intransitive, a marker of the imperfect in the transitive class, or a marker of the perfect in the passive voice. The relation between vowel quality and aspect/voice is further clouded by the variation of aspect and voice expressions among the various Najdi dialects, as we saw above under homonymy.

Shammar Arabic differs from most other Arabic varieties by maintaining the Classical Arabic internal passive and the 4th augmentation pattern. Like other modern Arabic varieties it differs from Classical Arabic in having lost the mood suffixes. However, there is also an innovation originating from the Shammar region that is different from both Classical and modern Arabic. Several suffixes of the object pronominal system have changed, e.g., instead of Classical Arabic -kum/-hum, 2MASC.PL.OBJ/3MASC.PL.OBJ, Shammar Arabic has -kam/-ham. According to Ingham (1982: 74ff.), these changes have made the language more complex since they introduce more lexical forms. However, the case is not so clear-cut, since the allomorphy is phonologically conditioned, and the
neighbouring dialects, which do not have these new forms, also have some phonologically conditioned allomorphy in some of their object suffixes. Moreover the object pronounal system of the Shammar seems to be more semantically motivated than before (cf. 4.3.1.6).

In conclusion, in the Arabic variety of the Shammar the former relatively transparent structure has been obscured by phonological rules, but the stem internal expression of aspect and voice has not been wiped out. In less isolated varieties voice and aspect are not usually expressed in this way. On one hand allomorphy is ranked a little lower owing to the disappearance of three of the five kinds of relation between perfect and imperfect vocalism; on the other hand the phonological rules may also induce more allomorphy.

The situation of Najdi Arabic is comparable to the situation of Scandinavian, where phonological rules had also risen in rank resulting in less transparency in comparison to older stages of Germanic. As in Scandinavian, Arabic, from the perspective of Classical Arabic and Najdi Arabic needs only a few triggers to produce far reaching changes in category inventories and allomorphy.

4.3.2.3 Isomorphy

The order in Classical Arabic was:

\[(P_{sub}G_{sub}N_{sub}) - \text{[Verb+Aspect+Voice]} - G_{sub}N_{sub} - \text{Mood} - (P_{obj}G_{obj}N_{obj})\].

I placed \((P_{sub}G_{sub}N_{sub})\) and \((P_{obj}G_{obj}N_{obj})\) between brackets, because \((P_{sub}G_{sub}N_{sub})\) is only prefixal in the imperfect, and \((P_{obj}G_{obj}N_{obj})\) is only present in certain syntactic environments.

The order in Najdi Arabic has not changed fundamentally. The only difference is caused by the disappearance of the category of mood:

\[(P_{sub}G_{sub}N_{sub}) - \text{[Verb+Aspect+Voice]} - G_{sub}N_{sub} - (P_{obj}G_{obj}N_{obj})\].

This indicates that the Najdi affix order complies better with the ideal order I described in 2.1.3.2 since the modal affix is no longer found in the ‘wrong’ place.

4.3.2.4 Other Principles

The Morphological Principle that was operative in Classical Arabic is also operative in Najdi Arabic. The phonological rules operative in Classical Arabic still apply in Najdi Arabic; for instance, the rule that forbids \(C_yC_b\) sequences where \(C_y = C_b\) also exists in Najdi Arabic. Furthermore, although the exact deviations are different, the weak verbs still deviate from the strong verb conjugations, as in Classical Arabic, because of several phonological rules that apply to weak consonants.

In Najdi Arabic several other phonological principles have become more important than they are in Classical Arabic (cf. 4.3.1.1). Those which affect morphological structure are:

- Do not distinguish between \(i\) and \(u\).
- Insert a vowel between \(C_2\) and \(C_3\) if no vowel follows, or if \(C_3\) is a \(r\), \(l\), \(w\), \(y\), or \(n\).
- Insert an \(i\) after a heavy syllable before a consonantal suffix.
- \(C_iC_vC^\# \rightarrow C_CvC^\#\), which applies from right to left.
- \(C_CvCv \rightarrow C_CvC_v\).
- Vowel quality in open syllables should be high.
• When an /l, n, r, or w/, or an uvular, pharyngeal or glottal fricative follows or precedes a vowel, the vowel should be low.
• Uvular, pharyngeal and glottal fricatives are not allowed syllable-finally when preceded by an a.

At least two Classical Arabic principles are less important. These are:
• CC is not allowed word initially.
• -CCC- is never allowed.

In 4.7 I show how changes in the order of application of these rules (or, in OT terms, changes in constraint ranking) can give insight from a general theoretic perspective into the differences between Classical Arabic, and the modern Arabic varieties like Najdi, Moroccan and Kinubi Arabic.

4.4 Moroccan Arabic

I have used the following sources for the Moroccan Arabic data: Caubet (1993a, 1993b); Holes (1995); Marçais (1977); Taine-Cheikh (1983); Versteegh (1997). The data shows considerable morphological change.

4.4.1 Data

The main differences between Moroccan and Classical Arabic are the reduction in the number of vowels, the change of syllable structure, the reduction in inflectional categories, and the decrease of allomorphy. The general outline of the Moroccan verb, however, has remained the same. The Moroccan Arabic verb still consists of a skeleton of usually three consonants, which can be augmented by affixes, and by consonant and vowel doubling. There are, however, less augmentations in Moroccan than in Classical Arabic. The skeletons, possibly augmented, are fleshed out with a vocalic infix, and can be prefixed by a passive voice marker. The skeleton is further dressed up by affixes that signal person, gender and number of the subject and object, aspect and mood. I will now discuss each separate component in more detail.

4.4.1.1 Phonological preliminaries

Moroccan Arabic, like Classical Arabic, has three long vowels, a, i, and u. In addition, two of the three short vowels of Classical Arabic have subsisted: æ and ø. Their status is however problematic, because ø can in many instances be analysed as an allomorph of æ in the context of velar and uvular consonants, and occurs only sporadically in minimal pairs with æ. Moreover, in the older urban and judaic dialects and in many idiolects the phoneme ø, as distinct from æ, is not attested at all. The value of the other short vowel is also disputed. In most instances æ can be analysed as an epenthetic vowel, resulting from constraints on consonant clustering. However, there are some word pairs where phonotactic rules cannot explain the positioning of æ, e.g. drôb, ‘he hit’ versus the nominal darb, ‘hitting’. Therefore, I will consider the Moroccan Arabic of Fez as having two short vowels. The lessening of short vowels may be a result of contact with Berber speakers (cf. Lévy 1996: 133).

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69 See note 55.
The phonetic difference between the so-called short and long vowels is not primarily one of quantity, but one of distribution. Short vowels do not appear in open syllables, while long vowels may appear in both open and closed syllables. Furthermore, the short vowels display more allophonic variation, that is, they are more unstable; \( o \) and \( a \) are only convenient labels for the allophonic range \( [u] \), \( [o] \) for \( o \), and \( [a], [i], [a] \), and \( [u] \) for \( a \). Therefore ‘short’ and ‘long’ should not be considered to refer straightforwardly to phonetic quantity.

These changes in the system of vowels changed the range of allomorphy, and the number of possible contrasts through vocalism. Furthermore, in many environments short vowels have disappeared, and long vowels have become shorter. This has led to new constraints on syllable structure, which, in combination with the restrictions on distribution of short vowels, has led to more instances of metathesis, which makes the inflectional structure less transparent, cf. the forms in Table 4.18.

4.4.1.2 Augmentations

In Classical Arabic the augmentations of the root resulted in ten frequent and five rare patterns. In Moroccan Arabic however, only six patterns are still used in colloquial speech. These are, in addition to the basic pattern, patterns 2, 3, 5, 6, and 11 (or 9, see below). In some dialects there are some sporadic instances of pattern 7 and pattern 10 verbs, which must have been borrowed from Classical or Standard Arabic (Caubet 1993a: 50). Several pattern 8 and 9 verbs have also subsisted. In Moroccan Arabic these conjugate as pattern 11 (or 9) verbs. Pattern 4 expressed causative meaning in Classical Arabic, although perhaps with a slightly different meaning (Boumans, pers.comm.), which is today only expressed by pattern 2, or by analytical means. According to Boumans (pers.comm.) there are also some relics of pattern 4 in lexically related transitive/ intransitive pairs. Borrowings from Spanish and French conjugate like pattern 1, 2 or 3 verbs that end on a weak consonant.

In Classical Arabic the passive voice is expressed with vowel alternations, although pattern 5, 6, 7 and 8 also result in a kind of passive, reflexive, or reciprocal meaning by affixing \( t \) or \( n \) (cf. 4.2.1.1). In the sedentary dialects of Moroccan Arabic there is only one way to render a passive voice, namely by a prefix with the allomorphs \( t \), or \( tt \) in the Fez dialect (Caubet 1993a: 33), and also \( nt \), \( n \) and \( tm \) in other dialects (Taine-Cheikh 1983: 77). Moroccan Arabic has replaced the internal passive voice by a system composed of material from the augmentation system. The exact way in which the augmentation and voice system has changed is complex; besides the \( t \)-prefix, the \( n \)-prefix of the 7th pattern seems to have played a role, although this latter pattern does not exist in Moroccan anymore. Taine-Cheikh (1983: 77) says: “…we are conscious of the fact that the [passive] forms certainly do not have the same formation, and that they are not explained only by analogical remodelling on the 5th and 6th [augmented] forms with prefix \( t \).”

\[ \text{Cf. Boumans (1998) for a discussion of the phonological and morphological conditions of this allomorphy.} \]

\[ \text{“…nous sommes conscients du fait que ces formes sont loin d’avoir toutes la même formation et qu’elles ne s’expliquent pas uniquement par remodelage analogique sur les 5é et 6é formes à préfixe } t/-.” \]
The augmentations and internal vowel patterns can be seen in Table 4.17. These vowel patterns have been severely affected by their different phonological make-up. The numerals refer to the augmented patterns.

### Table 4.17 Moroccan Arabic augmentation patterns

<table>
<thead>
<tr>
<th>Pattern</th>
<th>Imperfect</th>
<th>Perfect</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>$C_1C_2y_2C$</td>
<td>$C_1C_2y_2C_3$</td>
</tr>
<tr>
<td>1$^*$</td>
<td>$tC_1C_2y_2C$</td>
<td>$tC_1C_2y_2C_3$</td>
</tr>
<tr>
<td>2</td>
<td>$CvCCvC$</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>$tCvCCvC$</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>$Cv:CvC$</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>$tCv:CvC$</td>
<td></td>
</tr>
<tr>
<td>9/11</td>
<td>$C_1C_2yC$</td>
<td></td>
</tr>
</tbody>
</table>

Pattern 1 is the basic pattern which no longer has extensive allomorphy in its vowel alternation. The second vowel in the imperfect is in fact an $u$ in only 4% of the verbs, although in weak verbs the vowel pattern remains sensitive to aspect. Pattern 1$^*$ is the extension of pattern 5 and 6 to pattern 1 (see below).

Pattern 2 is formed by doubling the second consonant of the basic form: $C_1C_2C_2C_3$. In Moroccan Arabic this pattern has a causative or intensive value, e.g. $^C LM$, “to know” $\Rightarrow$ $^C LLM$ “to teach”. It may also have a denominal sense, e.g. $ktal$, “black”, $katla$, “to blacken”.

Pattern 3 was formed in Classical Arabic by lengthening of the $v_1$ of the basic form: $C_1v_1:C_2C_3$. After vowel reductions in Moroccan Arabic this means that pattern 3 is formed by having an $a$ behind the first root consonant. When $C_1C_2C_3$ denotes an act that affects an object, pattern 3 denotes the attempt to perform that act. $SLH$ “be good” $\Rightarrow$ $S\alpha L\alpha H$ ‘reconcile’.

Pattern 5 adds a $t$-prefix to pattern 2 verbs: $C_1C_2C_2C_3 \Rightarrow tC_1C_2C_2C_3$. It expresses the state into which the object of the action denoted by the second form is brought. Its meaning is passive, reflexive, or effective. For example, $^C LLM$ “to teach” $\Rightarrow ^t C LLM$ “to learn”.

Pattern 6 adds the $t$-prefix to pattern 3 verbs: $C_1aC_2C_3 \Rightarrow tC_1aC_2C_3$. Its meaning is like the meaning of pattern 5, effectsing a passive or reciprocal sense of the pattern 3 verb. $S\alpha L\alpha H$ ‘reconcile’ $\Rightarrow tS\alpha a L\alpha H$ ‘to reconcile with each other’.

Pattern 11 is a conflation of former patterns 8 and 10. It has the form, $C_1C_2aC_3$, and mainly denotes so-called ‘quality verbs’, like $HMaR$, ‘being red’. When there is a person suffix, then after the $C_3$, another long or assimilated vowel appears, cf. 4.4.1.4. According to Versteegh (pers.comm.) this could be the ninth pattern as well, in which the second vowel has been lengthened.
As in Classical Arabic there are also some four-consonantal roots, conjugated like pattern 2 of the tri-consonantal roots. The passive form of verbs of this class behave like the passive form of tri-consonantal verbs of pattern 2, that is, like pattern 5 verbs. Unlike Classical Arabic, however, no other augmentations in four-consonantal verbs are possible.

4.4.1.3 Aspect and voice

Voice is no longer expressed by stem internal vowel modification, cf. section 4.4.1.2. Fewer vowel distinctions and stricter constraints on syllable structure have reduced the possibilities to express voice in this way. In Moroccan Arabic prefixation is the only means to express passive voice. Today all transitive verbs can be passivised by a prefix. A reduction in the previous internal way of expressing voice has taken place, but on the other hand, the prefixal process to express passive voice has become more productive in Moroccan Arabic.

The reduction in vowel distinctions resulted in only a few strong verbs where an aspectual vowel alternation subsists, e.g. \textit{sk\textasciitilde n} / yskon, PERF/IMPERF, ‘he lived’.\footnote{Caubet (1993b: 32) mentions only twelve verbs which have this distinction. According to Boumans (pers.comm.) this distinction is highly variable among speakers.} Moreover, this alternation is partly phonologically conditioned, since it occurs mainly in the context of back consonants (Boumans, pers.comm.). In strong verbs aspect is now mainly visible from the differences between the two sets of PGN affixes. In verbs with a weak second or third consonant, however, the quality of the stem vowel depends on aspect, cf. 4.4.1.7.

Caubet (1993b) argues that the aspectual distinction between an imperfect and a perfect meaning is changing in the modern Arabic varieties towards a primary distinction in terms of simultaneity (cf. Caubet 1993b: 151ff.). Indeed, in Moroccan Arabic the aspectual value of the verb does not directly refer to a perfect or imperfect meaning, in the sense of Comrie (1976). Depending on the presence of the mood prefix and on the finite status of the verb, various meanings can result. However, the two conjugation types still clearly exist, and they decisively contribute to the over-all meaning of a verbal predicate.

4.4.1.4 Person, gender and number

As in Classical Arabic, there are two sets of PGN affixes, which in Moroccan Arabic have a higher functional load, since they also carry most of the aspectual meaning in strong verbs. There are still two genders, and three person distinctions, but only two numbers, since the dual no longer exists. Furthermore, some gender-person combinations no longer exist. In the imperfect, there are no gender distinctions in the plural, and in the perfect there is no gender distinction in the 2SG anymore. The affixes of the perfect and imperfect stems are in Table 4.18 and Table 4.19.\footnote{The alternation, or metathesis, between \textit{k}\texttt{t\textasciitilde b} and \textit{k}\texttt{t\textasciitilde b} in the paradigm is a result of the phonological constraint on open syllables. \textit{ka} is the mood marker, see below.}
Table 4.18 Moroccan Arabic Perfect inflection

<table>
<thead>
<tr>
<th></th>
<th>sing</th>
<th>plur</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>ktab -t</td>
<td>ktab -na</td>
</tr>
<tr>
<td>2m</td>
<td>ktab -ti</td>
<td>ktab -tu</td>
</tr>
<tr>
<td>2f</td>
<td>ktsb -</td>
<td>katab -u</td>
</tr>
<tr>
<td>3m</td>
<td>ktab -at</td>
<td>ktab -at</td>
</tr>
<tr>
<td>3f</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 4.19 Moroccan Arabic Imperfect inflection

<table>
<thead>
<tr>
<th></th>
<th>sing</th>
<th>plur</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>(ka)-n-ktb</td>
<td>(ka)-n-katab-u</td>
</tr>
<tr>
<td>2m</td>
<td>(ka)-t-ktb</td>
<td>(ka)-t-katab-u</td>
</tr>
<tr>
<td>2f</td>
<td>(ka)-t-katab-i</td>
<td></td>
</tr>
<tr>
<td>3m</td>
<td>(ka)-y-ktb</td>
<td>(ka)-y-katab-u</td>
</tr>
<tr>
<td>3f</td>
<td>(ka)-t-ktb</td>
<td></td>
</tr>
</tbody>
</table>

For Classical Arabic I assumed a morphological principle which demands a fissioned insertion of a fused PNG-category for the imperfect (cf. section 4.2.2.4). For Moroccan Arabic such an analysis is still profitable, since it would solve the problem that gender is expressed with a suffix in the 2SG, while it is expressed with a prefix in the 3SG. The fused PGN category may spread over the prefixal and suffixal position. The category specifications for the affixes of the imperfect are then as in Table 4.20.

Table 4.20 Moroccan Arabic affixes of the imperfect

<table>
<thead>
<tr>
<th>Form</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>n-</td>
<td>1</td>
</tr>
<tr>
<td>y-</td>
<td>3 masc</td>
</tr>
<tr>
<td>t-</td>
<td>Ø</td>
</tr>
<tr>
<td>-i</td>
<td>fem/2</td>
</tr>
<tr>
<td>-u</td>
<td>plur</td>
</tr>
<tr>
<td>-ø</td>
<td>Ø</td>
</tr>
</tbody>
</table>

4.4.1.5 Mood

The verb-final mood suffixes of the imperfect in Classical Arabic, do not exist in Moroccan Arabic. However, in Moroccan Arabic mood is indicated by an obligatory grammaticalised pre-verb, *ka-*, which has dialectal alternants like *ta-*, *tta-*, and *qa-*. It probably derives from a form of the existential verb *kana* (cf. Ferrando 1996: 126ff.), while the other forms had meanings like ‘here’, or ‘sit’ in Moroccan Arabic. The use of such a construction may have been entrenched by Berber influence in Moroccan Arabic, since in Berber languages such constructions also exist (Caubet 1993b: 185ff.).

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75 Whether they were still in use when Islam began is uncertain, cf. section 4.1.2.
The prefix ka- is used in the indicative, or realis, for imperfect aspect only. The bare imperfect form of Classical Arabic is now used for the subjunctive and other modal meanings like dubitative, uncertain future, and counterfactual. The bare imperfect form can have both perfect and imperfect meanings. In some regions this ka- is sensitive to person (cf. Caubet 1993b: 184ff.), but in most dialects it is an unaltered prefix preceding the person prefixes of the imperfect forms, e.g. 

\[ \text{kanktā} \] ‘I am writing’; and \[ \text{kayktā} \] ‘he is writing’. Thus the mood suffixes have not simply disappeared or been eroded, but the whole modal system has been reshaped.

4.4.1.6 Object clitics

The object pronouns in their bound form are considered by Caubet (1993a: 160) to be suffixes. In Moroccan Arabic, the pronominal suffixes are as in Table 4.21.

<table>
<thead>
<tr>
<th></th>
<th>sing</th>
<th>plur</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>...-ni</td>
<td>...-na</td>
</tr>
<tr>
<td>2m</td>
<td>...-(o)k</td>
<td>...-kum</td>
</tr>
<tr>
<td>2f</td>
<td>...-ki</td>
<td></td>
</tr>
<tr>
<td>3m</td>
<td>...-u/-h</td>
<td>...-hum</td>
</tr>
<tr>
<td>3f</td>
<td>...-ha</td>
<td></td>
</tr>
</tbody>
</table>

Examples are: \text{drabikum}, \text{drabtu}, ‘I beat you (plur), him’.

4.4.1.7 Stem classes

As in Classical Arabic, the augmentations and affixations display some variation, although to a lesser extent, depending on the quality of the consonants of the skeleton (cf. 4.2.1.6). Verbs with an identical consonant in the second and third position deviate from the basic pattern by displaying metathesis. This also occurs, for phonological reasons, in forms with vowel initial PGN suffixes (cf. 4.4.1.1, and 4.4.2.2). In these verbs metathesis takes place in almost the whole paradigm, yielding a conjugation on the basis of \( C_1C_2C_3 \), e.g. SG.IMPERF.REAL of DKK ‘to pile’: \text{kandkk}, \text{katdkk}, \text{katdkk}. They also trigger long vowels in the PGN suffixes in the 1\textsuperscript{st} and 2\textsuperscript{nd} person perfect: \text{dekk-t} \rightarrow \text{dekk-it}, \text{dekk-ti} \rightarrow \text{dekk-iti}, etc.

Weak verbs (cf. 4.2.1.6) with an initial weak consonant behave like basic forms in the finite conjugation. In Moroccan Arabic there is a substantial group of verbs which have a vowel in their skeleton instead of a second consonant. These correspond to the Classical Arabic verbs with a semi-vowel as second element in the CCC-skeleton. In Moroccan Arabic these verbs are regular with respect to the PGN affixes in the imperfect. They deviate in the perfect, where 3PERF always has the vowel \( a \), while other persons shorten the vowel in their stem, \( a \), and \( i \) becoming \( o \), and \( u \) becoming \( o \). An

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76 These affixes are phonologically integrated in the word, that is, some assimilation takes place. Stems ending in a vowel behave slightly differently, and the vowel preceding the object affix is not subjected to stress-induced word-final vowel shortening.

77 At least in all forms discussed here, but not in the passive participle (cf. Caubet 1993: 35).

78 Two verbs, kla ‘to eat’, and xda, ‘to take’ behave slightly differently.
example of such a verb is: GUL, ‘to say’: 2FEM.SG.IMP.REAL katguli, 3PL.IMP.REAL kaygulu, 2PL.PERF.REAL goltu, 3PL.PERF.REAL gulu. These ‘deviations’, in fact, are the relics of the vowel alternations in Old Arabic which indicated aspect in both strong and weak verbs.

Verbs with a weak consonant in the third position in the skeleton display most variation. In the perfect aspect they have, irrespective of the quality of the semi-vowel, an a at the end of the stem in the third person, or an a, word-finally, in the 3MASC.SG. In the other persons, the stem ends on i. The whole paradigm of the perfect is as in Table 4.22.

Table 4.22 Moroccan Arabic weak verb perfect inflection

<table>
<thead>
<tr>
<th>Person</th>
<th>bda ‘to begin’</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.SG</td>
<td>bdi -t</td>
</tr>
<tr>
<td>2.SG</td>
<td>bdi -ti</td>
</tr>
<tr>
<td>3.MASC.SG</td>
<td>bda -ø</td>
</tr>
<tr>
<td>3.FEM.SG</td>
<td>bda -t</td>
</tr>
<tr>
<td>1.PL</td>
<td>bdi -na</td>
</tr>
<tr>
<td>2.PL</td>
<td>bdi -tu</td>
</tr>
<tr>
<td>3.PL</td>
<td>bda -w</td>
</tr>
</tbody>
</table>

In the imperfect there are three classes, with forms ending in a, i, or u. The imperfect PGN vocalic suffixes become semi-vowels, or assimilate to the stem. The three classes are conjugated as in Table 4.23.

Table 4.23 Moroccan Arabic weak verb imperfect inflection

<table>
<thead>
<tr>
<th>Person</th>
<th>bda ‘to begin’</th>
<th>bg. ‘want’</th>
<th>h.bu ‘kruipen’</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.SG</td>
<td>ka-n-bda</td>
<td>ka-n-bg.i</td>
<td>ka-n-h.bu</td>
</tr>
<tr>
<td>2.MASC.SG</td>
<td>ka-t-bda</td>
<td>ka-t-bg.i</td>
<td>ka-t-h.bu</td>
</tr>
<tr>
<td>2.FEM.SG</td>
<td>ka-t-bda:y</td>
<td>ka-t-bg.i</td>
<td>ka-t-h.bu</td>
</tr>
<tr>
<td>3.MASC.SG</td>
<td>ka-y-bda</td>
<td>ka-y-bg.i</td>
<td>ka-y-h.bu</td>
</tr>
<tr>
<td>3.FEM.SG</td>
<td>ka-t-bda</td>
<td>ka-t-bg.i</td>
<td>ka-t-h.bu</td>
</tr>
<tr>
<td>1.PL</td>
<td>ka-n-bda:w</td>
<td>ka-n-bg.iw</td>
<td>ka-n-h.bu</td>
</tr>
<tr>
<td>2.PL</td>
<td>ka-t-bda:w</td>
<td>ka-t-bg.iw</td>
<td>ka-t-h.bu</td>
</tr>
<tr>
<td>3.PL</td>
<td>ka-y-bda:w</td>
<td>ka-y-bg.iw</td>
<td>ka-y-h.bu</td>
</tr>
</tbody>
</table>

In Classical Arabic strong verb stems were also sensitive to aspect. In Moroccan Arabic there are only a few verbs in which vowel alternation still occurs (cf. 4.4.1.3). Interestingly not all of these verbs are from the same subclass as in Classical Arabic. For instance, dhil/ kaydhol ‘enter’ is derived from the Classical Arabic daḥala/ yadḥalu, ‘enter’, while rgil/ kayrgil ‘sleep’ is derived from rasada/ yarqghilu ‘sleep’. This may be explained however, by the variations that already existed in Classical Arabic (Versteegh, pers.comm.).
4.4.2 Analysis

4.4.2.1 Economy

The categories expressed in the Moroccan Arabic verb are mood, aspect and voice, and person, gender and number of both the subject and object. Although these are the same categories as in Classical Arabic, several changes have taken place. Before turning to these changes, I will say something about voice and the augmentation system.

The derivational augmentation system of Classical Arabic has considerably shrunk in Moroccan Arabic, cf. section 4.4.1.2. One pattern, which prefixes a - and renders a passive meaning, has extended its domain of application, while the infixed voice device has disappeared. In Classical Arabic - was only prefixed to pattern 2 and pattern 3 verbs. In Moroccan Arabic - can be prefixed to all verbs, thereby making former pattern 7 and 8 redundant. This meant in fact the emergence of a new passive marker which replaced the earlier internal passive. The conditions of use of the new marker are less sensitive to lexical properties of the verb. The loss of pattern 7 and 8 is peculiar for Maghrebian Arabic varieties. These patterns still exist in other Arabic varieties where pattern 7 has the extended passive meaning which in Maghrebian Arabic has been moulded on the pattern 2 -prefix (Taine-Cheikh 1983: 75ff.).

In general, the erosion and disappearance of derivational morphology does not necessarily imply a more transparent or smaller lexicon, since the number of unstructured lexical items may rise as a result (cf. section 1.5.3, and also Mühlhäusler 1974). In the Arabic case, however, the loss of derivational word structure has not led to a larger lexicon, since the meanings of the derivational processes lost are now expressed by more regular devices. For instance, the several slightly different meanings of pattern 5, 6, 7 and 8 have been subsumed by one more uniform way of expressing passive voice, that is, the -prefix.

Aspect is more apparent from the choice of affixes than from vowel alternation in the stem (cf. 4.4.1.3 and 4.4.1.7). Economy does not apply to the category of person in Moroccan Arabic. Dual number has disappeared as in most Arabic varieties, and in the plural and in the 2SG.PERF, gender too, can no longer be distinguished.

The affix specification for the imperfect PGN affixes has changed as in Table 4.24.

<table>
<thead>
<tr>
<th>Classical Arabic</th>
<th>Moroccan Arabic</th>
</tr>
</thead>
<tbody>
<tr>
<td>^-=1</td>
<td>-</td>
</tr>
<tr>
<td>n-=1, pl</td>
<td>n-=1</td>
</tr>
<tr>
<td>t-=2</td>
<td>t-=2</td>
</tr>
<tr>
<td>t-=fem</td>
<td>t-=fem</td>
</tr>
<tr>
<td>y-=ø</td>
<td>y-=ø</td>
</tr>
<tr>
<td>-a:ni=dual</td>
<td>-</td>
</tr>
<tr>
<td>-na=fem, pl</td>
<td>-o=ø</td>
</tr>
<tr>
<td>-u:na=pl</td>
<td>-u=pl</td>
</tr>
<tr>
<td>-i:na=fem/-2</td>
<td>-i=fem/-2</td>
</tr>
<tr>
<td>-u=ind</td>
<td></td>
</tr>
</tbody>
</table>
To infer the correct form from a given meaning, as in Classical Arabic, the Panini Principle, and autonomous structure constraints are used. Noyer (1992: 93) formulates the Panini Principle as follows:

- If one rule’s structural description is contained in the other’s, the rule with the more specific structural description applies first (Noyer 1992: 93).

This implies that affixes with empty specifications, ø, correspond to the default case, or to the so-called “Elsewhere” condition. For instance, in the Classical Arabic affix table 3SG is expressed with the prefix ɣ, since there is no other prefix that contains third person or singular. The autonomous structure constraint of Classical and Moroccan Arabic is:

- Imperfect verb person, gender and number categories are obligatorily expressed in one prefix and one suffix.

Two affixes, -a:ni, and -na, have disappeared since their meanings are filtered out by stricter application of Economy. ɣ has disappeared and n- has taken over its meaning. One might suggest that an analysis with ɣ=1SG and n=1 for Classical Arabic would be more appropriate since, under that analysis, after the disappearance of ɣ, n- automatically takes over the 1SG. However, in such an analysis, the classical Arabic 1.PL would receive a suffix -u:na, which is now prevented by ‘discontinuous bleeding’. That is, the prefix n=1PL prevents the suffix -u:na=PL from appearing, because a category may be expressed only once (cf. Noyer 1992).^79 The lack of plural features in prefixes in Moroccan Arabic results in number being uniformly marked by the plural marker, -u.

Furthermore, the disappearance of ɣ results in a system in which, except for the -i suffix, the prefixes and suffixes each refer to a separate set of inflectional categories. The modal system is radically different in Moroccan, and today only two moods are distinguished instead of three. As in the subject pronominal affixes, in the object affixes reductions have also taken place, and gender is no longer expressed in the plural.

In conclusion, economy ranks higher in Moroccan than in Classical Arabic. There are now more restrictions on expression, particularly of gender and number. Person is still expressed, while aspect, voice, and especially mood are often indicated in quite a different manner.

4.4.2.2 Transparency

**Fusion and fission**

In Moroccan Arabic two changes have taken place: the categories have a less fused character, and alternation between the PGN affixes has become more important for expressing aspect.

In Classical Arabic the verbal prefix could express person, number and gender, and it was only in combination with a suffix, which expressed gender and number, that full specification took place. In Moroccan Arabic fewer categories are expressed, and meaning computation is more straightforward. The prefix expresses person and gender, while the suffix expresses gender and number. Schematically this can be depicted as follows:

^79 Moreover, this analysis, for theoretical reasons, is unable to assume a singular and not a plural specification.
Classical Arabic: PGN - STEM - GN.
Moroccan Arabic: PG - STEM - GN.

In Moroccan Arabic there is a stronger tendency to reserve one position for one category, and there is less fission. The system is not too far from a system where person and number are separated, and where each has its own slot in the verb template. In fact, in some North African dialects (cf. Versteegh 1984: 89) this tendency has persisted. In those varieties gender is no longer expressed, person is expressed by the prefix, and number by the suffix.

Aspect in Classical Arabic was expressed by internal vowel modification, and triggered allomorphy in the PGN affixes. In Moroccan Arabic the stem internal vowel distinctions marking aspect have nearly disappeared in strong verbs, although vowel alternation in the stem persists in weak verbs with a weak 2nd or 3rd consonant. Therefore, aspect is still expressed in the stem, but in many instances the PGN affixes are more important in expressing aspect.

**Homonymy and allomorphy**

In Classical Arabic there is only one case of accidental homonymy in the inflectional paradigm, namely between IMPERF.2SG.MASC and IMPERF.3SG.FEM. This homonymy still exists in Moroccan Arabic.

Some reduction in the extent of allomorphy occurred in Moroccan Arabic. In the Fez dialect the passive voice prefix has two allomorphs, *t* - and **tt** - , the selection of which is phonologically conditioned (cf. section 4.4.1.2), while in Classical Arabic there were several more intricate patterns of derivation to express passive voice.

In Moroccan Arabic there are still several consonant combinations of the skeleton that trigger deviant affix forms and stem vocalism. However, the number of deviations has decreased, while the deviations that still subsist are less complicated, and more phonologically than morphologically conditioned.

The deviance of verbs with C2=C3 is more uniform, and there is less idiosyncratic variation than in Classical Arabic (cf. 4.2.1.6 and 4.4.1.7). Verbs with a weak C1, in contrast to Classical Arabic, do not deviate from the basic pattern. Verbs which have a weak C2 were subject to many rules in Classical Arabic, but can now be more summarily described (cf. section 4.4.1.7). Only in the perfect conjugation in Moroccan Arabic are there some deviations for this group of weak verbs. These deviations are however uniform for all weak C2 verbs. When the C3 consonant is weak some deviation arises (cf. Table 4.22 and Table 4.23), which is, however, far less than the allomorphic variation in Classical Arabic, partly because the weak C3 consonant ‘w’ was reanalysed as ‘y’, or, in other words, levelling took place (Versteegh, pers.comm.).

This decrease in allomorphic effects of weak consonants concurs with a decrease of vowel alternation in the stem in general, and thus Moroccan Arabic tends to treat the verb stem with its vowels more as a unified whole than those found in Classical Arabic. While in Classical Arabic there are five patterns by which imperfect and perfect stem vowels are related, in Moroccan, this patterning is largely restricted to weak verbs. Only

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80 In verbs with an *a* in the imperfect stem, the stem of the third person is invariant.
in a few strong verbs vowel alternation occurs under influence of aspect. In the older pre-
Hilal urban dialects in the north no strong verbs display this patterning.
In one respect there is more allomorphy in Moroccan Arabic. In Moroccan Arabic CV
syllables, where V₁ is a short vowel, are not allowed, and syllables must always have an
onset. This implies that verbs of the form CCV.CV₁(C) are not allowed. Through
metathesis, CV.CV₁CC-V₁(C) is preferred. This leads to widespread phonologically
conditioned allomorphy, e.g. in the perfect conjugation where 1st, 2nd, and 3rd person
plural are respectively kitāb-na, kitāb-tu, but, kāt-b-u.
In conclusion, there is less allomorphy in Moroccan Arabic. Morphologically
conditioned allomorphy has decreased more significantly than phonologically
conditioned allomorphy, but, owing to the importance of syllable structure rules,
allomorphy is still very much a part of the language.

4.4.2.3 Isomorphy
The ideal order of Arabic inflectional affixes, according to section 2.1.3.2, would be:
Verb - Voice - Gobj-Nobj-Pobj - Aspect - Tense - Mood - Gsub-Nsub-Psub.
The order of affixes in Classical Arabic is as given in I., and the order of Moroccan
Arabic in II. The brackets indicate that the affix is not obligatory in every context. P, G,
N stands respectively for person, gender, and number. SUB means subject, and OBJ
object. For the exact distribution of person, gender and number agreement in Moroccan
Arabic, see section 4.4.1.4 above.
I. (PsubGsubNsub) - [Verb+Aspect+Voice] - GsubNsub - Mood - (PobjGobjNobj).
II. (Mood) - (PsubGsub) - (Voice) - [Verb+Aspect] - GsubNsub - (PobjGobjNobj).
The order in Moroccan Arabic is different from the order in Classical Arabic, but does
not correspond any better to the supposed unmarked order of 2.1.3.2. In fact, Moroccan
order is a little worse: voice is expressed outside the verb stem, and aspect fully inside
the stem. PGN affixes still intervene between the mood affix and the verb stem, and, the
object affixes are still placed further away from the stem than the subject affixes. This
latter deviation can be interpreted as an indication for both Arabic varieties that the
object affixes must be analysed as clitics. However, since aspect is almost completely
expressed in the allomorphy of the PGNsub affixes, it complies fairly well with the
Isomorphy Principle.

4.4.2.4 Other Principles
The morphological principles operative in Classical Arabic consisted of position and
order templates, cf. 4.2.1.3, and 4.2.2.4. In Moroccan Arabic such principles still
operate, since the fused PGN meanings are still spelled out into one or two, and never
more than two obligatory positions. In Moroccan Arabic, however, the templates tend not
to refer to the inner consonantal and vocalic structure of the verb root. That is, while the
templates of Classical Arabic were e.g. [pref]-[vCCvC]-[suff]//[±imperfect],
the templates in Moroccan Arabic are e.g. [pref]-[Stem]-[suff]//[±imperfect] for strong
verbs. With respect to weak verbs, however, the vocalism of the stem still demands
reference to the inner structure of the stem.
In 4.4.1.1 I have already discussed some phonological principles. In addition, when
assuming an underlying structure in Moroccan Arabic that equals that of Classical
Arabic, then the constraints on syllable structure not only result in metathesis, but also erase many short vowels from the phonological form. Such a derivation from a ‘deep’ Classical Arabic lexicon to a surface Moroccan Arabic phonological form is, however, nothing else than the historical process, guided by the rising of this constraint (cf. Chomsky and Halle 1969). When reanalyzing the Moroccan lexicon on the basis of the output, the underlying short vowels no longer need to be assumed, and the syllable structure constraint mainly leads to metathesis.

4.5 Nubi Arabic

4.5.1 Data

I have used the following sources for the Nubi and Arabic data, Kaye (1976), Boretzky (1988), Owens (1985), Musa-Wellens (1994), Owens (1997), and Wellens (2003). Nubi is the result of a long process in which Arabic was learned as a second language and used as a lingua franca. The emergence of Nubi at the end of the 19th century represents the final but also most rapid phase of this process. Many features that set Nubi apart from Classical Arabic also characterise other Arabic varieties, like the loss of dual number marking on the verb, shared with most north African Arabic varieties. Other features are only shared with the Sudanic Arabic varieties, like the tendency towards open syllable structure. The most important differences with Sudanic colloquial dialects are the loss of geminates and the loss of person, gender, number and aspect distinctions. The features shared should not be strictly related to the unique history of the Nubi speech community, but also to the history of other Arabic varieties. However, the particular selection of these features and the creation of new structures in the 19th century in the Sudanese camps, is characteristic for Nubi and the other pidgins and creoles that arose in the camps. In the following I will mention whether a feature also exists in other related colloquial Arabic varieties, or whether it is a renovation of Nubi. I will not discuss the correspondences between Nubi and the other Arabic pidgins and creoles in Chad and south Sudan (cf. Owens 1997).

4.5.1.1 Phonological preliminaries

Nubi stands out among most Arabic varieties in having lost all geminates. Like many other colloquial forms of Arabic in the region, Nubi has no pharyngalised consonants, and no interdental fricatives. Most long vowels have become short in Nubi, while retaining the same vowel quality. Differences in vowel length are mainly the result of stress, although there are some minimal pairs. As other Arabic varieties in the region, Nubi has five short vowels.

Nubi is unique among Arabic varieties for having contrastive stress and, in a few restricted environments, contrastive tone. Stress falls usually on the same position in Nubi lexical items as in the Arabic lexical counterparts (Wellens 2003: 42). However, the earlier stress-conditioning environment has often changed, thereby making stress assignment unpredictable, and phonemic. For instance, in other Arabic dialects stress is assigned to the first VCC or VVC sequence from the end of the word, yielding saba ‘seven’, versus sabaah ‘morning’. The corresponding forms in Nubi are, however, saba
A new use of stress is to mark voice.\(^{81}\) Tonal contrasts are also involved in verb nominalisations (Wellens 2003: 43).

Under influence of pharyngalisation vowel harmony is frequent in Arabic varieties. It often occurs in Sudanic varieties, and especially western ones and is also found in Nubi. Nubi, especially the variety spoken in Uganda, has a strong tendency towards an open syllable structure. This feature is also notable in Sudanic Arabic. Nubi carries this tendency much further.

4.5.1.2 Augmentations
Nubi has no means to derive verbs from other verbs by modification of the verb’s consonant structure. Some verbs in Nubi are based on augmented verbs in colloquial Arabic. The patterns of augmentation themselves are not, however, present in Nubi.

4.5.1.3 Voice
Unlike any other Arabic variety Nubi uses stress assignment and tone to express voice (Wellens 2003: 128ff.). Stress is shifted from the initial to the final syllable of the word to derive passive voice, and in addition high tone is used. In monosyllabic verbs it is only tone that expresses voice. Some verbs that end in a consonant attach a vowel to the last consonant, and form a new syllable that can bear stress and high pitch. An example of passive voice is 2):

1) \textit{Anaashrubu moyo.} \\
   I \hspace{1em} \text{drink} \hspace{1em} \text{water} \\
   ‘I drank water.’

2) \textit{Ashrubu moyo.} \\
   \text{drink-PASS} \hspace{1em} \text{water} \\
   ‘Water was drunk, someone drank water.’

This construction is not limited to transitive verbs, and nouns are not marked for case. This morphological stress shift and tonal change may be based on substrate languages like Bari (cf. Boretzky 1988: 65ff.). Another explanation is that it is the grammaticalisation of a syntactic topicalisation device, with an accentual change as an initial side-effect (cf. Wellens 2003: 251).

4.5.1.4 Tense, mood and aspect
Unlike other Arabic varieties Nubi does not use segmental modifications inside the stem to mark aspect, tense or mood, and neither does it use PGN suffix alternation, since it does not have PGN suffixes.\(^{82}\) Like many modern Arabic varieties Nubi uses grammaticalised preverbs to mark verbal categories. Nubi uses also several modal auxiliaries like \textit{kan}, ‘be’, \textit{gen}, ‘sit’, \textit{gay}, ‘stay’, and \textit{ja}, ‘come’ for temporal, aspectual and modal meanings (cf. Wellens 2003), which, however, I do not discuss here.\(^{83}\)

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\(^{81}\) Recent research on Nubi (Versteegh, pers.comm.) suggests however, that these stress phenomena must in fact be analysed as tonal phenomena.

\(^{82}\) Stress shift however is used, see above.

\(^{83}\) The stressed particle \textit{kan} marks anterior tense, and has a pluperfect meaning, or, with static verbs, a past tense meaning (cf. Musa-Wellens 1994: 41ff.). Its form is derived from a form of Arabic \textit{kana}, ‘to be’. It is a particle and not a prefix since it is not obligatorily linked to the verb.
In Nubi bare verbs refer to the past, except bare verbs that reflect states, mental activity, emotion and possession. These static verbs refer to the present. This may be due to the similarity between the bare stems Nubi has taken over from the lexifier, Arabic, and the perfect stem in Arabic that also usually refers to the past. However, it may also be a result of a universal process of creolisation (cf. Bickerton 1981; Wellens 2003: 154). Bare verbs may also refer to other aspectual and temporal situations, on the condition that this is indicated by the (linguistic) context.

The prefix gi is used for marking non-punctuality, that is, progressive or habitual aspect. It usually implies present tense reference, although, again, the context may force another temporal interpretation. It is possibly derived from the auxiliary verb ga:'nd, ‘sit’ used in other Arabic varieties in the region. In Nubi this verb has also non-grammaticalised counterparts, ge:n, ‘sit’, and gai, ‘stay, remain’. The grammaticalisation into a pre-verb of this particular habitual meaning is unique to Nubi and Juba Arabic.

The prefix bi- is used with reference to the future, and it may have irrealis and habitual connotations as well. Boretzky (1988: 60) already noted that bi and gi are often interchangeable, and extensive research by Wellens (2003: 110ff.) shows that bi and gi are fully equivalent when expressing habituality. Today the gi-marker seems to oust the bi-marker. In the rare instances that bi occurs with the gi-prefix (cf. Boretzky 1988: 62; Wellens 2003: 112), it is attached to this prefix, otherwise it is attached to the stem itself. This form also occurs in other Arabic varieties in the region, with some variation in its meaning (Versteegh 1993: 73).

These two prefixes may also occur with modal verbs. For instance, a combination of kan, the anterior marker, and bi renders a counterfactual meaning (cf. Musa-Wellens 1994: 48ff.), e.g. in:

3) kan uwo bi-ashrubu, ‘he would have drunk’.

The prefixes bi and gi are sensitive to vowel harmony. The prefix vowel alternates between i and u, depending on the back/front feature of the first vowel of the stem, e.g. gi-tunda, ‘sell’, versus gu-wonus, ‘talk’.

4.5.1.5 Person, gender and number
There are no PGN affixes, for either the subject, or the object. In some western Sudanic Arabic varieties as well, the singular perfect conjugation have no PGN suffixes (Owens 1985: 232). Instead of affixes, Nubi uses pronouns to express PGN features. For instance, Sudanic Arabic katab-t-u ‘wrote-1SG-3SG.MASC’ in Nubi is: ana katabu de, ‘I wrote this’.

4.5.1.6 Stem classes
Unlike most other Arabic varieties, Nubi has no verb classes. 45% of the Nubi verbs end on a -u. This does not, however, trigger alternations elsewhere in the verb. This -u may be derived from the Arabic plural marker -u, and its wide occurrence may result from the preference of Nubi for open syllable structures (cf. Owens 1985: 254ff., and the discussion in Wellens 2003: 241ff.). According to Versteegh (1984: 124) and Wellens (2003: 100ff.), however, -u is derived from the 3SG.MASC suffix and functions as a transitive marker in Nubi.
In rarer instances other morphological categories also occur in frozen form in Nubi verbs, e.g. Nubi *nongusu*, ‘reduce’, from Sudanic Arabic *n-angus-u*, ‘we reduce’. These are, however, part of the undeclinable stem in Nubi.

4.5.2 Analysis
To account for the Nubi data the Economy and Transparency Principle play a role.

4.5.2.1 Economy
The Arabic derivational augmentation system has disappeared. Several functions of the augmentations are taken over by analytic means; for instance, the causative is expressed with auxiliary verbs. However, new derivational means have also emerged: a suffix *isha*, borrowed from Swahili is used for causativisation (cf. Musa-Wellens 1994: 112).

Most categories disappeared from Nubi, except voice and aspect. The division of the aspectual space in Nubi is different from other Arabic varieties, and more similar to other creole languages. The expression of aspect is also different: a prefix is used, instead of a stem modification with concomitant affix allomorphy. Voice is also expressed in a different way. Nubi uses the aspectual markers in combinations with auxiliaries to express tense, but there is no distinct morphological category of tense in Nubi.

In conclusion, Economy ranks much higher than in other Arabic varieties.

4.5.2.2 Transparency
Owing to the radical loss of morphology in Nubi, fusion, homonymy and fission are no longer relevant and allomorphy only plays a minor role. There are no verb classes that trigger allomorphy, and there are very few affixes that display allomorphic tendencies. There is some small variation in the tense and aspect prefixes. This falls partly under allophony, since the variation is predictable on the basis of phonological rules, and no extra allomorphs need to be postulated (cf. Booij 1998). On the other hand, as far as *bi-* and *gi-* have a similar meaning and function, and belong to the same Arabic variety, these prefixes are also allomorphs.

Transparency is much more important in Nubi than in other Arabic varieties. This is partly due to the importance of the Economy Principle. However, the categories that are still expressed display less violations of the Transparency Principle than in other Arabic varieties. In contrast with morphology, in syntax the relation between auxiliary combinations and their semantics is not transparent (Wellens, pers.comm.).

4.5.2.3 Isomorphy
The ideal order of affixes is as given in 1., cf. section 2.1.3.2. The order of affixes in Classical Arabic is as given in 2., and the order of Nubi in 3. The brackets indicate that the affix is not obligatory in every context. P, G, N stand for person, gender, and number respectively. SUB means subject, and OBJ object.

2. (P.sub G.sub N.sub) - [Verb + Aspect + Voice] - G.sub N.sub - Mood - (P.obj G.obj N.obj).
3. (Tense/Mood) - (Aspect) - [Verb + (Voice)].

The structure and order of affixes in Nubi is rather different from Classical Arabic, and these are not straightforwardly comparable. However, it could be argued that Classical
Arabic displays one more violation of the ideal order than Nubi: Mood appears farther away from the verb stem than the PGN affixes. In Nubi there are no violations with respect to the relative distance of affixes to each other and the stem.

4.5.2.4 Other Principles

Morphological templates do not exist in Nubi. Phonological rules that play a role in other Arabic varieties are absent in Nubi. There is a tendency to avoid closed syllables. This tendency, however, does not seriously affect the transparent structure of Nubi verbs.

4.6 Linguistic and social changes in Arabic

There were several differences amongst Old Arabic dialects (cf. Versteegh 1997: 41ff.). However, these were more insignificant than the differences between for example, Najdi Arabic, and Moroccan Arabic. In Table 4.25 I depict the most important differences between the Arabic varieties under discussion.

Table 4.25 Inflectional changes in Arabic

A ‘-’ means the feature did not change at all, +/- means that in some dialects or in some instances the feature may be changing, x means that the feature has changed in many contexts, and X means that the change is complete.

<table>
<thead>
<tr>
<th>Feature</th>
<th>Classical Arabic</th>
<th>Najdi Arabic</th>
<th>Moroccan Arabic</th>
<th>Nubi</th>
</tr>
</thead>
<tbody>
<tr>
<td>loss of dual and mood</td>
<td>+/-</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>phonological changes</td>
<td>-</td>
<td>x</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>loss of internal passive</td>
<td>-</td>
<td>+/-</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>decrease in stem classes</td>
<td>-</td>
<td>x</td>
<td>x</td>
<td>X</td>
</tr>
<tr>
<td>decrease in allomorphy in weak verbs</td>
<td>-</td>
<td>+/-</td>
<td>x</td>
<td>X</td>
</tr>
<tr>
<td>loss of gender</td>
<td>-</td>
<td>-</td>
<td>x</td>
<td>X</td>
</tr>
<tr>
<td>new prefixes</td>
<td>-</td>
<td>-</td>
<td>x</td>
<td>X</td>
</tr>
<tr>
<td>decrease of augmentations</td>
<td>-</td>
<td>-</td>
<td>x</td>
<td>X</td>
</tr>
<tr>
<td>tendency towards a uniform stem</td>
<td>-</td>
<td>-</td>
<td>x</td>
<td>X</td>
</tr>
</tbody>
</table>

In this section I will discuss the factors that may explain this diversity, and will then examine the reasons for these variations.

Substrate influence and dispersion

The various languages with which Arabic came into contact when it spread to North Africa and the Middle East is an important factor. These languages included several Berber languages in the Maghreb, like Tamazight and Tarifit, Coptic in Egypt, and
languages like Aramaic, Syriac, Greek, and Persian in the Middle East. Later the new Arabic varieties also came into close contact with French, English, Spanish and Italian. This diversity in substrates and adstrates is reflected in differences in the borrowed items in the lexicon, and in some phonological and grammatical differences. For instance, when comparing Nubi and Moroccan Arabic, the phonemic use of stress may be a result of Niger-Congo interference in Nubi, while the retention of pharyngeals in Moroccan Arabic can be seen as strengthened by Berber influence. A problem for substrate theories is however, that many of the alleged substrates are barely known, which makes some of the explanations vacuous (cf. Versteegh 1997: 107).

In addition to the kind of substrate or adstrate influence, the extent of such influence caused diversity among modern Arabic varieties. Nubi had many more second language learners than Moroccan Arabic, while the latter language in its turn had many more second language learners than Najdi. The number of learners roughly corresponds to the number of changes these varieties underwent. Below I will discuss to what extent second language learning led to similar changes between the modern varieties.

Another factor concerns the differences between the old Arabic and new Arabic societies. The old Arabic speech community consisted predominantly of nomads, and only a few cities. The number of speakers in the Old Arabic region was limited and contacts between the various parts of the region were frequent. The region where modern Arabic dialects developed, that is, the Arab world, from Morocco to Oman, is much larger. The number of speakers of modern Arabic has grown to more than 200,000,000 (Grimes 2002). Moreover, in this new Arab world many local centres of prestige arose, with strong local norms. This transition from a relatively small nomadic speech community to a very large sedentary community resulted in more variation. This development can be compared to the situation in South America where Quechua was spoken among a small population that later spread over a larger area. This resulted in them having less contact with each other than before. Although there is nothing in language per se which is a factor for such language change, random variation and the existence of local centres of prestige usually results in more variation (cf. Nettle 1999: 48ff.).

Dispersion and different language contact situations have resulted in diversity among modern Arabic varieties. This is hardly surprising when we compare the spread of Arabic to the dispersion of other language families and sub-families like Germanic, Romance, or Tibeto-Burman. What is more surprising is the many similarities between the modern Arabic varieties. For explanation of the similarities, three theories have been proposed. Some authors (Diem 1978; Ferguson 1959) stress the homogeneity, or the tendencies in the original language which resulted in uniformity over a longer period. Later concurrent changes could be a result of universal laws of change applying to an identical source language. Secondly Cohen (1970) and Diem (1978) stress the importance of the mutual influences and contacts which levelled out differences between the Arabic varieties. A third group of factors are the influence of similar social circumstances in the Arabic speech communities after the spread of the Islam. Versteegh (1984) stresses that in the varieties that are structurally close to each other, similar social conditions of language acquisition held. I will now discuss these three explanations.
Common origin

Ferguson (1959) tried to explain the features which distinguish the modern Arabic varieties from Classical Arabic, by proposing a common source, different from the Classical language, from which all modern varieties would have been derived. This common language would have been a military koiné, that is, a dialect of Arabic that emerged in the military camps in northern Arabia at the beginning of the Islamic expansion. This koiné would have been a result of dialect levelling between the various Arabic dialects. To support this hypothesis Ferguson must show that the similarities between the Arabic varieties are not due to features already present in Classical Arabic, or to normal paths of change resulting from the circumstances in which the speech communities found themselves, or, indeed, to later dialect contact and lexical diffusion. Furthermore, these features must be shared only by varieties of Arabic that result from the Islamic spread, that is, not by Bedouin varieties. Ferguson presents fourteen features that fit the bill. This proposal evoked much discussion among Arabists (cf. Cohen 1970; Kaye 1976; Versteegh 1997). Today most scholars reject Ferguson’s hypothesis in its strongest form, which is that there would have been a koiné, locatable in time and space, with specific features. On the other hand, the widespread occurrence of several peculiar changes in Arabic has led most scholars to accept that at least some changes must have taken place in Old Arabic before the Islamic spread.

Among the changes mentioned by Ferguson is the loss of the dual. Dual number marking on verbs has also been lost in Bedouin dialects like Najdi Arabic, and it is even uncertain whether this feature was lost before or after the spread of Islam. Moreover, loss of the dual is common to many languages.

From the perspective of language as a phenomenon in the individual, each change in language must be explained as a modification between input and internal representation, or between representation and output. Furthermore, this modification must be triggered somehow by changes in the context of language use. However, certain changes are common to all languages, but are hard to explain with reference to individual transmission. I call these changes that seem to be intrinsic to language, ‘autonomous developments’. Of course, this is only a metaphor, and it is only a way of saying that we do not know why the change takes place, though on the other hand it is no more circular than explaining such changes by a putative external factor.

Another feature from Ferguson (1959) relevant here is, is the merger of several verb classes with a weak final consonant, which led to less allomorphy in all Arabic varieties. This merger is a development, which also took place in other Semitic languages. Cohen (1970: 111) says: “All these phenomena [i.e. Ferguson’s features] can in reality be considered as a common line of evolution, a tendency of the language, which is realised, as one would expect, in a more rapid rhythm in the sedentary dialects than among the nomads.” This tendency is not common to all languages, and I will not call it an ‘autonomous development’. However, it is a tendency peculiar to most Arabic and perhaps even Semitic languages. Somehow we would prefer to say that the tendency to

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84 This military koiné is not the same as the earlier poetic koiné, as proposed by Zwettler (1978), cf. 4.1.2.
85 "Tous ces phénomènes laissent en réalité apercevoir une ligne d’évolution commune, une tendance de la langue, se réalisant, comme on peut s’y attendre, à un rythme plus rapide chez les sédentaires que chez les nomades."
develop in a certain direction was the prerogative of Classical Arabic. Inspired by Sapir (1921), I will call such Arabic-specific tendencies for which there are no other explanations, ‘Arabic drifts’. The same caveats with respect to the explanatory capacity of this term apply as above for the term ‘autonomous development’.

Diem (1978: 131ff.) stresses the homogeneity among the Old Arabic dialects of the nomads to explain the uniformity of contemporary Arabic. Comparable cases with a similar history and with more modern diversity would have already had more internal variation in the original situation. As an example Diem discusses Aramaic whose time depth and history are similar to that found in Arabic, although it is much more diverse at present. According to Diem this can be explained by the higher internal variation already present in Old Aramaic. Though the stress on the original homogeneity can explain similarities between all modern Arabic and Old Arabic, it cannot explain the concurrent changes of many Arabic varieties.

To explain this it is suggested that the Arabic varieties were all subject to the same phonetic laws, which, applying to the same original structure, unsurprisingly yielded a rather similar result. According to this view the loss and merger of several inflectional categories would be preceded by phonetic changes resulting in the loss of vocalic contrasts word-finally, as is also argued for Scandinavian, cf. 5.6. For the loss of the dual, this argument fails, since the dual category is not more susceptible to phonetic erosion than other categories. Moreover, even for the case where phonetic erosion seems most plausible, that is, the loss of the word-final case suffixes -a, -i, and -u, it is argued by Diem (1991), that these categories were lost before phonetic erosion could affect their expression.86 Besides, plural case suffixes do not have short vowel endings but were, nevertheless, lost.

Another argument to explain modern uniformity in terms of the original language structure is that the consonantal roots of Arabic would have prevented restructuring, and would have led the evolution of Arabic in a certain direction. However, Diem (1978: 146ff.) maintains that this same argument should apply to comparable languages like Ethiopian, where thorough changes in the root structure have, nevertheless, taken place.

Dialect contact

In addition to looking for similarities already present in the original language structure and its hidden drifts, Diem (1978) discusses mutual influences between later Arabic varieties as a cause of modern uniformity. Later convergence in Arabic was facilitated by geography: Arabic is spoken in a largely uninterrupted area.87 During the Islamic expansion levelling through dialect contact had already taken place, and in the next centuries contact between speakers from different regions also levelled out many differences. Levelling took place especially during and after large-scale migrations, like the migration of the Banu Hilal to the Maghreb. In addition to these influences through the actual movements of people, there was also a diffusion of varieties which had high

86 Diem (1991) shows this with examples in which the case suffixes were already unsystematically attached, and in which this cannot be due to phonetic erosion, since in these cases final consonantal suffixes follow.

87 The forms of Arabic spoken in regions that are not continuous with the Arab heartland, are indeed strikingly different, cf. the Arabic varieties spoken in Malta and Uzbekistan (cf. Versteegh 1997).
prestige, spreading from cities like Baghdad and Cairo (cf. Diem 1978: 140ff.). In modern times of mass media this latter form of convergence towards large regional koine’s is leading to a small number of nation-based Arabic varieties, and to the disappearance of many smaller conservative dialects (cf. the emergence of the Riyaadh dialect and the disappearance of Shammar Arabic in 4.1.3.2).

Influence from a pan-Arabic standard is also argued to have led the varieties in a common direction. Versteegh (1984: 30) suggests that the Classical language caused the Arabic varieties to revert from a more analytic stage to a more synthetic stage. If such an influence existed, then the effects would have been more apparent in the cities and in the non-Jewish varieties, where one might expect a higher conformity to the norms of the Classical language. This is not the case, however, and we must concur with Diem (1978) that the influence of the Classical norm has been minimal. However, the feeling of belonging to one large speech community with shared language, religious and cultural values, may have played a role, albeit indirectly. Cohen (1970: 124) says:

“But in addition to centrifugal factors, other unifying and very strong factors have been exercised: namely those which are associated with a common religion, with the influence of the sacred text, with sentiments of belonging to a cultural community, that were stronger or less strong during the ages, but which was never fully absent.”

Similar social conditions

Long-lasting processes of mutual influence and levelling can explain the spread of several features, the absence of clear isoglosses, and the difficulties in relating modern Arabic varieties to dialects of Old Arabic. It cannot explain, however, why there are structural similarities between Arabic varieties, which cannot be due to plain borrowing and levelling between lexical items. An example is the replacement of a synthetic genitive construction by an analytical possessive construction, where the new possessive marker has different forms in different varieties (cf. Versteegh 1997: 107). Another example is the loss of the word-final modal markers and the emergence of grammaticalised prefixes, whose actual form is different between different Arabic varieties. Similar processes without the same lexical substance are difficult to explain by contact, since one would then expect specific words, phrases and affixes to be shared. Two kinds of explanation have been given, both focussing on the differences between the earlier nomadic society in which Arabic was spoken, and the later sedentary situation in which Arabic flourished after the Islamic expansion.

The first explanation is that in sedentary communities a different use is made of language. Taine-Cheikh (2000) suggests that the conditions of language use are so different in nomadic societies that this affects the structural level:

“The nomads, where the variety of experiences and the cultural heterogeneity are, without doubt, smaller, seem to be able to be permanently satisfied with implicitness...On the
other hand, the innovations observed among the sedentary speeches often reflect a need for explication of the content of syntactic relations, like referential or modal notions.\(^9\)

In this view the emergence of grammaticalised modal markers would be due to urban life and needs no further explanation from a common source, or from dialect contact. Perkins (1992) argues that in small societies with few institutions and little contact above the extended family level or clan level - which Perkins calls ‘non-complex cultures’, cf. section 2.3 - language is based on different kinds of discourse to those found in urban speech. This would have repercussions for the architecture of the grammatical and morphological system. Perkins shows that the more complex a society is, the fewer deictic categories it has. For instance, the dual is a category especially found in small societies. Perkins (1992) makes this claim on the basis of correlations between cultural factors and grammatical factors. However, such a general claim needs more substantiation in the Arabic case. First of all, it does not explain the decrease of allomorphy caused by weak verbs, which took place throughout the Arab world and not only in urban environments. Moreover, Taine-Cheikh’s argument that nomadic discourse is more implicit may well concur with the smaller amount of modal distinctions in Bedouin Arabic varieties, but the relation between this implicitness and the higher amount of deictic expressions as observed by Perkins remains unclear.

Versteegh (1984) gives a more elaborate explanation for the differences between urban and nomadic speech. He focuses on the specific social circumstances in the cities where after the Islamic expansion Arabic became the lingua franca. Arabic was learned by the native population in an untutored acquisition process. Since the number of native speakers was far less than the number of learners, the acquisition process was imperfect. Versteegh named this process ‘pidginisation’, which was perhaps a little inapt, since no indications have been found that there ever really was a pidgin. However, when we take ‘pidginisation’ to refer to a process of massive untutored imperfect second language acquisition, as Versteegh indeed intended, and not to a specific result, then Versteegh’s hypothesis becomes quite attractive. The structurally similar changes given above can be explained by such an hypothesis; second language learners prefer analytic structures, which concurs with the increase in analyticity in the sedentary varieties. The variation in the lexical form of these analytic structures is due to the substrate languages, and to accidental choices of the learners. Three related questions remain, however. To what extent did this process of second language learning influence the direction of change? Second, why would Arabic later have changed its direction of development towards a less pidginised state? And third, what features of Arabic morphology can be accounted for in this scenario?

According to Versteegh (1984) considerable changes took place in Arabic. When comparing the modern state of syntheticity in Arabic varieties with Classical Arabic, Versteegh (1984) in fact proposes that between these two relatively high levels of syntheticity a much lower level must have existed, of a kind of pidgin Arabic. I call this the Curve scenario, since it proposes that the syntheticity level lowered and rose again. In

\(^{9}\) “Chez les nomades, où la variété des expériences et l’hétérogénéité culturelle sont sans doute moindres, on semble pouvoir s’accommoder d’une permanence plus grande de l’implicité….A l’inverse, les innovations observées dans les parlers de sédentaires répondent souvent à un besoin d’explication du contenu des rapports syntaxiques, qu’il s’agisse de notions référentielles ou modales…”
Arabic

contrast, in what I call the Linear scenario, no such intermediate lower stage is proposed. In this scenario, modern Arabic varieties are drifting further away from the Classical norm, either because this norm was and is not considered to apply to everyday speech, or because the norm was and is inaccessible for ordinary speakers.

The Curve scenario in its strongest form is hard to prove. First of all, there are no sources that make mention of an Arabic pidgin after the spread of Islam. Second, indirect evidence for such a pidgin can also be explained otherwise. For example, the parallel emergence of analytical genitive constructions do not presuppose a previous pidgin stage. It implies at most parallel processes of imperfect second language acquisition. Third, when the modern Arabic varieties could be a result of decréolisation caused by the influence of Classical Arabic, it is supposed that the Classical language had considerable influence in all regions of the Arab world. How much access there was to the Classical language remains a disputed question, however, because of a lack of data. Furthermore there is no correlation between religious identity and deviation from Classical Arabic. That is, Judaic Arabic varieties are no closer to a supposed pidgin stage than other related varieties.90 This would, however, be expected if the Curve scenario in its strongest form was true (cf. Diem 1978), since Judaic speech, lacking Islamic norms and values, would diverge more rapidly from the Classical norm.

On the other hand, less radical versions of the Curve scenario are in fact quite plausible. There are several indications that the development from Classical Arabic to modern Arabic varieties was not a linear development, but that there had been stages where Arabic varieties were more ‘pidginised’, in the sense of ‘influenced by second language acquisition’. In Morocco the city dialects which emerged after the first wave of Arab immigrants are more distant from Classical Arabic structure, in having no distinction between imperfect and perfect strong verb stems. That is, in these varieties the vocalism of the stem that expressed aspect and voice in Classical Arabic completely reduced to schwa. In more modern Moroccan Arabic varieties, that emerged after contact with new immigrants, such distinctions have been re-introduced (cf. Versteegh 1997: 112). A second example of a change towards, instead of away from the Classical language is discussed by Versteegh (1993). Nubi Arabic has a closely related variety in Sudan, Juba Arabic. In this Sudanese variety decréolisation processes take place in which personal prefixes are introduced again (Versteegh 1993: 74). A potential argument against the Curve scenario, that says that the inflectional structure of Arabic is too complex to be reintroduced in a decréolisation process, is at least falsified by the example from Juba Arabic (cf. also Versteegh 2001: 487ff., for suggestions that an Arabic pidgin left traces in Swahili as well). Third, nowadays Standard and Classical Arabic have profound influence on the colloquial varieties. Although today there is more communication and more access to the standard, in earlier days there was probably at least some influence from the Classical prestige language. These three examples suggest that a bend in the curve is possible. How much curve there was exactly is unknown, because of a lack of data. Now I will turn to specific features of Arabic morphology.

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90 That is, they do not deviate more than other urban pre-Hilal dialects in Northern Morocco. As a group these dialects differ more from Classical Arabic than the modern Moroccan Koiné.
Loss of dual and mood suffixes

Loss of dual number and mood suffixes occurred in all Arabic varieties, including isolated varieties like Najdi Arabic. In the dialect from which all modern Arabic varieties descended erosion must have already set in (cf. 4.1.2). Otherwise these losses must be due to Arabic drift (see above). This is possible assuming a general tendency towards avoidance of too much complexity. Perhaps by some idiosyncratic language development Arabic had reached such a level of inflectional complexity, that only a little time and some random variation was needed before some simplification would start. This scenario is comparable to the scenario sketched above for Scandinavian (cf. also Werner 1984). In Old Norse, because of some earlier assimilation and conflation processes, the earlier agglutinative structure of Germanic had evolved into a fairly opaque system. Only very small disturbances in language transmission were needed to filter out the most extreme complexities, even in the most isolated Scandinavian language, Icelandic. Applying this scenario to Arabic implies that Old Arabic was an unstable language which could change at any moment. As in Scandinavian this process was more than a purely phonetically driven one; early loss of mood suffixes occurred in forms where erosion could not take place (cf. Diem 1991 and note 86). The prominence of loss of dual and mood in many Arabic varieties corresponds with data from Mansouri (2000: 177ff.), who found that the dual and mood are among the most difficult morphological devices for L2 learners of Standard Arabic.

Loss of the internal passive

A similar argument applies to the loss of the internal passive. The internal passive has been lost in most varieties, including several of the Bedouin varieties. In Mesopotamia and Saudi Arabia the loss of the internal passive is accompanied by phonological rules that affect vowel quality dependent on syllable structure (cf. Ingham 1982: 45ff.). The loss of the passive is, however, not a mechanical result of these phonological rules, since these are initially sensitive to particular morphological environments. Therefore on the one hand, the loss of the passive is a result of the phonological make-up of Arabic structure, but, on the other hand, morphological considerations of a universal nature have guided the manner in which the passive was lost (cf.4.3.2.2). Moreover, since the internal passive is retained in the more isolated Bedouin dialects, convergence and contact with other Arabic varieties may have been involved.

Berman (1985: 323ff.) found that the internal passive in related modern Hebrew is acquired only after the age of 8 or 10 by L1 learners, and explains this by their low frequency, the existence of periphrastic alternatives and their morphological markedness. These three factors may account also for the loss of the internal passive in most Arabic varieties, and may explain why this loss is largely driven by language-internal factors, independent from language contact.

Decrease in stem classes

In all Arabic varieties the number of ways of stem vowel alternation between perfect and imperfect stems decreased. In Najdi Arabic this resulted in two classes, while in the post-Hilal varieties of Morocco there is only one stem class, with some exceptions. Strong verbs in the pre-Hilal varieties of Morocco and all verbs in Nubi appear in only one stem class. Like the loss of the internal passive, this seems to be an autonomous development in the sense that the development is not restricted to varieties with a specific substrate, or...
with specific social circumstances. The increasing tendency towards the abolition of stem classes in varieties which underwent more language contact implies that the speed of disappearance is associated with social factors.

**Loss of gender**

In the 2\textsuperscript{nd} and 3\textsuperscript{rd} plural and in the 2\textsuperscript{nd} singular perfect gender distinctions were lost in sedentary varieties, but not in Bedouin varieties. Because of the sharp split between Bedouin and sedentary varieties with respect to these features, this does not seem to be an autonomous development. Perhaps there was a dominant dialect in the first Arab spread during which most sedentary varieties developed, and perhaps in this variety gender had already been lost. Otherwise the explanation for this development must lie in identical circumstances in the cities: second language acquisition processes (cf. Versteegh 1984), or discourse conditions in urban contexts (cf. Taine-Cheikh 2001). Processes of convergence can also have played a role.

**New mood prefixes**

In the sedentary varieties former aspectual and modal distinctions were replaced by preverbs which grammaticalised into prefixes. Like the loss of gender this cannot be due to substrate influence since it took place in all sedentary varieties in the Arab world. It cannot be due to an original structure of an early Arabic dialect either, or to convergence, because the replacement by prefixes proceeded in a structurally similar fashion in Arabic varieties, but its lexical expression is different. This development is the most probable candidate for causation by parallel social conditions in the cities.

**Decrease in allomorphy**

In Classical Arabic there was much allomorphy induced by two weak consonants that could appear in three places in the root, and that triggered different effects depending on the surrounding vowels, and on morphological properties of the word in question. This allomorphy was reduced significantly in the varieties that experienced most language contact. Its disappearance seems to be an independent autonomous development, specific to Arabic, and tending towards more transparency. Its different rates of change were at least partly dependent on the social history of the variety in question.

The partial independence of weak verb allomorphy decrease from external factors is in line with data from Hebrew acquisition. Berman (1985: 282, 285) found that L1 learners of modern Hebrew have also severe difficulties in acquiring the morphologically conditioned rules of weak verb allomorphy. When both L1 and L2 learners have such difficulties, it suggests that there is a pressure to change in both contact and non-contact Arabic varieties.

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91 This development can be considered as a universal ‘natural development’, when it is taken as an implementation of a universal tendency towards less allomorphy. It may, however, be a part of Arabic or Semitic drift, since these specific changes only occur in Arabic, or Semitic.

92 There is a tendency in acquisition to omit person, gender and number agreement in verb-initial sentences (cf. Berman 1985: 301 for Hebrew; Mansouri 2000: 168ff. for L2 acquisition of Standard Arabic). However, this pattern of loss does not correlate with the more specific gender loss discussed here.
Loss of augmentations

The loss of specific patterns in the lexicon stems partly from the already infrequent use of some of these in Old Arabic. The process of loss affects all varieties, and can be considered as an instance of ‘Arabic drift’. However, the augmentation system decreases more in the regions that lie further away from the Arab heartland, and that saw most contact. For instance, in Morocco only pattern 5 is used for the passive. In Egypt pattern 8 is also used, and on the Arabian Peninsula pattern 7 is used in addition to the others.

Uniform expression of the stem

When summarising all developments in Arabic we find a tendency towards a uniform expression of the stem. In Classical Arabic infixation of vowels and consonants is a common process. In modern Arabic varieties the functional load of processes internal to the stem has diminished. In the Mesopotamian dialects the stem vowels are defined more by phonological considerations than in Old Arabic. In Moroccan Arabic less phonological variation is possible inside the verbal stem and passive voice and aspect are expressed largely outside the stem. In Nubi the stem is invariant. Since this tendency seems to hold in all Arabic varieties, it may be part of Arabic drift. In addition, it is also an instance of the universal tendency towards more transparency. The speed of this change is influenced by the social processes in the cities, the structure of the substrate languages, and convergence towards other varieties.

Phonological changes

A final change in modern Arabic concerns phonology. Although phonology itself is not the subject here, some of the phonological changes also affected the verbal inflection.

The phonology of the modern Arabic varieties differ and this is partly due to substrate influences. For instance, the phonemic \( ny \), \([n]\) in IPA, in Nubi is probably caused by an identical phoneme in a Niger-Congo language. Other phenomena, like the spread of vowel harmony across both Najdi Arabic, Sudanic Arabic, and Nubi, may be due to substrate influence, but perhaps also to convergence. Perhaps it is a development specific to Arabic. Other phonological developments like the loss of the marked interdentals in sedentary varieties may be due to the early ‘pidginisation’ processes in the cities. One striking feature of modern Arabic, especially of North Africa, is the shift towards a system of strong stress. For example, stress in Moroccan Arabic is always on a heavy syllable, containing at least a long vowel or a final consonant, while unstressed syllables are reduced with respect to vocalic contrasts and length. This is reminiscent of the stress shift in Germanic that also concurred with social processes on the one hand, and erosion of vowel quantity and quality on the other hand.

In Table 4.26 the factors in the columns are related to the kinds of changes in the rows. X means that the factors are closely related, and x that there is a weak relation. With ‘Arabic development’ as a factor of change, I refer to the specific structure of Arabic, or of a supposed Arabic variety. With ‘social process’ I refer both to the influence of city life in general, as well as to the processes of second language acquisition.
Table 4.26 Inflectional changes and sociolinguistic processes in Arabic

<table>
<thead>
<tr>
<th></th>
<th>autonomous development</th>
<th>Arabic development</th>
<th>substrate influence</th>
<th>convergence</th>
<th>social process</th>
</tr>
</thead>
<tbody>
<tr>
<td>loss of dual and mood</td>
<td>X</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>loss of internal passive</td>
<td>X</td>
<td>X</td>
<td>x</td>
<td></td>
<td></td>
</tr>
<tr>
<td>decrease in stem classes</td>
<td>X</td>
<td>X</td>
<td></td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>loss of gender</td>
<td>x</td>
<td>x</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>new prefixes</td>
<td></td>
<td></td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>decrease in allomorphy in weak verbs</td>
<td>X</td>
<td>X</td>
<td>x</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>decrease of augmentations</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>tendency towards a uniform stem</td>
<td>X</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>X</td>
</tr>
<tr>
<td>phonological changes</td>
<td>x</td>
<td>x</td>
<td>X</td>
<td>x</td>
<td>X</td>
</tr>
</tbody>
</table>

Of course Table 4.26 gives only a rough and fairly abstract indication of the changes in all the Arabic varieties in a period of more than a millennium. When considering actual changes in particular varieties, it appears to be more difficult to classify phenomena with respect to their distance to Classical Arabic (cf. Taine-Cheikh 1983: 95), and to relate the changes to various factors. However, the bird’s eye perspective may spot broad tendencies which are not visible from within a more detailed perspective.

Thus when we combine Table 4.25 and Table 4.26, we can tentatively compose a table which displays the factors that influenced each variety.

Table 4.27 Sociolinguistic factors in Arabic

In each block of this table I weighed +/- as 1, x as 2, and X as 3 for Table 4.25, and I multiplied these with x=2, and X=3 of Table 4.26.

<table>
<thead>
<tr>
<th></th>
<th>autonomous development</th>
<th>Arabic development</th>
<th>substrate influence</th>
<th>convergence</th>
<th>social process</th>
</tr>
</thead>
<tbody>
<tr>
<td>Classical Arabic</td>
<td>3</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Najdi Arabic</td>
<td>25</td>
<td>22</td>
<td>6</td>
<td>8</td>
<td>13</td>
</tr>
<tr>
<td>Moroccan Arabic</td>
<td>42</td>
<td>45</td>
<td>13</td>
<td>28</td>
<td>41</td>
</tr>
<tr>
<td>Nubi</td>
<td>51</td>
<td>57</td>
<td>15</td>
<td>36</td>
<td>57</td>
</tr>
</tbody>
</table>

This quantification is obviously a rather haphazard way of displaying the data. Nevertheless, some trends are apparent.
In Classical Arabic there are, by definition, only tendencies to change through autonomous development and through developments intrinsic to Arabic. Furthermore, autonomous and intrinsically Arabic developments are also important in the three other varieties, while the influence of substrate languages is less important in Arabic inflectional change. In addition, in two respects the three other varieties differ.

First of all, convergence as a factor in inflectional change is unimportant in Najdi, while it is much more so in Moroccan and Nubi. This corresponds to the observation that the Najdi language and society were largely unaffected by other Arab societies and varieties, while Moroccan Arabic was in constant contact with other forms of the language. Although Nubi was isolated for a while as well, before its formative period, when it still consisted of Egyptian and Sudanese Colloquial Arabic, it also came into contact with other Arabic varieties.

Secondly, the factor “social process”, which stands for the influence of city life and 2nd language acquisition, is minimally important in Najdi, but rises to the highest place in Nubi. This is unsurprising, considering that Nubi was created by second language learners while in Najdi there were no non-native speakers, and there was hardly any urbanisation. To a lesser extent than in Nubi though, 2nd language acquisition and urbanisation played a role in Morocco as well.

Thus, from Table 4.27 we may conclude that Classical Arabic and Najdi Arabic inflectional change is mainly autonomous and typically Arabic, while for Moroccan and Nubi Arabic external factors are needed to explain inflectional change.

4.7 Arabic changes from the perspective of Optimality Theory

4.7.1 Introduction

Some aspects of variation in Arabic inflection can be profitably analysed in the framework of Optimality Theory. There is variation in infixal expression of aspect and voice, especially in Najdi Arabic. Furthermore, affixal possibilities vary, and the loss of fusion has had profound effects in Moroccan and North African Arabic. Two main themes that recur are the interaction between reranking of phonological and morphological constraints, and the relation between constraint reranking and the lexicon. However, first several constraints that play a role in Classical and modern Arabic varieties need further introduction.

Apart from constraints that account for the correct augmentational structure, the make-up of the core of the verb in Classical Arabic is determined by high-ranking Faith(Voice) and Faith(Aspect) constraints.93 The categories of voice and aspect are both expressed by vowels inserted into the CV-structure as demanded by the verb and its augmentation.

**Faith(Voice)** demands that voice is expressed in the Output, and LEX demands that this takes place with help of a lexical item from the lexicon (cf. section 3.3.1). In the lexicon active voice is expressed as: [ACTIVE; aV], in which V is a variable whose value depends on aspect. Passive voice is expressed as [PASSIVE; uV].

**Faith(Aspect)** demands that aspect is expressed in the Output. The lexical items that express aspect are fairly complex, namely, informally stated: [PERFECTIVE; Va/i & AUG],

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93 The seemingly accidental constraints on basic verb patterns in Arabic is dealt with in McCarthy (2001).
or [IMPERFECTIVE: Va/i & v-AUG]. High ranking of Faith(Aspect) leads, in combination with LEX, to rather opaque expressions. Imperfective aspect demands an a, or i as second vowel, and an extension of the augmented pattern with a prefixed vowel. The choice between a and i is conditioned by the transitivity class of the verb, voice and on the kind of augmentation of the verb in question (cf. section 4.2.1.1). How the skeleton is precisely filled is another matter. I assume some version of prosodic morphology as discussed in McCarthy (1982) to be compatible with my approach.

The correspondence constraints Faith(Voice) and Faith(Aspect) each consist of two constraints, Max(X), and Dep(X), depending in what direction the correspondence is evaluated (cf. section 3.3.3). Other constraints that deal with semantic categories are markedness constraints like *[Dual], and *[Gender, Plur], and contiguity constraints. These latter constraints forbid infixation within a certain domain. ConStem, for example forbids infixation inside the stem, and ConAffix forbids intervention within affixes, and in fact forbids circumfixes. These contiguity constraints belong to the family of faithfulness constraints (cf. Kager 1999: 250).

Furthermore, there are constraints that demand full expression of the categories gender, number, person, mood, MaxGen, MaxPers, MaxNum, and MaxMood, and secondly their counterparts that forbid these categories, the so-called filters. Examples are *[Dual], or *[Gen, Plur]. Finally, there are two other correspondence constraints applying to morphology, which are the OT counterparts of the Elsewhere or Panini Principle, and the so-called Hierarchy Principle:

MaxCat: “A candidate with an affix that has features a and b is preferred above a candidate expressing only b, that is a more specified form is preferred above a less specified form.”

MaxHigh: “A candidate with affixes that have features that are high on the feature hierarchy is preferred above a candidate with lower features.”

In section 4.2.1.3 I showed why these two constraints are needed to avoid underspecifications and other wrong forms in Arabic. These two constraints must be ranked high in Classical Arabic, above the other faithfulness and markedness constraints. In the next section I discuss some further phonological constraints.

4.7.2 The fate of Arabic infixation

Root vocalism has undergone considerable changes in its development from Classical Arabic to Najdi Arabic, Mesopotamian Arabic, Moroccan Arabic, and Nubi Arabic.

4.7.2.1 Classical Arabic

In Classical Arabic, the correspondence constraints, Faith(Voice) and Faith(Aspect), are ranked high. In all verb classes both imperfective and perfective aspect and passive and active voice are expressed distinctively in all combinations. Constraints ranked low in Classical Arabic are morphological markedness constraints like *[Intransitive, Imperfect, Voice], and the contiguity constraint ConStem. These latter constraints have been promoted in modern Arabic varieties. On the basis of Classical Arabic we conceive that
Faith(Asp) and Faith(Voice) are ranked higher than the markedness constraints. We do not know what the internal ranking of constraints within these two groups of constraints is, since they never conflict, cf. Figure 4.3 (For further explanation of this diagram, cf. section 3.2).

\[
\text{Faith(Asp)} \downarrow \text{Faith(Voice)} \downarrow \text{Faith(Trans)}
\]

* [Asp] 
* [Intr, Imp, Voice] 
* [non-3rd, Voice] 
* [Imp, Trans] 

\[
\text{Con(Sem)}
\]

Figure 4.3 Dominance relations of voice and aspect constraints in Classical Arabic

Constraints whose mutual order is questionable are separated in the tableaux with dotted lines. For the sake of comparison with other Arabic varieties I have subsumed several markedness constraints in the next discussion. In Tableau 4.1 the high-ranking faithfulness constraints prevent all kinds of reductions. For reasons of clarity I do not display all constraints; but focus on the fate of the vowels in the stem, which are printed in bold letters. Categories in capitals are unexpressed categories.

Table 4.1 Input: Classical Arabic t-?-sr-?-b-na, ‘drink’ INT.IMP.ACT.2FEM.PL

<table>
<thead>
<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td>tašrabna INT.IMP.ACT</td>
<td></td>
<td></td>
<td>*</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>tušrabna INT.IMP.PASS</td>
<td>*!</td>
<td></td>
<td>*</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>tašrabna INT.(Imp, VOI)</td>
<td>*!</td>
<td></td>
<td>*</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>tašrabna INT.(ASP, VOI)</td>
<td>*!</td>
<td>*</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Tableau 4.1 shows that in Classical Arabic aspect and voice must always be expressed in the stem. It does not, however, show whether phonological deviations from tašrabna, like tišribna, or tašrubna are allowed. To decide between phonological variants we need the following phonological constraints:

**Faith(C)** means that consonants in the Input must correspond to consonants in the Output.

**Faith(V)** means that vowels in the Input must correspond to vowels in the Output.

---

94 The faithfulness constraint that protects the expression of verb class is also ranked high. Its erosion runs parallel with the disappearance of voice and aspect infixes, which I will not discuss further.
In Arabic there is a **vocality hierarchy** \( a > i > u > o \), which also plays a role in weak class verb allomorphy, cf. section 4.2.1.6. This hierarchy plays also a role in Scandinavian (cf. section 5.7.1). It claims that there is a ranking of gradation of vocality from \( a \) to \( i \) to \( u \) to \( o \), and that adjacent vowels on the hierarchy are ‘closer’ to each other than e.g. \( a \) and \( u \).

**Sim(V)** depends on this hierarchy when it demands that vowels in the Output must be **approximately** similar to the vowels of the input. That is, vowels may not deviate more than one ‘step’ on the vocality hierarchy. Therefore, when the hierarchy is \( a > i > u > o \), then **Sim(V)** excludes \( a \)- and \( i \)-deletions. In Najdi Arabic, where the hierarchy consists of \( a > i > o \), the constraint only forbids \( a \)-deletions. **Sim(V)** is a weaker form of **Faith(V)**, since it permits more variation between Input and Output than **Faith(V)**.

***(.CV.C)** forbids non-final open CV-syllables. This constraint may look quite odd, because in most languages CV is the unmarked syllable type, and there are no languages without any open syllable. However, a constraint that forbids CV is necessary in Arabic. For this purpose Broselow (1979) proposes the i-syncope rule, \([-\text{stress}, +i] \rightarrow o / \_CV\) in rule-based grammar. In the OT model Kager (1999: 283) proposes a constraint No \( i \). In a footnote Kager (1999: 283) suggests decomposing No \( i \), and a similar constraint No \( a \), which I would need as well, into a general constraint *\( \sigma_{iv} \), which would forbid monomoraic syllables. This would, however, still be a proposal for a constraint hardly likely to be universal. In my analysis here an open syllable with an \( a \) counts as a double violation, and an open syllable with an \( i \) as a single violation of ***(.CV.C)**. This is related to the vocality hierarchy.

**(.CV.CV.C)** says that a sequence of two open syllables of the form CV is not allowed. This constraint is a more specific variant of ***(.CV.C)**.

**V2 \( \rightarrow \) V1** says that it is more important to preserve faithfulness in the \( v_2 \) of the verb stem than in the \( v_1 \). This may also look like an odd constraint, because it compares two faithfulness relations. In the OT literature, however, analogous constraints have been proposed to account for phenomena that are sensitive to the position in the word. Kager (1999: 408ff.) discusses **positional faithfulness**, which is used to account for differences in restrictions on faithfulness deviations between positions, which is what we are dealing with here as well. Another solution is to decompose \( V_2 \rightarrow V_1 \) into other constraints like ***CCC**, which forbids really heavy consonant clusters, and some form of OO-constraint (cf. section 3.3.3.3) that demands correspondence between \( v_2 \) in the candidate form and \( v_2 \) in paradigmatically related forms where it cannot be deleted (cf. McCarthy 2001).

These constraints together have the same effects as the phonological rules of section 4.3.1.1, i.e. CiC, CaC, and the Short Vowel Raising Rule. The effects of other rules, like the Guttural Rule, will not be discussed and I only focus on the stem vowels, leaving **Faith(C)** out of consideration.

In Classical Arabic **Faith(V)** is, just like several morphological faithfulness constraints, ranked above the markedness constraints, ***(.CV.C)**, and ***(.CV.CV.C)**. The rankings of **V2 \( \rightarrow \) V1** and **Sim(V)** in Classical Arabic cannot be determined because if these constraints are violated **Faith(V)** is fatally violated as well. On the other hand, when they are not violated, it still depends on the violation of **Faith(V)** whether the candidate is selected. These two constraints, which I call floating (cf. section 3.4), can be ordered anywhere in the constraint ranking in Classical Arabic. The positions of ***(.CV.CV.C)** and ***(.CV.C)** are also undetermined with respect to each other, since **Faith(V)** never leaves any choice
between candidates. That is, there are no instances that only differ in violations of *(.CV.CV.C) and *(.CV.C). This results in the following order:

Faith(V) >> *(.CV.CV.C)\(//\)(.CV.C).

Table 4.2 shows the high ranking of Faith(V) and the unspecified position of *(.CV.CV.C) and *(.CV.C).

Tableau 4.2 Input: Classical Arabic k-u-t-i-b-a, ‘read’ TRANS.IMP.PASS.3MASC.SG

<table>
<thead>
<tr>
<th></th>
<th>Faith(V)</th>
<th>V₂→V₁</th>
<th>Sim(V)</th>
<th>*(.CV.CV.C)</th>
<th>*(.CV.C)</th>
</tr>
</thead>
<tbody>
<tr>
<td>kutiba</td>
<td>!</td>
<td>!</td>
<td>*</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>ktiba</td>
<td>!</td>
<td>!</td>
<td>*</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>kutba</td>
<td>*!</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>!</td>
</tr>
</tbody>
</table>

4.7.2.2 Modern Arabic

In modern Arabic, that is, all Arabic varieties derived from Classical Arabic, phonological markedness constraints have been promoted which, in many varieties, lead to a reranking of the morphological constraints as well.

In the variety close to Classical Arabic, the conservative Shammar variety of Najdi Arabic, only the phonological ranking has changed: the markedness constraints *(.CV.CV.C) and *(.CV.C) have risen above Faith(V), and the floating constraints Sim(V) and V₂→V₁ have become important in selecting the optimal candidate. Sim(V) restricts too wide an application of *(.CV.C). The constraint V₂→V₁ is ranked higher than *ComplexOnset (*ComOns), which forbids consonant clusters in the onset, cf. Figure 4.4.

*!( CV.CV.CV.C)  Sim(V)  !!( .CV.CV.CV.C)  Faith(V)  V₂→V₁  *ComOns

Figure 4.4 Phonological dominance relations in Shammar Najdi Arabic

In Tableau 4.3 the optimal candidate sirabti above srabti shows that Sim(V) ranks higher than *(.CV.C), and sirabti instead of sarabti shows that *(.CV.CV.C) is ranked higher than Faith(V).

Tableau 4.3 Input: Shammar Najdi Arabic š-a-r-a-b-ti INTR.IMP.ACT.2FEM.SG

<table>
<thead>
<tr>
<th></th>
<th>*(.CV.CV.CV.C)</th>
<th>Sim(V)</th>
<th>*(.CV.CV.CV.C)</th>
<th>Faith(V)</th>
<th>V₂→V₁</th>
<th>*ComOns</th>
</tr>
</thead>
<tbody>
<tr>
<td>Šarabti</td>
<td>!</td>
<td>!</td>
<td>!</td>
<td>!</td>
<td>!</td>
<td>!</td>
</tr>
<tr>
<td>Širabti</td>
<td>!</td>
<td>!</td>
<td>!</td>
<td>!</td>
<td>!</td>
<td>!</td>
</tr>
<tr>
<td>šrabti</td>
<td>!</td>
<td>!</td>
<td>!</td>
<td>!</td>
<td>!</td>
<td>!</td>
</tr>
</tbody>
</table>

The constraint V₂→V₁ is ranked above *ComOns because skanat is preferred above saknat in Tableau 4.4. The preference of skanat above saknat shows that *(.CV.CV.C) is ranked higher than Sim(V).
The mutual ordering of Faith(V) and V₂ cannot be decided, because there are no instances where Faith(V) is not violated while V₂ → V₁ is violated. Tableau 4.5 shows that *(.CV.CV.C) is ranked higher than V₂ → V₁.

In comparison with Classical Arabic the Shammar variety of Najdi Arabic differs in the promotion of several phonological constraints. In Table 4.28 I show the variation and opaqueness in Shammar Najdi Arabic expressions.

### Table 4.4 Input: Shammar s-a-k-a-n-at, 'dwell' TRANS.IMP.ACT.3FEM.SG

<table>
<thead>
<tr>
<th></th>
<th>*(.CV.CV.C)</th>
<th>Sim(V)</th>
<th>*(.CV.C)</th>
<th>Faith(V) (\downarrow ) V₂ → V₁</th>
<th>*ComOns</th>
</tr>
</thead>
<tbody>
<tr>
<td>skanat</td>
<td>*</td>
<td></td>
<td>*</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>saknat</td>
<td>*</td>
<td></td>
<td>*</td>
<td>*</td>
<td>*!</td>
</tr>
<tr>
<td>sakanat</td>
<td>*!</td>
<td>**</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The mutual ordering of Faith(V) and V₂ → V₁ cannot be decided, because there are no instances where Faith(V) is not violated while V₂ → V₁ is violated. Tableau 4.5 shows that *(.CV.CV.C) is ranked higher than V₂ → V₁.

### Table 4.5 Input: Shammar t-askin-i:n, 'dwell' TRANS.IMP.ACT.2FEM.SG

<table>
<thead>
<tr>
<th></th>
<th>*(.CV.CV.C)</th>
<th>Sim(V)</th>
<th>*(.CV.C)</th>
<th>Faith(V) (\downarrow ) V₂ → V₁</th>
<th>ComplOns</th>
</tr>
</thead>
<tbody>
<tr>
<td>t-askn-i:n</td>
<td>*</td>
<td></td>
<td>*</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>t-askin-i:n</td>
<td>*!</td>
<td>**</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

In Table 4.28 I show the variation and opaqueness in Shammar Najdi Arabic expressions.

### Table 4.28 Shammar Najdi Arabic root vocalism

<table>
<thead>
<tr>
<th></th>
<th>Class. Arabic</th>
<th>Najdi Ar.</th>
<th>Surface vowel forms in Shammar Najdi Arabic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trans. Active</td>
<td>a-a</td>
<td>a-a</td>
<td>(i-a, ô-a)</td>
</tr>
<tr>
<td>Trans. Active</td>
<td>a-i/u</td>
<td>a-i</td>
<td>(a-i, a-ô)</td>
</tr>
<tr>
<td>Trans. Passive</td>
<td>u-i</td>
<td>i-i</td>
<td>(ô-i, i-ô)</td>
</tr>
<tr>
<td>Trans. Passive</td>
<td>u-a</td>
<td>i-a</td>
<td>(a-a, i-a, i-i)</td>
</tr>
<tr>
<td>Intrans. Active</td>
<td>a-i</td>
<td>a-i</td>
<td>(i-i, a-ô)</td>
</tr>
<tr>
<td>Intrans. Passive</td>
<td>a-a</td>
<td>a-a</td>
<td>(a-a, a-i)</td>
</tr>
<tr>
<td>Intrans. Passive</td>
<td>i-i</td>
<td>i-i</td>
<td>(ô-i, i-ô)</td>
</tr>
<tr>
<td>Intrans. Passive</td>
<td>i-a</td>
<td>i-a</td>
<td>(a-a, i-a, i-i)</td>
</tr>
</tbody>
</table>

On the one hand the underlying system in Shammar Najdi Arabic is simpler because u and i have merged and there is less variation. However, because of the higher ranked phonological markedness constraints, the eight semantic possibilities based on the three parameters of transitivity, voice and aspect are no longer expressed transparently. In Najdi Arabic the surface forms differ more from the underlying form than in Classical Arabic.

This opaqueness led to the collapse of the infixal system in those varieties with more characteristics of a Type 2 community, and which were further away from the Najdi heartland (cf. Ingham 1982: 40ff.). The first signs of break-down are apparent from dialects spoken by some speakers of Shammar and surrounding groups, like the Sudair, where the intransitive imperfect no longer distinguishes voice in its phonological form. Forms like tāšrāb INTRANS.IMPERF.ACT are replaced by their passive counterpart tāšrāb, INTRANS.IMPERF.PASS. In OT terms we can describe this process as follows.

The promotion of the phonological markedness constraints *(.CV.CV.C) and *(.CV.C) implies that phonological faithfulness is violated more often, and that the relation between lexical forms and their expression becomes more opaque, since the expression
Arabic changes from the perspective of Optimality Theory 167

has become more dependent on phonological context. As a result, speakers apparently no longer express this relationship consistently. At first the relationship becomes difficult in forms with low frequency. In Sudair Najdi Arabic speakers no longer specify in the intransitive imperfective whether a verb form has an active or passive meaning. The voice specification must now instead be deduced from the context (cf. Ingham 1982: 46). The lexical form of ‘passive voice’ itself has not been lost, since the passive voice lexeme [PASSIVE; iV] is still present in other forms. However, we do not see this lexeme appear again in the specific context of ‘intransitive, imperfective’. Apparently, in this specific context speakers do not want, or are not able to, express voice anymore. That is, Najdi language users, or language learners, have refrained from trying to express this specific lexeme in the context of the imperfective intransitive. In OT terms: Faith(Voice) is reranked below *[Intr, Imp, Voice], while the lexeme itself remains in the lexicon.

In earlier Classical Arabic and traditional Shammar Najdi Arabic we had the order as in Figure 4.3 (For further explanation of this diagram, cf. section 3.2). In Sudair Najdi Arabic the order is as in Figure 4.5.

![Figure 4.5 Dominance relations of voice/aspect constraints in Sudair Najdi Arabic](image)

Tableau 4.6 shows the ranking of *[Intr, Imp, Voice] above Faith constraints.

| Tableau 4.6 Input: Sudair Najdi Arabic t-a- sīr-b, ‘drink’ INTR.IMP.ACT.3MASC.SG |
|---------------------------------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|
| tiṣrub                          | *[Intr, Imp, Voice]              | Faith(Asp)                      | *                               | Faith(Voice)                     | *                               |
| INT.IMP.VOI                    | *                               | *(Asp)                          | *                               | *(Voice)                         | *                               |
|                             |                                  |                                  |                                  |                                  |                                  |
| taṣrub                         | ![Symbol]                       | ![Symbol]                       | *                               | ![Symbol]                       | *                               |
| INT.IMP.ACT                    |                                  |                                  |                                  |                                  |                                  |
| tasrāb                         | ![Symbol]                       | ![Symbol]                       | ![Symbol]                       | ![Symbol]                       | ![Symbol]                       |
| INT.IMP.VOI                    | ![Symbol]                       | ![Symbol]                       | ![Symbol]                       | ![Symbol]                       | ![Symbol]                       |

The question remains why this morphological markedness constraint leads to taṣrāb → tiṣrub for the active form and not to tiṣrub → taṣrāb for the passive form. This choice may be made because the i-a vocalism for the passive is more stable than the a-a vocalism for the active. That is, the passive form is also used in the passive of the transitive while the active of the transitive form is a-i.
In this change, the promotion of a phonological markedness constraint has led to the promotion of morphological markedness constraints as well, under the proper circumstances. That is, the raising of morphological markedness constraints is facilitated when the phonological markedness constraints have risen already, and when the social circumstances are favourable. Both these conditions are fulfilled in some Najdi varieties, and there are indeed more morphological changes in varieties spoken by sedentary Arabs who have more contact with city Arabic. These changes cannot be explained with the help of only phonological constraints: there is no plausible constraint reordering which yields e.g. *tisrab instead of tasrab, but which would maintain taskin TRANS.ACT.IMPERF instead of tiskin.

In Najdi Arabic varieties closer to Mesopotamia (cf. section 4.3.2.2 and Ingham 1982) further morphological markedness constraints were promoted, which led to the ranking as in Figure 4.6. In one variety voice is only expressed in third person forms.

In other Mesopotamian varieties the internal passive is lost, except in special registers like poetry. This means that *[Voice] has been raised above Faith(Voice), making *[Intr, Imp, Voice] *[non-3rd, Voice] vacuous. In these dialects other morphological markedness constraints were also promoted: transitivity is no longer expressed in the imperfective. The order of morphological constraints has become as in Figure 4.7.

In the urban Mesopotamian dialects finally, like in the Baghdad colloquial variety, neither transitivity, nor voice is ever expressed stem-internally. The morphological constraint ranking has become as in Figure 4.8.

---

95 In section 4.7.2.3 I deal with the replacement of voice infixes with voice prefixes in modern Arabic.
In these latter two figures Con(Stem) is no longer dominated by all three faithfulness constraints, because these are themselves fully dominated by higher ranked markedness constraints, which prevent violation of Con(Stem). When we compare other Arabic varieties, we see that this development continues, cf. Figure 4.9: in Moroccan Arabic aspect is not expressed by stem vowel modification either, and Con(Stem) is no longer violated by morphological faithfulness constraints, cf. however, the discussion in the next section.

Finally, in Nubi Arabic Con(Stem) has risen further, leading to a situation in which no morphological category nor any phonological constraint can have any impact on the internal form of the stem.

4.7.2.3 New voice and aspect affixes

Until now I have discussed only one aspect of the inflectional changes in Arabic, namely the loss of semantic categories expressed with infixes. Now I turn to cases where this loss was balanced by the introduction of new prefixes or the extension of old prefixes. Previously I discussed how in Mesopotamian Arabic the opaqueness of voice, transitivity and aspect infixes led to reanalysis and reordering of constraints. Morphological markedness constraints were promoted, until in Mesopotamian Arabic both *[Voice] and *[Trans] were ranked higher than Faith(Voice), and Faith(Trans). However, this order cannot explain why in Mesopotamian Arabic voice was expressed again by the extension of a previously derivational affix. That is, augmentational pattern 7 has extended its domain, become more productive and more predictable in its meaning, and become the new passive marker. I will now discuss how we can account for this in OT.

When voice is reintroduced in Mesopotamian or Moroccan Arabic as a category, the morphological markedness constraint *[Voice] cannot be ranked above Faith(Voice). We can model this introduction of the extended augmentation affix in several ways.

The first solution is to combine the initial restriction on infixal voice expressions and later reintroduction of prefixal voice into one constraint, namely: *[Voice, Imperfective, intransitive/ _ +stem-internal]. The promotion of this constraint does not prevent later reintroduction of prefixal voice. The advantage of this solution is that only one constraint reordering is needed. The disadvantage is that it is implausible that learners would prefer this specific constraint above a less specific constraint *[Voice, Imperfective, intransitive] when there is no sign of voice expression stem-externally yet. In other
words, the formulation of this constraint builds in later changes, which a learner cannot
know. This solution is more appropriate when the infinal reduction and the affixal
extension occur together.

A second solution is to suppose that there has not been a reordering of constraints in
Najdi and Mesopotamian Arabic. Instead, in Najdi Arabic the lexical item \([\text{PASSIVE}; \text{iV}]\)
could have changed its specification. When we assume that this lexical item has added a
condition that says \([\text{PASSIVE}; \text{iV}/ -\text{IMPERFECT OR -INTRANSITIVE}]\) we retain the same
effects. Moving towards the more sedentary Mesopotamic varieties we must assume that
the conditions on this lexical item became increasingly stricter, until the lexical item
disappeared completely from Baghdad Arabic. The augmentation prefix of augmentation
may also change its specification until it has the general meaning \([+\text{passive}]\). With this
solution we do not have to suppose any constraint reordering. Faith(Voice) remains a
highly ordered constraint, while only the corresponding lexical item has changed.

The disadvantage of this approach is that it does not explain why the lexical item
changes, and why it changes in this particular direction. This could be solved by
explaining how lexical items are actually acquired. We could introduce a learning
algorithm that says that lexical items are only learned without conditions, like ‘-imperfect
or -intransitive’ when the environment provides enough clear instances of the lexical
item, without this condition. However, when we assign a kind of universal status to such
conditions, we are in fact very close to introducing OT constraints. Therefore, when
aiming at a model with universal constraints I favour constraint reranking over lexical
change, when no other criteria need to be considered. This provides the theoretical
apparatus with which the exact paths of morphological changes in diverse cases can be
followed and compared.

Therefore, I first propose a stage where OT constraints like, *[Intr, Imp, Voice] and
*[non-3rd, Voice] are promoted. Only in the next stage, when these constraints prevent
acquisition of certain aspects of lexical items, may these lexical items be reanalysed, as
we saw in Scandinavian as well. Now, the solution to the reintroduction of voice prefixes
in Mesopotamian and Moroccan Arabic is as follows.

In the first stage the morphological markedness constraints, *[Intr, Imp, Voice] and
*[Voice], are promoted above Faith(Voice). In the second stage language users and
learners no longer meet forms that fully express voice, because of this higher ranking of
markedness constraints. Consequently, the voice infixes are not fully learned anymore,
and their lexical specification changes. These two steps result in a similar lexical change
as in the previous solution. The advantage of this approach is, however, that with help of
the OT constraint reorderings the process of change can be further analysed, and related
to cross-linguistic and universal findings. In the next stage, the voice infix has been
lost from the lexicon, there is no indication that *[Voice] (or *[Intr, Imp, Voice]) should
be ranked higher than Faith(Voice), because there are no items that could possibly
violate one of these constraints. This results in floating constraints. In the final stage, new
affixes are introduced, or, old affixes extended. The expression of new voice distinctions
do not violate any independently motivated constraint order, and the new learner will
place Faith(Voice) above *[Voice] again, and the new affix will be expressed.

This mechanism of promotion, lexical loss, constraint floating, and reintroduction
equally accounts for the loss of infinal aspect in Moroccan Arabic, and its subsequent
reintroduction with the help of prefixes.
4.7.3 Reduction in person, gender and number

4.7.3.1 Classical and Najdi Arabic

Another inflectional change widespread in Arabic varieties is the partial and in Nubi even complete loss of person, gender and number marking. I focus on the reduction of affixes in the imperfective. In Classical Arabic 1st, 2nd, and 3rd person, singular, dual, and plural, and masculine and feminine are expressed with the affixes in Table 4.6 above.

Several affixes express more than one category, and not all categories are related to one morphological position. For instance, FEM is expressed both in a prefix and in suffixes. In Classical Arabic there are several morphological markedness constraints that block overgeneration. First of all, although a first person dual is a possible form on the basis of the existing affixes, it is not generated. Therefore *[Dual, 1s]* ranks above Faith(Num). Other faithfulness constraints, Faith(Gen), and Faith(Pers) are ranked higher than markedness constraints that involve gender or person categories. Previously, in section 4.7.1, I introduced two other constraints:

Max(High): “A candidate with affixes that have features that are high on the feature hierarchy is preferred above a candidate with lower features.”

Max(Cat): “A candidate with affixes that have features a and b is preferred above a candidate expressing only b, that is a general feature is dispreferred for a more specific feature.”

These two constraints must be ranked high in Classical Arabic, and the order of constraints is as in Figure 4.10.

*[Dual, 1s]*
Max(Cat) Max(High)
Max(Num) Max(Gen) Max(Pers)
 *[Gen, Plur]*
 *[Dual]* *[Num]* *[Gender]* *[Pers]*

Figure 4.10 Dominance relations of PGN constraints in Classical Arabic

This order is apparent from Tableau 4.7, Tableau 4.8 and Tableau 4.9:

Tableau 4.7 Input: Classical Arabic ‘-aktib-’, ‘read’ 2FEM.PL

<table>
<thead>
<tr>
<th></th>
<th>Max(High)</th>
<th>Max(Num)</th>
<th>Max(Gen)</th>
</tr>
</thead>
</table>
| t-aktib-u:na | *!
| FEM-read-PLUR | *!
| t-aktib-na | *!
| 2read/FEM.PLUR | *!

Table 4.7 shows that Max(High) is ranked above Max(Num) and Max(Gen). Max(High) is violated in the first candidate because in the [t-] prefix a gender feature is
expressed in prefixal position, while in this position a person feature could also have
been expressed, which is higher in the hierarchy. Max(Num) and Max(Gen) are violated
because they are expressed in a fused morpheme, that is, they are not expressed in
exactly one form (cf. section 3.3.3.1).

<table>
<thead>
<tr>
<th>Tableau 4.8 Input: Classical Arabic ?-aktib-?, ‘read’ 3FEM.PL</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Tableau 4.8" /></td>
</tr>
</tbody>
</table>

Tableau 4.8 shows that Max(Cat) is also ranked above the other constraints. The second
candidate violates Max(Cat) because it does not use the most specific suffix possible.96

<table>
<thead>
<tr>
<th>Tableau 4.9 Input: Classical Arabic ?-aktib-?, ‘read’ 1DUAL</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Tableau 4.9" /></td>
</tr>
</tbody>
</table>

Tableau 4.9 shows that *[Dual, 1]* is ranked above Max(Cat), because otherwise *-aktib-
a:ni would have been selected. That is, n-aktib-u expresses the more general feature PL
and *-aktib-a:ni the more specific DUAL feature. Max(Cat) must be ranked above
Max(Pers) otherwise *-aktib-a:ni would be an excellent candidate. Max(Cat) must also be
ranked above *[Num]`, otherwise, again, *-aktib-u would be selected.

Classical Arabic forms like t-aktib-a:ni, FEM.DUAL.2ND show that constraints like *[Dual],
*[Gen] and *[Pers] are ranked below faithfulness constraints.

In Najdi Arabic not much has changed. The only difference is that the dual is no longer
expressed in any form. We can represent this change best by supposing that the filter
*[Dual, 1]* has been extended and is now the high-ranked filter *[Dual]. We could also
suppose that only the dual affix was lost. However, the loss of dual in the verb is
accompanied by a partial loss of the dual in nouns. Therefore, it is probable that the loss
took place on the semantic level, cross-cutting the whole lexicon, and not in only one
individual form.

4.7.3.2 Moroccan Arabic and Nubi

In Moroccan Arabic several Classical Arabic affixes were lost, and after this loss several
affixes were reinterpreted, cf. Table 4.29.

96 Max(Cat) and Max(High) look rather similar. However, to choose in cases where an affix may
express a or b, Max(High) is needed, while in cases, like in Tableau 4.8, a constraint is needed that
chooses between a more or a less specific feature content.
In addition to the loss of the dual, the first person affix \(^{-=1}\) has disappeared and the plural 1\(^{st}\) person affix \(n=\) has extended its meaning. Furthermore, the feminine plural \(-na=FEM.PL\) is lost. The last column of Table 4.29 shows how Moroccan Arabic can be reanalysed with the help of fewer affixes.

We could propose that some affixes were not acquired by new speakers, and that nothing else changed in the constraint ranking. When we suppose, however, that a reranking of the constraints may have led to the loss of affixes we can assume that there was a stage where *[Dual] and *[Gen, Plur] were promoted above faithfulness constraints. In addition, because these markedness constraints rose, resulting in the loss of certain affixes, other constraints rose as well. Max(Num) is no longer dominated by Max(High) and Max(Cat), because number is always expressed without fusion (contra Max(Cat) >> Max(Num)), and there is never a choice between expression of number, person or gender (contra Max(High) >> Max(Num)). Therefore, Max(Cat) and Max(High) have become irrelevant for number expressions.\(^{97}\) The order has become as in Figure 4.11.

\(^{97}\) We still must assume that the 1SG prefix \(^{-}\) has been lost as an affix, and not as a result of constraint reordering.
Tableau 4.10 Input: Moroccan Arabic ʔ-aktib-ʔ, ‘read’ 2FEM.PL

<table>
<thead>
<tr>
<th></th>
<th>*[Gen, Plur]</th>
<th>Max(Num)</th>
<th>Max(Gen)</th>
<th>Max(High)</th>
<th>Max(Pers)</th>
</tr>
</thead>
<tbody>
<tr>
<td>t-aktib-u:na</td>
<td>!</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FEM-read-PLUR</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>t-aktib-na</td>
<td>!</td>
<td>*</td>
<td></td>
<td>*</td>
<td></td>
</tr>
<tr>
<td>2readFEM.PLUR</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>t-aktib-u</td>
<td>!</td>
<td>*</td>
<td></td>
<td>*</td>
<td></td>
</tr>
<tr>
<td>2-read-PLUR</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

In some North African varieties the -i=FEM/2 suffix has disappeared, and y=3MASC has changed into y=3, which means that *[Gen] has risen (cf. section 4.4.2.2 and Versteegh 1984: 89). In other words *[Gen, Plur] has been generalised. This has led to the position where Max(Pers) and Max(Gen) are no longer dominated by Max(Cat) and Max(High), because there are now no longer conflicts between fused and non-fused affixes (contra Max(Cat) >> Max(Pers) and Max(Gen)), or between affixes with ‘high’ - that is, high on the category hierarchy- versus ‘low’ categories. The North African order of constraints is as in Figure 4.12, and exemplified for *[Gen] in Tableau 4.11.

![Figure 4.12 Dominance relations of PGN constraints in North African Arabic](image)

Tableau 4.11 Input: North African Arabic ʔ-aktib-ʔ, ‘read’ 2readFEM.PL

<table>
<thead>
<tr>
<th></th>
<th>*[Gen]</th>
<th>Max(Num)</th>
<th>Max(Gen)</th>
<th>Max(Pers)</th>
</tr>
</thead>
<tbody>
<tr>
<td>t-aktib-u:na</td>
<td>!</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FEM-read-PLUR</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>t-aktib-na</td>
<td>!</td>
<td>*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2readFEM.PLUR</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>t-aktib-u</td>
<td>!</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0-read-PLUR</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Until now I have suggested that it was initially the rising of the markedness constraints *[Gen, Plur] and *[Gen] that allowed the Max(Num) and later the Max(Gen) and Max(Pers) constraints to become independent from Max(Cat) and Max(High). However, an alternative viewpoint suggests that first Max(Num) was promoted in Moroccan Arabic, and Max(Pers) in North African Arabic, which, as a consequence allowed a markedness constraint like *[Gen, Plur] to be promoted. Figure 4.13 shows how the constraint ranking in Moroccan Arabic would fit into this scenario.
This view depends on the exact status of the t-prefix as well. Tableau 4.12 shows that an initial rise of Max(Num), before *[Gen, Plur] has risen, is also compatible with the Moroccan Arabic facts.

<table>
<thead>
<tr>
<th>Tableau 4.12 Input: Moroccan Arabic t-aktib-na, ‘read’ 2readFEM.PLUR</th>
</tr>
</thead>
<tbody>
<tr>
<td>t-aktib-u:(na)</td>
</tr>
<tr>
<td>FEM-read-PLUR</td>
</tr>
<tr>
<td>t-aktib-na</td>
</tr>
<tr>
<td>2readFEM.PLUR</td>
</tr>
<tr>
<td>t-kib-u</td>
</tr>
<tr>
<td>Ø-read-PLUR</td>
</tr>
</tbody>
</table>

In Tableau 4.12 we see that the promotion of Max(Num), without the promotion of *[Gen, Plur], already accounts for the loss of the FEM.PL-affix (-na is only the indicative suffix, of which the loss is a different story). When next the t-prefix is reanalysed as a zero-affix, we see that this reinterpretation concurs with the rising of the *[Gen, Plur] constraint. That is, the selected candidate remains t-aktib-u, but the t- is reinterpreted, or, with exactly the same effects, *[Gen, Plur] is promoted. For North African Arabic a similar argument can be given for the interaction of the promotion of *[Gen], Max(Plur) and Max(High).

These changes from Classical to Najdi, to Moroccan and finally to North African Arabic can be seen as the gradual promotion of markedness constraints, together with faithfulness constraints, at the expense of Max(Cat) and Max(High). These latter constraints forced the expression of more specific categories with the help of fused affixes. Promotion of faithfulness and markedness constraints resulted in the loss of especially fused categories.

When we assume that a system such as North African Arabic complies with all relevant faithfulness constraints, that is, Max(Num) and Max(Pers), then the further loss of such affixes cannot be explained by further promotion of these constraints. Therefore, for the final stage in simplification of Arabic towards Nubi, we must assume that the markedness constraints *[Num], and *[Pers] have been promoted. Now in Nubi the order of constraints has become as in Figure 4.14.
Again, these constraints eventually prevent adoption of any of the earlier affixes in the lexicon, and, when a new learner meets none of such affixes, the status of all these constraints becomes floating again. When all constraints are floating, new affixes can be introduced as in Juba Arabic (cf. page 160).

**4.7.4 Conclusion**

In the history of the varieties of Arabic we see the following tendencies. Rising of phonological markedness constraints leads to opaque meaning-form relations, which in their turn, lead to the rising of morphological markedness constraints. This implies that a language may first become less transparent and more complex, after which reanalysis may remove the opaqueness and change the language towards a simpler stage than before. The Arabic variety that passed through such a complex stage is Najdi Arabic, which is a Type 1 language. There is no evidence that a Type 2 variety like Moroccan Arabic also went through such a stage, without immediate loss of infixal meaning distinctions. Moroccan and Nubi Arabic show various promotions of faithfulness constraints and morphological markedness constraints independent of phonology, which corresponds to their Type 2 status.

In the person, gender and number deflection of Moroccan Arabic we saw how difficult it is to determine what force in language is responsible for deflection. Two forces operate in Arabic: First, the promotion of the markedness constraints. This corresponds to the tendency to express as few categories as possible. Second, the promotion of Max(Num), Max(Pers) and Max(Gen) constraints. These correspond to the tendency towards transparent one-to-one expression. The two tendencies cannot be separated in the development from Classical Arabic to modern Arabic, and I have shown that they correspond to two ways of constraint reranking in OT.

In both infixal and non-infixal, morphological and phonological changes we saw that there was interaction between constraint reranking and lexical change. The general movement was that affixes in one stage were lost in a later stage. When the affix loss was not a purely lexical loss, we modelled it as the result of constraint reranking. Promotion of especially morphological markedness constraints results in some affixes never reaching the surface. Consequently there is no reason for a learner to assume that there is such an affix at all. Next, when there is no potentially violating affix, the high-ranked constraint is always obeyed. Finally, when it is always obeyed, there is no evidence that it should be ranked high. Its position cannot be derived from the language data anymore, and its position is at most a default position, which can be changed by reintroduction of a constraint-violating affix. This cycle we saw in Najdi and Mesopotamian Arabic: rising of *[Voice] constraints, loss of voice infix, floating of *[Voice] constraint, reintroduction of a voice affix.

In this change, an important role is played by ‘lexicon optimisation’ (cf. section 3.4). That is, in informal terms, reanalysis of the lexicon leads to a smaller amount of faithfulness constraint violations by the candidates the lexicon provides. As a
consequence these highest ranked constraints tend to become ‘floating’, because the lexicon no longer provides candidates that could test their ranking. For example, consider the loss of na, FEM.PL in North African Arabic. First there is a stage in Classical Arabic, where the lexicon contains both na and u.

**Tableau 4.13 Input: Classical Arabic FEM.PL**

<table>
<thead>
<tr>
<th></th>
<th>LEX</th>
<th>Max(Cat)</th>
<th>*[Fem]</th>
<th>Max(Num)</th>
</tr>
</thead>
<tbody>
<tr>
<td>na, FEM.PL (fused)</td>
<td>←</td>
<td></td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>u, PLUR</td>
<td></td>
<td>*!</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

In a later stage, in North African Arabic, where *[Fem] and/or Max(Num) have become more important the result is as in Tableau 4.14.

**Tableau 4.14 Input: North African Arabic FEM.PL**

<table>
<thead>
<tr>
<th></th>
<th>LEX</th>
<th>*[Fem]</th>
<th>Max(Num)</th>
<th>Max(Cat)</th>
</tr>
</thead>
<tbody>
<tr>
<td>na, FEM.PL (fused)</td>
<td>←</td>
<td>*!</td>
<td>*</td>
<td></td>
</tr>
<tr>
<td>u, PLUR</td>
<td></td>
<td></td>
<td></td>
<td>*!</td>
</tr>
</tbody>
</table>

In contrast with Classical Arabic, na never comes to the surface in North African Arabic. Therefore when the lexicon is reanalysed, na may be removed, and we arrive at Tableau 4.15.

**Tableau 4.15 Input North African Arabic FEM.PL**

<table>
<thead>
<tr>
<th></th>
<th>LEX</th>
<th>*[Fem]</th>
<th>Max(Num)</th>
<th>Max(Cat)</th>
</tr>
</thead>
<tbody>
<tr>
<td>na, FEMPLUR (fused)</td>
<td>←</td>
<td>*!</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>u, PLUR</td>
<td></td>
<td></td>
<td></td>
<td>*</td>
</tr>
</tbody>
</table>

We call the lexicon of Tableau 4.15 **optimised** in comparison with Tableau 4.14, because the non-optimal candidate that violates high-ranking faithfulness constraints in Tableau 4.14 (that is, na, FEM.PL) is removed from the lexicon in Tableau 4.15. In other words, it violates LEX.

When comparing the changes in Arabic with the predictions of Table 3.2, most predictions appear to come out in Arabic: 1) the lexicon tends to become optimised when we turn to the more Type 2 Arabic varieties, 2) especially in Najdi Arabic, the promotion of PhonMark constraints induces promotion of filter constraints and loss of non-optimal lexical items, 3) Max(Cat) has been demoted in Moroccan and Nubi Arabic, 4) when we compare sections 4.2.2.3 and 4.4.2.3 the compliance or non-compliance with Isomorphy in Moroccan Arabic appears to be a side-effect of deflection and subsequent re-grammaticalisation of mood affixes. In other cases, Max(Order), the OT formulation of Isomorphy, is demoted as a side-effect of other changes (cf. section 4.2.2.3, 4.3.2.3, 4.5.2.3), and finally 5) several filter constraints have been promoted, independent from PhonMark constraints.

In summary, simplification in Arabic is a result of several interacting processes. Phonological markedness constraints may lead to morphological reduction. Morphological reduction may lead to lexical reanalysis, lexicon maximisation and constraint floating. We could imagine a grammar with a lexicon that is ‘optimal’, and we could conclude that complexity is only a matter of lexicon reinterpretation. However, behind superficial lexical processes, semantic and morphological constraints interact and
rerank to yield finally a floating set of constraints, and a simple lexicon. With OT we can
model the processes behind this simplification which only become clear when we look at
the historical processes, instead of only at the synchronic outcome.
5. Scandinavian

I use the term 'Scandinavian' languages to refer to the native Indo-European languages of Scandinavia, cf. Figure 5.1, i.e. Icelandic, Faroese, Norwegian, Danish, Swedish, their dialects, and their predecessors. I examine three Scandinavian languages in more detail, Icelandic, Faroese and Norwegian. I have chosen these because they derive from a relatively well-studied common source, Old Norse, while they had divergent sociolinguistic histories. While the Icelandic and Faroese speech communities have been isolated for centuries, the Norwegian community has had a more turbulent history with considerable language contact. I compare the outcomes of these different histories with Old Norse, as it is represented in the oldest documents from around 1200 CE.

In comparison with other Scandinavian languages, in Icelandic only a few changes in verbal inflection took place. There is little variation in Icelandic, and I discuss the standard variety of Icelandic. On the Faroe Isles there is some dialect variation. I discuss the written standard language, since this is the best described variety in Faroese. This standard differs substantially from spoken dialects, mainly in the phonology. I also examine the dialect spoken in the capital, Tórshavn, since this dialect differs in important aspects in its inflectional morphology and its history. During the first centuries of settlement Faroese was close to Old Norse. Later, it changed considerably. With respect to the early history of Faroese there are hardly any data. Therefore I examine only modern Faroese. In Norwegian there is a great deal of dialect variation. First of all, there are two modern super-regional standard languages, Bokmål and Nynorsk. Second, there
is much geographical variation in the spoken language. There is also social variation, especially in the cities. I have selected Bokmål for further examination, since this standard has developed from city dialects, and, it has been described best among Norwegian varieties. I describe what happened to the inflectional morphology in Old Norse varieties until about 1550, and I discuss the results of these changes in modern Bokmål.

5.1 Social History of Scandinavian

5.1.1 Introduction

Several terminologies are used to refer to the Scandinavian languages in various periods. Faarlund (1994) uses the terms Old Scandinavian and Modern Scandinavian for the languages in the periods before and after the Reformation. Vikør (1993) uses only the term Old Scandinavian, and does not use a general term for the languages spoken after the Reformation. I follow the terminology of Haugen (1976b), who distinguishes Old, Middle and Modern Scandinavian. The earliest external history of the Scandinavian languages can be represented as in Figure 5.2 and 5.3 based on Haugen (1976b), Norde (1997), and Torp (1982) in Vikør (1993).

<table>
<thead>
<tr>
<th>Time Period</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>About 3000 BCE</td>
<td><em>Indo-European (IE)</em> spoken in Scandinavia.</td>
</tr>
<tr>
<td>500 BCE-550 CE</td>
<td><em>Germanic</em> grows apart from IE, and spreads from the southern part of Sweden and Denmark southwards and northwards. At the end of this period, a separate <em>Scandinavian</em> variety develops.</td>
</tr>
<tr>
<td>550 CE-1050 CE</td>
<td>In this distinct variety, <em>Common Scandinavian</em>, differences arise between western and eastern dialects. In the ninth century western dialects spread to the Faroese Isles and Iceland.</td>
</tr>
<tr>
<td>1050 CE-1350 CE</td>
<td>After the establishment of Christianity many texts are written, predominantly in Iceland. The <em>Old Scandinavian</em> dialects can now be divided into the western varieties of Old Norse, comprising Old Norwegian, Old Icelandic, and Old Faroese and the eastern varieties Old Swedish, Old Gutnish and Old Danish. Old Danish goes its own way in this period, because of the influence it undergoes from German.</td>
</tr>
<tr>
<td>1350 CE-1550 CE</td>
<td>In the <em>Middle Scandinavian</em> varieties many innovations from the south spread northwards through the commercial activities of the Hanseatic traders. As a result the continental languages converge on each other, while they drift away from the more isolated insular languages.</td>
</tr>
<tr>
<td>1550-now:</td>
<td><em>Modern Scandinavian</em>, the continental languages diverge further from the insular languages and converge more to each other. In the 19th century national standard languages are developed.</td>
</tr>
</tbody>
</table>

Figure 5.2 History of Scandinavian 1

Indo-European was spoken in Scandinavia from at least as early as 3000 BCE onwards. During the following millennia differences arose between these varieties spoken in southern Sweden and Denmark and other Indo-European dialects. This led to a separate Germanic language. The main differences with other Indo-European branches were the stress shift to the first syllable of the word in Germanic, and the consonant mutations known as the first law of Grimm. Between approximately 500 BCE and 550 CE (Danielsen et al. 1995: 15) North Germanic dialects grew apart from East and West Germanic dialects, which developed much later into languages like English, Dutch, Frisian and German.
Stage 1: Viking Age, 400-1050

Common Scandinavian

Western dialects | Eastern dialects
--- | ---

Stage 2: High Middle Ages, 1050-1350

Old Scandinavian

North Scandinavian | Old East Scandinavian | South Scandinavian
--- | --- | ---
Old Icelandic | Old Faroese | Old Norwegian
Old | Old Swedish | Old Gutnish
Old | Old Danish

Stage 3: Late Middle Ages, 1350-1550

Middle Scandinavian

Insular languages | Continental languages
--- | ---
Icelandic | Faroese | Norwegian | Swedish | Danish

Stage 4: Modern Times, 1550-2000

Modern Scandinavian

Insular languages | Continental languages
--- | ---
Icelandic | Faroese | Nynorsk | North Bokmål | Swedish | South Danish

Figure 5.3 History of Scandinavian 2

North Germanic was distinct from the other Germanic varieties by various changes in vowel quality and grammatical suffixes. Haugen (1976b) calls this language ‘Common Scandinavian’. In this language, which is attested by runic inscriptions, after about 800 CE differences became apparent between eastern and western dialects. After christianisation in the eleventh century, we find many written manuscripts in these varieties, especially in Iceland. The dialects of the western varieties are called Old Norse, which comprises Old Icelandic, Old Norwegian and Old Faroese. Haugen calls all the dialects of the manuscript period from 1050 until 1350 ‘Old Scandinavian’. In this period the southern Scandinavian dialects in Denmark were strongly influenced by the Low German dialects spoken more southwards (Vikør 1993: 37ff.), while the Norwegian dialects also began to diverge from the variety of Scandinavian spoken on Iceland and the Faroe Isles.

In the next period, from 1350 until 1550 there were intensive commercial contacts between the Hanseatic cities in northern Germany, and the Scandinavian countries. The influence from Low German dialects and from Danish became stronger and reached large parts of the Scandinavian continent. Haugen calls the languages of this period ‘Middle Scandinavian’. Meanwhile, the insular languages, Faroese and especially Icelandic, remained largely isolated from the turbulent events on the continent. As a result, the former closeness between the western Scandinavian varieties weakened in this period, and Norwegian dialects converged towards Danish and Swedish. It is this latter period on which I concentrate with respect to the Norwegian variety, because during this period Norwegian changed much in its inflectional morphology. From the period of 1550 until the nineteenth century very little is known about Norwegian and Faroese, because on the Faroe Isles and in Norway most documents were written in a foreign language, Danish on the Faroe Isles and Danish and Swedish in Norway. In the age of Romanticism in the 19th century the vernaculars received attention again, and were cultivated and standardised in
their modern forms. In Norway two standards were developed; Bokmål, based on Danish and the city dialects, and, Nynorsk, based on the more conservative dialects.

5.1.2 Icelandic

Icelandic is most conservative among the Scandinavian languages, and it is considered to be a symbol both of Icelandic culture, and of a more extensive all-Nordic antique culture. About Icelandic history Haugen (1976b: 32-33) says:

"Among the factors that account for the conservatism [of Icelandic WK] through the centuries of obscurity may be mentioned the inner coherence and contact within the Icelandic community, the isolation from outside influence, and the force of the living literary tradition...By comparison with other Scandinavian languages Icelandic also shows extraordinary conservatism in its policy towards foreign borrowing."

I now turn to the Icelandic history, with special attention to the extent and kind of contact with non-native speakers, the attitudes towards one’s own language, and the network structure.

Iceland is a geographically isolated, large island, the coastal areas of which became settled in the second half of the ninth century, while its large interior parts would always remain inhabitable. The settlers were Vikings, mainly from western Norway, who spoke a western variety of Common Scandinavian. Their number rose from about 30,000 in 930 CE to 70,000 in 1100 CE. In 930 they formed a national political body, the Althing, which made laws and settled disputes between the powerful chieftains, who owned large pieces of land and many serfs. The Althing was democratic but not very powerful, because it could not impose the execution of laws. This led to social instability at the end of the 13th century (Magnússon 1977: 101ff.). Norway then took its chance and took over power in 1264. The Norwegian king ruled with the help of Icelandic representatives, while in later years foreigners came to rule Iceland. Around the year 1000 CE Iceland was christianised and since then the Church began to exert its power in political affairs and as a land-owner.

During the Age of Independence - until 1264 - Iceland and Norway were rather close in several respects. The Althing, and Christianity were imported from Norway, and there were political and commercial contacts, especially with Bergen. Because of the extreme weather conditions, these contacts implied an overwintering in the other country by the merchants (Chapman 1962: 37ff.). Until the 14th century the languages of Norway and Iceland were mutually comprehensible (Hastrup 1990: 181; Pálsson 1995: 12). According to Chapman (1962: 146) Icelandic had been influenced phonologically by Norwegian in that period.98 This is however disputed; the Norwegianisms in Icelandic manuscripts may also have been caused by wilful adaptation of a Norwegian style, and do not necessarily reflect wide-spread Norwegian influence in Icelandic speech (De Leeuw van Weenen, pers.comm.). In the Age of Independence many literary and non-literary works were written on Iceland. The oldest manuscripts that have been found date from the 12th century. Subsequently, many other pre-Christian, Christian, and secular prose and poetry were created, with themes such as the settlement of Iceland, the life of kings and bishops, and, the mythical Germanic tribal past with its heroes and gods (cf.

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98 English and Germanic also influenced Icelandic in that period, since Christianity involved many English terms, while several priests came from Germany.
Magnússon 1977: 43ff.) This literature had a popular base in an oral tradition, and it has always remained associated with the Icelandic people. Magnússon (1977: 83) says: “A large number of these characters [from the literature] have through the centuries been familiar figures in the homes of Icelanders of all classes, and they have been more real to the people in every epoch than the contemporary leaders of the nation.”

After the 13th century living conditions deteriorated. The climate worsened, which, together with disasters like epidemics, earthquakes, and volcanic eruptions brought famine, misery and a decrease of the population to a mere 34,000 in 1708 (Magnússon 1977: 117). At the same time, Iceland was ruled by foreign powers, first by Norwegians, and after 1380, when Norway was taken over by Denmark, by Danes. These powers, however, never imposed a foreign language on the Icelandic people, because, according to Vikør (1993: 57), in contrast with Norwegian (see below under 5.1.4), Icelandic was a uniform language, clearly separate from Danish, and had a literary tradition. Under foreign rule the power of the Icelandic chieftains further weakened, while the power of the foreigners and of the Church increased. Because of a lack of ships, in the 14th century trade fell into the hands of foreigners, who were first Norwegian, and subsequently German, Danish and especially English traders. The commercial activities during these centuries did not mean that there was a constant passing of merchants. Instead, while in more prosperous days up to ten ships a year visited Iceland, in less prosperous times no ships at all might come. From 1662 until 1787, the foreign exploitation reached its height, when a small group of traders under the protection of the Danish crown most ruthlessly exploited the Icelandic population. Nevertheless, the dependency on foreign powers did not affect the Icelandic sense of belonging together (cf. Hastrup 1990: 122).

The attitude of the Icelanders towards merchants and other foreigners was hostile. Hastrup (1990:113) says:

“While history made their [foreigners, WK] temporary presence an absolute necessity, for merchandise in particular, Icelandic cosmology could not accommodate them on any more permanent basis. If an individual was not of Iceland, there was no mental space for him in the country. If he had to stay for some reason or other, he had to learn Icelandic. This was a minimum prerequisite for being accepted.”

In spite of the Icelandic pride and sense of autonomy there are several accounts of foreign influence on Icelandic. In 1609 Arngrímur Jónsson discusses the “danger” of linguistic change, the “threat” of Danish and German influence or “imitations”, and the necessity of preserving the “purity” of Icelandic (cited in Pálsson 1995: 127). In the 18th century Eggert Olafsson complained that the old language was deteriorating in the coastal areas which were more influenced by Danish merchants (Hastrup 1990: 181). Rask, one of the founders of linguistics in the 19th century wrote to a friend in 1813:

“...hardly anyone will understand it [Icelandic, WK] in Reykjavik in a hundred years’ time, and hardly anybody else in the country in another two hundred years from then, if everything goes as until now and if strong support is not raised, since with the best of men every second word is Danish, with the peasants she [Icelandic] may stay the longest,”


Around 1550 the Reformation reached Iceland, which led to a further increase in power for the Danish state at the cost of local Roman Catholic leaders. It also led to a greater

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*According to Hastrup (1990), this is also due to a social and cultural attitude of the Icelanders in which all movements and organisations outside the household were frowned upon.*
Scandinavian

emphasis on the written word, which in combination with the invention of printing led to
more educational and cultural activities among Icelanders (Magnússon 1977: 113ff.). An
important stimulus for the development of the Icelandic language was the early
translation of the Bible (1584 CE), which did not take place in the other languages
considered here, Norwegian and Faroese. During the years between 1400 and 1800 the
native literature remained an important symbol (cf. Magnússon 1977: 101; Pálsson 1995:
18ff.).

In the 19th century the rise of the Romantic movement, the general revolutionary climate
and the economic progress in Europe resulted in a new national awareness of the past and
a drive towards more autonomy in the future. During the struggle for more independence,
the language was purified and it became an important symbol of national self-
In the 19th and 20th centuries the influence from Danish and other foreign languages was
actively counteracted. The written language was an important norm for the spoken
language, and the number of people who were engaged in developing these norms was
small. They could, however, direct the future of the Icelandic language because they
were teachers and writers. Since there was only one secondary school, the language
missionaries succeeded in halting and reversing the changes in Icelandic. Many Danish
words were replaced by native words and neologisms, and even some morphology was
reshaped on the model of Old Icelandic (Ottóson 1987 and De Leeuw van Weenen,
pers.comm.) In the 19th century Icelandic became also the language of administration.
This trend towards continuing the Old Icelandic tradition and elaborating the modern
language strictly within the pattern of Old Icelandic has become even stronger in the 20th
century (Jónsson 1998).

Gradually Iceland became more autonomous and prosperous; larger organisations like a
university and trade companies were founded, and fishing, agrarian and shipping
techniques were improved. In 1918 Iceland became an independent state under the
Danish crown, and in 1944 complete independence was achieved. The population
increased from 78,000 in 1900 to 270,000 in the late 1990’s. Urbanisation rapidly
increased, and with further globalisation in the latter half of the 20th century, Danish was
no longer a threat to Icelandic. Instead, English was considered to be a threat. The
influence of English is, however, less than in other Scandinavian countries (Víkör 1993:
145) since the Icelandic language and its literature are strong symbols of identity and
unity in time and space (Hastrup 1990: 210). This unification has been possible thanks
to a rather homogenous self-contained population. However, stressing the antiquity and
uniformity of Iceland and its people tends to obscure possible internal variation and
change to which I turn now.

The history of homogeneity on Iceland starts in the Age of Settlement. Many of the
settlers came from the same area in south west Norway, though there were also many
from other areas in western and eastern Scandinavia and the British isles. After arrival in

100 A modern travel guide for foreign tourists depicts Iceland and its people as follows: “To the
Icelander, the mother tongue is far more than just a method of communication - it is the essence of
culture, and its nurture and preservation is inextricably tied up with the survival of the national
identity and pride. Icelanders would never regard themselves as bigots, but they know in their
hearts that the Icelandic language is, as the poet Einar Benediktsson said, ‘more noble than that of
any other nation.’” (Perottet et al 1998).
Iceland some levelling probably took place in their speech (Pálsson 1995: 12). Jónsson (1998: 9) says: “One may therefore assume that the language spoken on Iceland in the first decades after the settlement was a mixed language.” The uniformity in Iceland has also been promoted by the easiness of communication and travel by fishermen and seasonal labourers around Iceland (Hastrup 1990: 181). Moreover, a strong literary tradition arose, which, if not being a norm for everyday speech, at least was a standard for right and wrong in general. Finally the Althing seems to have functioned as a nation-wide institution with some prestige that influenced and unified speech norms (Chapman 1962: 146).

Although in the following centuries Icelandic was influenced by foreign languages, it was not split into separate dialects. The main reason for the continuing uniformity was the pattern of settlement; since trade was in foreign hands and there were no other geographical, social or cultural reasons why people should cluster together, the population remained on isolated farms, which formed the highest level of organisation under the national level. There were no villages, let alone cities, until the end of the 19th century (Hastrup 1990: 48ff., 135). The lack of larger social units prevented the formation of local prestige norms. Furthermore, the lack of ‘street life’ prevented the rise of ‘chronolects’, that is, language varieties spoken by certain age groups, cf. Groenke (1966: 219ff.) and Vikør (1993: 212). There was also no place in society where a particular social class could interact and develop its own speech habits. Of course, there were differences in social position, especially in the age of settlement, but these differences were expressed outside the household (Hastrup 1990: 51). Finally there was no cultural stratification, i.e. there was no separate milieu of people with common cultural interests who developed separate language norms. Hastrup (1990: 189).

Today there is some variation in Icelandic caused by the changes in the settlement pattern, since most Icelanders live in larger villages and cities today. Possibly it is an effect of the more intense purism of the 19th and 20th century, which may have resulted in the adoption of one pure variety, and several forms deviating from this variety. However, the variation observed may also be an effect of more accurate observations today. Some variation is socially determined, as Pálsson (1995: 136) reports: “Although most Icelanders (61.3%) think there is “little or no” difference in language in terms of social class, no less than 29.9% believe there is considerable difference, and an additional 8.8% believe there is “very great” variability from one socio-economic group to another.” There are also markers of the geographical origin of a speaker. The markers and differences do not form isoglosses, which means there are no separate dialects or sociolects in modern Icelandic (cf. Benediktsson in Groenke 1966: 217).

The variation in modern Icelandic consists, first of all, in the differing number of foreign words people use. In unattended speech many Danish words are used and understood by everyone. This has been a feature of spoken Icelandic for a long time. In more formal speech and in written language these Danicisms are avoided. Since the 1950s many English words have also been used. This so-called ‘slang’ is not understood by everyone and is mainly used by young adults and adolescents (cf. Groenke 1966). Secondly there is some phonological variation; some speakers do not distinguish between /e-/ and /e-i, in

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101 “Man kann daher annehmen, dass es sich bei der auf Island in den ersten Jahrzehnten nach der Besiedlung gesprochenen Sprache um eine Mischsprache handelte.”
Scandinavian

written language), and /-ö/ (u-ö in written language), which can lead to lexical ambiguities. There is also morpho-syntactic variation; in standard Icelandic pronominal subjects receive either dative or accusative case in some constructions, independent of the meaning. Many speakers overgeneralise the dative case and omit this formal distinction. This is called the ‘dative plague’, and has been attested since the beginning of the 20th century. These two examples of variation both concern simplifications in the sense of reductions of functionless phenomena. Halstrup (1997: 87) provides an anecdote on variation in inflection: “In the fishing village the women with whom I worked readily admitted that they had difficulties in speaking good Icelandic; there were too many inflections. [Emphasis in original, WK].”

The official attitude towards variation, supported by most Icelanders, is that only a little variation is allowed. The deviations in the phonology and in the case marking system are deplored. Since the 19th century people have been inclined to ‘protect’ Icelandic to keep the link with the old literature as vivid as possible. Sigurður Nordal, an influential philologist, wrote in 1931: “…the fate of our language and our literature have always been coupled…it should be recalled that the special value of the Icelandic language, compared with other modern languages, is to a great extent comprised in the fact that it has not changed more than it has in a thousand years” (cited in Hastrup 1997: 85).

Keeping up the standard of Icelandic is a rather important issue in the Icelandic society today. In the mass media speaking correct Icelandic is a frequently discussed topic, and it is an important objective in education (cf. Pálsson 1995: 16). Hastrup (1990: 135) says: “One is Icelandic to the extent that one speaks pure Icelandic. Some are more Icelandic than others. Icelandic society may be exceptional in its reliance on linguistic concepts for cultural reproduction…”

In conclusion, with respect to the social parameters relevant to my study, the situation on Iceland is as follows:

- During the first centuries of the Icelandic nation, Icelandic was in close contact with Norwegian. From 1382 until 1944 it was in contact with Danish. After WW2 English became the most important foreign language. However, except with respect to governmental and commercial affairs, Icelandic has always been the main everyday language, also for literary, religious and educational matters.
- Iceland was a closed society and there have been few settlers who have learned Icelandic after the age of settlement.
- Nevertheless, until the 19th century Icelandic was highly influenced by Danish. Since then this change has been successfully reversed and modern Icelandic is modelled after Old Icelandic.
- Icelandic has been a written language since the 12th century, and a respectable body of literature has been written in the Middle Ages.
- Thanks to this literary tradition and thanks to the pattern of settlement, Icelandic has always been a relatively homogeneous language, with little internal variation.

102 This occurs especially with predicates of perception, agitation of mind, wishing, apprehension, etc.
Although the youth also identify with American culture and use some English words, Icelandic still has a very high symbolic value as an expression of Icelandic distinctiveness and Icelandic unity in time and space.

The Icelandic speech community has numbered about 30,000-70,000 for centuries. Since 1900 the population has grown to about 270,000.

5.1.3 Faroese

Faroese history is to some extent comparable to the history of Iceland. In the ninth century the Faroe Isles were colonised from south western Norway, and they became part of the Danish Empire at the end of the 14th century. Until the nineteenth century, the Faroese were also isolated and seldom visited by traders. Hagström (1984: 172) says: “Two merchant ships a year were to supply the Faroese with those necessities of life they could not raise themselves, and for long periods these ships were the only contact between the islands and the outside world. This commerce monopoly lasted in various forms until 1856, a period of nearly 600 years of isolation and stagnation.” Nevertheless, in several aspects the Faroese situation differs from the Icelandic situation. Firstly, in spite of the dearth of actual overseas contacts, Danish has been an important language on the Faroe Isles until today. Secondly, because of a different settlement pattern, the Faroe Isles have always had more dialect variation than Iceland. Thirdly, on the Faroe Isles there has been no written literary tradition. Finally the number of speakers of Faroese has always been much smaller than the number of speakers of Icelandic. I discuss these factors in the following sketch of Faroese history.

Around 800 CE the Faroe Isles were colonised by the Vikings (Chapman 1962: 146). During the next two centuries the Faroese people were independent, but in 1035 CE they were christianised and became part of the Norwegian kingdom. Until the second half of the fourteenth century, Norway was the main connection between the Faroese and the rest of the world. Later, the focus of Faroese contact with the outside world became Denmark, and the ties with Norway were loosened and eventually severed for several reasons. First of all, in the 13th century Norway became less oriented towards its colonies in the west (Danielsen et al. 1995: 72). Secondly, while until 1361 commerce with the Faroese was an exclusive privilege of Norwegians, later all Hanseatic traders were allowed to trade with the Faroese. Thirdly, at the end of the 14th century Norway became politically a part of the Danish Empire, and the centre of power became Copenhagen. In these early days of Faroese history, Faroese did not differ much from other west-Scandinavian varieties, except from a modest amount of phonological divergence and, probably some internal phonological dialect diversification (Chapman 1962: 115; Wylie 1987: 24).

In the 16th century the Reformation reached the Faroe Isles with far-reaching consequences. Latin, as a church language, was replaced by Danish, in which the Bible had been translated. Furthermore, in administration, legislation, commerce and education, Danish became the main language. Thus, until the beginning of the 20th century, the Faroe Isles were essentially diglossic, with Faroese used as a spoken Low variety and Danish as a predominantly written High variety (cf. Nauerby 1996: 30). Consequently, there are no manuscripts in Faroese from the period after the Reformation until the end of the 18th century.
In the 19th century a Faroese movement arose dedicated to the preservation of the Faroese language and the cultivation of a Faroese self-consciousness. In a manifesto of that time it was proclaimed that: “The aim first and foremost is to offer the Faroese language all due respect; the second, to get the Faroese to stand together and make progress in all respects, so that they may become self-reliant” (cited in Nauerby 1996: 53). Several developments led to this nationalistic movement. After 1800 important economic changes had reached the Faroe Isles, with the effect of more contact with the rest of the world. The way of subsistence changed from centuries of sheep breeding and a little export of wool to a strong emphasis on the export of fish. The population figures rose from a steady 4,500 for centuries, to 15,000 in 1901, and 45,000 at the end of the 20th century. In addition, more Faroese started to travel abroad, for purposes of education, and for commerce. Free trade had become possible since 1856, when the trade monopoly of the Danish crown was abolished. In the 1840s the Education Act was accepted and implemented on the Faroe Isles, which said that, since Faroese had no native literary tradition, Faroese could only be a dialect of Danish, and education should therefore be in Danish. Since in most villages education consisted of home instruction, this Act actually meant a violation of the diglossic situation. This caused popular protest, because, as Nauerby (1996: 48) says: “As long as Danish influence was limited to the official level, Faroeseness was not apparently threatened. The Education Act, however, threatened to break down these barriers by admitting Danish incursion into areas that were traditionally Faroese.” Although the Act was partly redrawn some years later, the popular protest was the onset of more self-consciousness among the Faroese people with respect to their language. At that time there was a group of Faroese intellectuals in Copenhagen, influenced by German 19th century Romanticism. In that ideology the unity of a people, a culture, a language and a nation was emphasised. For these men this led to a consciousness-raising of their own homeland, its culture, and the low status of its language. This new ideology together with the consequences of the Education Act for the Faroese people led to efforts to invent a new orthography for Faroese in order to raise its status up to the level of an independent language.

At the end of the 18th century Svabo had already written down many Faroese ballads. The orthography he used remained close to pronunciation, in order to preserve some accurate samples of Faroese. In 1846 Hammershaimb designed an orthography which, in contrast was meant to promote Faroese as an independent language. His spelling system was etymological, and thereby he could show that the roots of Faroese were quite different from Danish. This approach did not have to handle pronunciation differences between dialects, and Danish pronunciation was also neglected. By stressing the original Old Norse vocabulary as a viable source for new word formation, Danish borrowings could more easily be replaced. The emphasis in Hammershaimb’s design lay on the symbolic value of the writing system, and less on its practical value, as a means of communication (cf. Nauerby 1996: 73). The tension between symbolic value and practical usefulness would give rise to heated debates around the turn of the century and would lead to a situation resembling the original diglossic situation.

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An etymological spelling is not always the best means to show that a variety is different from a previous standard. In cases where it is the actual pronunciation, instead of the historical roots, that differ from the standard language, often a more phonetic approach is chosen, for instance when writing down Dutch dialects.
In the 20th century, the patriotic ideas were subsumed and further propagated through the programs of political parties. In the first half of the 20th century Faroese was introduced in areas where previously Danish had been used. After the Second World War, a referendum resulted in the agreement that the Faroe Isles would become largely independent, and Faroese would be the principal language. A clause was added that said: “Danish shall be well and thoroughly learned, and Danish as well as Faroese may be used in all official instances.” (cited in Nauerby 1996: 60). Since then, the struggle to preserve and extend the use of Faroese has taken another form. While the official Faroese language is guided and purified under the firm guidance of a language academy, the spoken language is flooded by Danicisms through the contacts with Denmark, which are more intense than ever (cf. Nauerby 1996: 133). Migration to and from Denmark for work or study has become easier. Furthermore, the mass media grew extensively after 1950. Today, TV and radio in other Scandinavian languages are watched and heard on the Faroe Isles. Many magazines and books are read in Danish. Recently years also English words have been incorporated into the Faroese language.

As a result of these developments Danish is now seen as the modern practical language, while Faroese is considered as a relic from the past (Hagström 1984: 181). Ironically, the old situation of diglossia now has a modern pendant. On official occasions, in written texts, and in an older language-minded part of the population, ‘High’ ‘Icelandicised’ Faroese is used, while the younger population, willing to express modern values, speak Danicised Faroese. Nauerby (1996: 129) says: “A whole range of vital sources of identification which have arisen with developments within the media are mastered by Danish, while the native language is plagued by a series of negative connotations.” Although Faroese is the High variety, it is questionable whether it will survive. In addition to the High/ Low dimension the opposition of overt versus covert prestige may play a role as well. While Standard Faroese may be the High variety, Danish, and Danicised Faroese may have more covert prestige (cf. Trudgill 1972). Another threat to the survival of Faroese is its undetermined niche in the society; while formerly Faroese could survive in a non-dominant, but clearly delineated position, nowadays, its position is less clear.

In conclusion, contact with the Danish after the Reformation led to a limited but clear niche in society for Faroese. When contact became more intense, the Faroese reacted by making a stand for their native speech. Nauerby says (1996: 67): “…the influence from outside, culminating towards the end of the 19th century, gave impetus to a nationalist movement in the Faroe Islands….On the one hand, the language revival (and the cultural struggle in general) was a defensive reaction against influences from abroad which contributed towards change in the old society. On the other hand, the widening of horizons procured an ideological basis for this struggle, in the form of National Romanticism.” Now, since horizons have been widened during last decades, Faroese is threatened again. In all periods of contact the Faroese people themselves changed their language. There has been no influence from Danes learning Faroese as a second language, cf. Hagström, (1984: 181): “Unlike the Faroese population, the Danes in the Faroese are bilingual only to a very small degree…a generation ago it was considered downright rude if a Dane was addressed in Faroese…”
The Faroe Isles consist of several large islands, and many small islands. In contrast with Iceland (see above), the Faroe Isles are characterised by much dialect diversity, which O’Neil (1963: 393) explains as follows:

“The interiors of the islands being generally uninhabitable, single isolated farms, later to become small clusters of farms and then some of them villages and even towns, were established around the perimeters of the islands, at the mouths of streams and at the end of bays and fjords. This pattern of settlement early gave rise to the development of a number of separate and distinct dialects, especially after the passing of the islands’ short-lived autonomy ended [in the beginning of the 11th century, WK] the need for close communication between islands and between the widely separated settlements on any given island.”

So, while the Icelandic community can be viewed as one large social network, the Faroe Isles must be seen as several connected but distinct networks, in which different speech habits could develop.

According to O’Neil (1963) a northern, a central and a southern dialect area are discernible. The northern and southern dialects differ from the central one in three important aspects. First of all, the central area is not only geographically central, but also economically, socially and culturally. Especially in the last decades, many Faroese from other areas have moved to Tórshavn -which is the capital, and lies in the central area- for its economic opportunities. As is also common in other languages, (cf. Andersen 1988), this centrality has led to various levellings in the Tórshavn dialect. O’Neil (1963: 394) remarks: “…many local dialects are there [Tórshavn, WK] mixed in an unprecedented way. This mixing could lead to rather significant changes in the inflectional system, for where other dialects have two and even three different qualities of unstressed vowel, Tórshavn Faroese has only schwa.” Second, in Tórshavn contact with Danish has been most intense, because Danish was traditionally used in more formal settings, such as administration and legislation, which mainly took place in Tórshavn. Nowadays, most contacts with Danish, as in education and commerce, still pass through Tórshavn. Therefore the Tórshavn dialect is thoroughly penetrated by Danish. The contact with Danish may have supported the changes mentioned above, since Danish has reduced most vowels in unstressed positions to schwa (cf. Haberland 1994: 319). Thirdly, the Tórshavn dialect has more prestige as a spoken language than other dialects today (Lockwood 1956: 133). Nauerby (1996: 87) says about the situation in the Faroese capital: “It must be remembered here that the influence of Danish was always most pronounced in the Danish satellite town of Tórshavn, on the southern part of main island Streymoy. The lack of infrastructure kept the local dialects purer. For this very reason, Tórshavn, or Havn as the town is normally referred to, suffered a bad reputation, stretching far back in time, as being an outpost of linguistic degeneration.” Lockwood’s and Nauerby’s views seem contradictory. However, the prestige of Tórshavn depends on one’s point of view. For those who want to preserve and elaborate the Faroese language in line with Old Norse and Icelandic, Tórshavn is indeed a degenerate variety. For those who want to be progressive and fashionable the danicised Havn is most prestigious.

In conclusion, with respect to the social parameters relevant to my study, the situation on the Faroe Isles is as follows:

- A contact situation held for about 400 years, in which the native speakers of Faroese were confronted with a related, but foreign language, Danish.
• There were hardly any second language speakers of Faroese.
• Until the beginning of the twentieth century, a diglossic situation held in which Faroese was the Low and Danish the High language. Today there is a High elaborated purified literary variety of Faroese, and a Low spoken variety with more Danish influence.
• There has always been a great deal of dialect diversity on the Faroe Isles.
• Faroese has only been written since the 19th century. This written variety has a high symbolic value as an expression of Faroese distinctiveness. The cultural identity of many Faroese, however, is one of progress and similarity with the rest of the western modern world. Thus influences from Danish are not avoided in speech.
• At present, the variety which represents this modernity the best is the Tórshavn dialect. This dialect has been koineised and danicised the most and has most prestige.
• The Faroese speech community has numbered less than 5,000 for centuries. Since last century the population has grown to a number of 45,000.

5.1.4 Norwegian
In its linguistic, social and political history Norway has been influenced to a greater extent by its neighbours than Iceland and the Faroe Isles. In the late Middle Ages there was much language contact in the cities, where most trade took place. During that time the inflectional morphology of Old Norse was largely lost, especially in urban speech. In the Middle Ages and later in the 16th until 19th century, Norwegian was profoundly influenced by other languages in its lexicon. From the latter period there are hardly any written testimonies in Norwegian, since everything was written in Danish. Since the rise of an independent state in the 19th century, Norwegian has become the medium of writing again. Now I turn to the sociolinguistic history of Norwegian in more detail with a special focus on the late Medieval period.

The people in Norway were predominantly farmers. From 800 to 1050, during the so-called Viking Age, Norway became an increasingly independent, though rather loose, unity, in a politico-military process in which a monarchy, an aristocracy and an administration were established (cf. Danielsen et al. 1995: 25). In that period the Vikings, from Norway, Denmark and Sweden, plundered places all over Europe that could be reached by water. Later the journeys of the Vikings became more peaceful, and their interests focused on trade. As a result of these contacts the Vikings were influenced by European culture, and they assimilated ideas of city planning and also the Christian religion (cf. Midgaard 1963: 23ff.). At the end of this period the introduction of the Roman Catholic church supported the process of unification and profoundly transformed social and cultural structure.

After the Viking Age, Norway became a more stable independent monarchy, and trade in fish and grain became more important, although restricted to the vicinity of Scandinavia. In Norway local farmers and fishermen were engaged in this trade, and there was no separate merchant class at that time. These part-time merchants met with foreigners who were encouraged by the government to trade with Norway, although they were directed to restrict their activities to the cities. In this period the influx of lexical borrowings began from English and Frisian, but especially from Low German.
Meanwhile Church influence grew significantly, and the Church developed an extensive network all over Norway. In those days of prosperity the population sharply increased (Danielsen et al. 1995: 33). Trade took place mainly overseas, and along the coast, where cities were established from the end of the 10th century onwards (cf. Sawyer & Sawyer 1993: 152). The first cities were Oslo, Tønsberg, Stavanger, and Trondheim, and a little later, Bergen grew in importance. Although these early towns were small in comparison with cities in other parts of Europe, they became very important centres. Sawyer & Sawyer (1993: 159) says: “Townes were more than economic centres. They were centres of authority -royal ecclesiastical, or both- and in the fifteenth century some Swedish towns had a crucially important role. They were also places through which new ideas and artistic styles were disseminated.” In the 12th century German Hanseatic merchants became responsible for part of Norway’s growing overseas trade (cf. Danielsen et al. 1995: 71), and at the end of the 13th century foreign traders began to settle permanently in Norwegian cities, especially in Bergen.

The 13th and 14th centuries were the heyday of the Hanseatic domination in Scandinavian trade. In this period, initially Bergen was the most significant commercial town. Later the commercial activities shifted to countries south and east from Norway, and the most important Norwegian trade centre became Oslo. Many Hanse traders settled in the larger Scandinavian cities, but did not mix with the native population. Danielsen et al. (1995: 98) says: “Both at the Kontor in Bergen and at the factories in Eastern Norway, the Germans had a tendency to withdraw from the rest of society…It was, however, only in Bergen that they lived close together and organized themselves extra-territorially, to the extent that marriage to Norwegian women was prohibited.” Jahr (1995: 130) says about the Bergen situation: “They [i.e. the German traders] lived together on the ‘German bridge’ and were mainly (young) men, whose families lived in Germany. Therefore the language contact in Bergen consisted only in contact between the local people and grown-up adults.”

The language of the Low German Hanse traders and the native Norwegians did not differ as much as Norwegian and German differ today. According to Braunmüller (1995: 36-38) there are no signs, like vocabularies or learner's grammars, that they tried to learn each other's native language. According to Braunmüller (1995), and Jahr (1995), there are also no signs that there has been a pidgin, creole, or mixed language, in so much as these are defined as representing norms with a clear break from former traditions. In addition, Danish had too little influence in Norway at that time to be accepted as a lingua franca. The kind of communication in Bergen and other cities in this period Braunmüller (1995) and Jahr (1995) call "semi-communication". In their view the absence of pidgin formation, second language learning and code-switching, together with information about the history of Germanic dialects implies that the kind of contact fell somewhere between language contact and dialect contact. While each could understand the other well enough for commercial purposes, communication did not proceed as smoothly as might be

104 “Sie wohnten gemeinsam auf der ‘Deutschen Brücke’ und waren in der Hauptsache Junggesellen oder Männer, deren Familien in Deutschland lebten. Dementsprechend bestand der Sprachkontakt in Bergen ausschliesslich im Kontakt zwischen der örtlichen Bevölkerung und erwachsenen Deutschen.”
105 This is a term coined by Haugen (1966) to refer to the inter-Scandinavian communication situation of today.
expected between speakers of closely related dialects. In Norway the willingness to adapt one’s own language to another form of speech may have been relatively high, since one was already accustomed to differences between Norwegian dialects and there was no unequivocal unified norm for Norwegian (cf. Seip 1971: 384n).

In the late Middle Ages Norwegian language use became influenced by the commercial activities of the merchants. For example Seip (1971: 132, cf. also p.126, 244ff., 411) remarks on the occurrence of levelling:

“The analogous levelling, which drove back the older u-umlaut, must have had its ground in the dialects, in which the more recent u-umlaut has not been carried out, that is, in coastal and urban dialects (Bergen). Moreover, probably an analogous levelling of this kind is implemented most easily in the social environment of cities, where the dialects were mixed and where native and foreign (German) elements collided most intensely.”

Today the iso-glosses of Norwegian with respect to conservative morphological and phonological features still correlate with the amount of dialect and language contact in the past.

In the 12th century two writing traditions emerged in Norway. In Bergen, where initially the King resided, several important law books were written. In the second half of the 12th century Trondheim became the see of the first Norwegian archbishop. After 1177 it also became the residential city for the Norwegian king and the stage for flourishing cultural and literary life, which was of great importance for the development of writing norms (cf. Seip 1971: 102). In spite of these emerging norms, there was some variation in the written language, because of the influence from the writers’ own dialects. In 1217 the throne was moved to Bergen, which received a new impetus for its writing tradition. This tradition was influenced by the many migrants from other parts of Norway, and also by the earlier Trondheim tradition and some minor traditions in the east of Norway. Seip (1971: 105) says:

“Here [in Bergen, WK] the various west Norwegian dialects met; those with vowel harmony (north west Norway), and those without (south west Norway). Here the rise of a mixed language was possible. When subsequently the Trondheim norm (without u-umlaut) increased in influence -for instance, because literature that originated from Trondheim, was written down in Bergen-, this naturally had to lead to an unstable written language, which is indicated by internally inconsistent elements.”

At the end of the 13th century Oslo became the centre of literary activity. As in Bergen, the Oslo writing tradition was influenced by the older writing tradition elsewhere, and by the original dialects of its practicers.

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106 “Der analoge Ausgleich, der den älteren u-Umlaut zurückdrängt, muss seinen Ausgangspunkt in den Mundarten haben, in denen der jüngere u-Umlaut nicht durchgeführt worden ist, also in See- und Stadtmundarten (Bergen). Überhaupt ist es wahrscheinlich, dass ein analoger Ausgleich dieser Art am leichtesten in dem sozialen Milieu der Städte vor sich ging, wo die Mundarten sich mischten und wo Heimisches und Fremdes (Deutsch) am heftigsten zusammenstießen.”

107 “Hier trafen die verschiedenen westnorwegische Dialekte aufeinander - diejenigen mit Vokalharmonie (Nordwestnorwegen) und diejenigen ohne (Südwestnorwegen). Hier war die Möglichkeit für die Entstehung einer Mischsprache gegeben. Wenn dann die Trondheimsche Norm (ohne jüngeren u-umlaut) dadurch Einfluss gewann, dass beispielsweise Literatur, welche trondheimsch gefärbt war, in Bergen abgeschrieben wurde, musste dies natürlich zu einer labilen Schriftsprache führen, die scheinbar innerlich widerstreitende Elemente aufzeigen.”
Around 1350 several outbreaks of the Plague killed more than half the population of Norway, which was even more than in other European countries. The consequences were far-reaching in economic, cultural as well as linguistic respects. It is estimated that in the early 14th century the population of Norway numbered around 425,000, and in 1520 around 150,000. Cultivated land became desolated, and also the clerical and merchant classes were severely diminished. The vacuum which then arose in Norwegian society was filled with more Hanseatic traders and Danish nobles in the local government (cf. Danielsen et al. 1995: 96). In 1380 the government came into Danish hands, where it stayed until 1814. Danish dominance grew stronger, but did not affect the Norwegian economy as negatively as it did in Iceland. In 1537 the Reformation reached Norway, with as a result that much land previously owned by the Church now came into the possession of the Danish crown. Norwegian government was placed more and more in foreign hands, cf. Danielsen et al. (1995: 140). In the 17th and 18th centuries the Norwegian population grew strongly from 150,000 in 1520 to 440,000 in 1665, 880,000 in 1800, 2,200,000 in 1900, and 4,400,000 today. Its economy improved, and the upper classes developed more national awareness. At the beginning of the 19th century European politics led to the disentanglement of Norway from Denmark. After 1814 Norway developed itself further as an independent nation, and it became independent in 1905. In the 20th century Norway became one of the most prosperous countries in the world; internal and external mobilisation became more intense, and, education, health care and other modern aspects of welfare societies were introduced. Meanwhile the percentage of urban population had grown from 7% in 1500 to 10% in 1800, 28% in 1900, and 74.4% in 1998 (Statistisk sentralbyrå 1999).

In the 14th century paper started to be used for writing instead of the more expensive parchment. Consequently writing became more common outside the clerical and royal sphere. However, during the Plague many skilled writers had died and the tradition of hand-writing was on the decline. Oslo had become the centre of cultural activities, and the original Oslo tradition deviated from the Trondheim and Bergen norms. As a result, the writings displayed more variation than before, and contained more local dialect influences, and loan words from Low German and Swedish, and later also from Danish (cf. Danielsen et al. 1995: 103). Under Danish rule Danish became more common as an official written language, instead of the unstable successor of Old Norse. Several other factors led to the complete disappearance of Norwegian as a written language in the 16th century. Because of its weak cultural and economic situation the printing press was introduced in Norway 150 years after its introduction in Denmark at the end of the 15th century. For that reason, and because Norwegian no longer had clear writing norms that related to everyday speech, the Reformation took place in Danish, and the Danish version of the Bible was used. In addition, Oslo was a polyglot city, receptive to foreign influences. Unsurprisingly, in this period Norwegian absorbed many loan words (cf. Seip 1971: 401f.). Vikør says (1993: 52): “In speech, Norwegian dialects were used, but in the cities, a Danish-based upper-class spoken variety gradually arose, especially for formal use, but it also strongly influenced everyday language.” The influence on the inflectional morphology, however, was no longer so intense, since this part of grammar had already become very similar to Danish.

The influence of Danish has remained strong until the twentieth century when Norwegian became viable as a written language again, and when the importance of Danish decreased
with the rise of English as the main international language (Vikør 1993: 141). The influence of Danish has been particularly strong in governmental affairs and on the upper classes of Oslo and other cities. The rural dialects have been less affected by Danish. These have accepted less borrowings than the urban and coastal areas, and the more isolated dialects also have retained more inflection from Old Norse (Seip 1971: 126). These different tendencies in Norwegian led to two different standardisations in the 19th century, when Norway had become an independent nation again. Nynorsk, created by Ivar Aarsen, was purposefully based on the more conservative rural dialects, while what was later called Bokmål, was based on the Dano-Norwegian speech of the upper classes in the cities (Seip 1971: 433). I have selected this latter variety for further examination, since it is most influenced by language contact. In the 19th and 20th century the status of the two standard languages in society was discussed, and some orthographical reforms were made. In the orthography of Bokmål in 1907 the verbal inflectional morphology was modified; instead of Danish -ede-past tense suffix, -et was used, based on upper class Bergen speech. In later reforms, the more native Norwegian -a was promoted. Today Bokmål is spoken by about 88% of the Norwegians. In spite of the Bokmål dominance, both standards are accepted, and dialect variation, in speech as well as in writing is tolerated, which is quite unique in Europe (cf. Kerswill 1994: 34).

In conclusion, since the earliest days of Old Norse there has been much trade contact with non-Norwegians, especially in the cities with Low Germans. Later the contact was mainly with Danes, and it extended to governmental and religious affairs. In the period in which Norwegian changed most in its inflection (1150-1350) there was much ‘semi-communication’ in the trade centres, especially in Bergen, between speakers who had widely diverging backgrounds - from Norwegian to Low German dialects - but who could still understand each other enough for commercial purposes. Nobody was completely bilingual, instead, each adapted to the others way of speech and no bilingual children were raised. The number of Low German speakers was quite high and they had high prestige. This led to a situation in which the cities were influenced by foreign languages and dialect mixing, while the rural areas remained more conservative. This mirrored itself later in the two standard languages. The cities had prestige as centres of progress, wealth and power. In the period from 1150 to 1350, there was no strong central norm for the Norwegian language, neither spoken nor written, although there were some writing traditions. Only in the 19th century did a viable writing tradition rise again. Dialect diversity and tolerance for deviating speech habits have existed for centuries in Norway. Danielsen et al. (1995: 143) says: “Taken together with the ever-wider interaction brought about through travel or seasonal migration in connection with trade, transport, shipping and fishing, the impression is sharpened that Norway was unusually mobile and unusually open, both internally and externally.” Seip (1971: 384) attributes the willingness to absorb new varieties from outside to the lack of inner unity in Norwegian at the time. Even today there are no strong social norms with respect to language as e.g. in Iceland. In other words, Norway in the 13th century is an outstanding example of a Type 2 speech community.

5.1.5 Summary and conclusion

In Table 5.1 I have summarised what happened in the various Scandinavian varieties.
### Table 5.1 Social factors distinguishing Scandinavian speech communities

<table>
<thead>
<tr>
<th>Source language</th>
<th>Icelandic</th>
<th>Faroese</th>
<th>Norwegian</th>
</tr>
</thead>
<tbody>
<tr>
<td>Split from the original language since</td>
<td>Old Norse</td>
<td>Old Norse</td>
<td>Old Norse</td>
</tr>
<tr>
<td>Amount of contact</td>
<td>Little</td>
<td>Much</td>
<td>Much</td>
</tr>
<tr>
<td>Reason of contact</td>
<td>Colonial domination</td>
<td>Colonial domination</td>
<td>Trade</td>
</tr>
<tr>
<td>Time scale of contact</td>
<td>550 years</td>
<td>600 years</td>
<td>700 years</td>
</tr>
<tr>
<td>Geographically displaced?</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Kind of learners of the language in question during the contact period</td>
<td>Adults</td>
<td>Adults/Children.</td>
<td>Adults, later also children</td>
</tr>
<tr>
<td>Substrates/ adstrates</td>
<td>Danish</td>
<td>Danish</td>
<td>Low German, later Danish</td>
</tr>
<tr>
<td>Status of ad/substrate</td>
<td>High</td>
<td>High, in a diglossic situation</td>
<td>High, in a bilingual situation</td>
</tr>
<tr>
<td>Kind of substrate/adstrate</td>
<td>Same language family</td>
<td>Same language family</td>
<td>Same language family</td>
</tr>
<tr>
<td>Influence of second language learners</td>
<td>No</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Evaluation by the speakers of their own language (during the period of change)</td>
<td>Very high esteemed, most important cultural symbol, which unifies Iceland in time and space</td>
<td>The written form is an ethnic symbol, the spoken language is used pragmatically today. Before, Faroese had also a clear symbolic value.</td>
<td>Probably low</td>
</tr>
<tr>
<td>Attitudes by the speakers towards other languages during the contact period (openness)</td>
<td>Pragmatic, but after 19th century negative</td>
<td>Pragmatic</td>
<td>Very Pragmatic</td>
</tr>
<tr>
<td>Kind of network structure</td>
<td>Homogeneous network, without (local) centres until 1900</td>
<td>Several dialects</td>
<td>A number of separate open dialects spread over a larger area</td>
</tr>
</tbody>
</table>

When we compare the histories of these three societies, the speech community of Icelandic stands out as the most Type 1 like community. It has been isolated for centuries, it has known little influence from second language learners, its population has lived homogenously spread over the country and it has a prestigious literature with a high symbolic value. There has been contact with related languages, especially with Danish. Many Danish words have entered the language. However, the influence from Danish has been counteracted since the rise of a nationalist self-conscious language movement in the 19th century.

The Faroese have been rather isolated as well, and their community also has Type 1 characteristics. However, its language has undergone far more influence from Danish in

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108 This label may seem artificial. However, I have introduced it to indicate roughly how much time has passed since the change has begun.

109 That is, with respect to its morphology the issue is irrelevant.
its domains of use and also in its vocabulary and grammar. In contrast with Iceland the Faroe Isles had several local communities, with their own dialects, while in the capital, Tórshavn, levelling between these varieties took place. Finally, the Faroese do not have such an extensive written literature which could set norms for the language as in Iceland.

The Norwegian community is the most typical Type 2 community. In the late Middle Ages adapted versions of Norwegian were used as the medium of communication in commercial contacts with the Hanseatic League. Later German and Danish influence grew further in importance. Norwegian has not been written for a long time, and the Old Norse literature is no longer a norm for modern Norwegian. Finally, throughout its history there were many dialects in Norway.

5.2 Old Norse

Characteristic of all Scandinavian and other Germanic languages is the inflectional category tense, and the difference between at least two conjugation types, the so-called ‘strong’ and ‘weak’ verbs. Other categories like mood, person, and number are common in older stages of Germanic and Scandinavian languages, but have disappeared from many of the modern languages. In some Scandinavian languages there is a verb-final middle voice suffix, which has developed out of a cliticised reflexive pronoun. Tense is expressed by stem alternation in the strong verbs, and by a dental suffix -d-, -t-, or -þ-, depending on the preceding phoneme, behind the stem of weak verbs. Tense also triggers allomorphy in the verb-final person/number suffixes. Mood is expressed by stem and suffix alternations. Person and number are expressed in a portmanteau form in the Scandinavian languages, as is common in Indo-European languages.

5.2.1 Data

I base my description of Old Norse on Boer (1920), Cleasby & Vigfússon (1874), Faarlund (1994), Haugen, (1976b, 1982), Noreen (1970) and Van Arkel (1984). Old Norse refers here to the variety which was spoken around 1200 in Iceland and Norway. Indo-European had more inflectional categories, like the dual, than Old Norse. With respect to inflection the main difference is the more compact expression of categories in Old Norse. The agglutinative character of Indo-European had changed into a fused system for various reasons. One reason is that the phonetic make-up changed in Germanic from a pitch accent to an initial stress system. As a result, the inflectional endings were not expressed as clearly and distinctly as before. However, other factors, like language contact and a universal tendency towards condensation may have played a role (cf. Kusters 2000; Salmons 1992; Werner 1984).

In Old Norse tense, mood, person, number, and voice are expressed in verbal inflection. How they are expressed depends on the verb class, and on the presence of other categories. Old Norse has three weak verb classes (cf. Boer 1920; Faarlund 1994), seven strong verb classes, and ten verbs which are partially weak and partially strong. Due to several phonological changes, there are many deviations from the paradigms within these classes (cf. Haugen 1982: 27, for an explanation of the most pervasive stem influencing

\[110\] As common in Scandinavian linguistics I use þ for the alveolar voiceless fricative, that is θ of the IPA notation.
The verb class determines the form of the person/number suffixes a verb receives, and the kind of stem alternations it displays. Verbs in Germanic belong to a weak or a strong conjugation. Traditionally (cf. Grimm 1822 and Noreen 1970, and also section 5.5.2.2 below) strong verbs are defined as verbs that form their past tense by vowel alternation or reduplication, while the past tense of weak verbs is formed with the help of a dental suffix. In Indo-European the strong verbs formed a regular productive class. Later the original regular system became more complicated.

In Old Norse, according to Noreen’s (1970) description, each strong verb had four different stems, one for the present tense, two for the past, and one for a participle. There were six verb classes, in which stems alternate by vowel alternation in six different ways. These ablaut alternations are synchronically unpredictable, and relics of an older regular system. The alternations express tense. In the past tense they are redundant, because they express the difference between singular and plural, which is already expressed by person/number suffixes. There were five rather small classes of verbs in Old Norse which were originally conjugated by means of five ways of reduplication. In the following discussion, I use Noreen’s ordering, though I treat the reduplication classes as one class, class 7, (cf. Einarsdottir 1945: 75ff.). Examples of the seven strong classes are the following (3PL.PRES, 1SG.PAST and 1PL.PAST forms are given):

1: grípa, greip, gripum
2: strjúka, strauk, strukum
3: skjalla, skall, skullum
4: fela, fal, fːlum
5: feta, fat, fːtum
6: ala, ól, ólum
7: ganga, gekk, gingum

Furthermore, there was a small group of verbs in which the former past tense had been reinterpreted as present tense, and in which a new weak past tense had been added. These are the so-called preterite-present verbs, which I do not discuss here.

Weak verbs have a present tense, a past tense, and a perfect participle stem. These stems are related by regular suffixation. The weak classes differed in Proto Indo-European by each having a different word-formative suffix, a so-called stem vowel, while the following tense, mood, and person/number suffixes were the same. However, because of the reduction of weakly stressed vowels and assimilation processes like umlaut, weak verbs can no longer be easily divided into a stem, a word formative suffix and an

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111 Some authors (e.g., Noreen 1970) suppose four weak classes. Since two of these classes behave in a similar fashion, especially in the finite tenses I examine here, and since there is disagreement about what verb belongs to what class, I will treat them as one class, class 2/3.
112 Other authors differ only in detail. Grimm (1822) acknowledges one more reduplicating class, while Cleasby (1874) joins class 4 and 5 together, and provides the classes with a different numbering.
113 The singular and plural past tense stems in the 6th class, however, are identical.
114 For the sake of presentation I only provide the 1PL.PAST for the third stem. In fact this form is a result of ablaut in combination with umlaut, from which I abstract here (De Leeuw van Weenen, pers. comm.). I do also not provide the fourth stem because this stem does not play a role in finite tenses.
115 Umlaut refers to a phonological process in which a vowel assimilates to features of the first following vowel like +front, that is, i-umlaut, or +round, that is u-umlaut.
Old Norse

infl ectional ending. Therefore, the weak classes differ in their paradigmatic patterning and not by one identifiable morpheme anymore.\textsuperscript{116}

The paradigms of Old Norse are as in Table 5.2. The symbol ‘ö’ stands for the u-umlauted\textsuperscript{117} a, which in Scandinavian linguistics is represented as an [o] with a cedilla. I use þ for a fricative 0, or δ. Voice differences are only allophonic. Boer (1920) has œ as the notation for Noreen’s (1970) a. I use the numbers for the classes as Haugen (1976b, 1982) does. I put weak class 3 next to the strong class, because of their similarities.

Table 5.2 Old Norse strong and weak verb inflection

<table>
<thead>
<tr>
<th></th>
<th>Strong Class</th>
<th>Weak Class 3</th>
<th>Weak Class 2</th>
<th>Weak Class 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>1SG.PRES.IND</td>
<td>skýta 'shoot'</td>
<td>krefja 'desire'</td>
<td>dœma 'judge'</td>
<td>vakna 'awake'</td>
</tr>
<tr>
<td>1SG.PRES.SUB</td>
<td>skýta</td>
<td>krefja</td>
<td>dœma</td>
<td>vakna</td>
</tr>
<tr>
<td>2SG</td>
<td>skýt-</td>
<td>kref-</td>
<td>dœm-</td>
<td>vakn-a</td>
</tr>
<tr>
<td>3SG</td>
<td>skýt-r</td>
<td>kref-r</td>
<td>dœm-ir</td>
<td>vakn-ar</td>
</tr>
<tr>
<td>1PL</td>
<td>skjót-um</td>
<td>krefj-um</td>
<td>dœm-um</td>
<td>vkn-um</td>
</tr>
<tr>
<td>2PL</td>
<td>skjót-þ</td>
<td>kref-þ</td>
<td>dœm-þ</td>
<td>vakn-þ</td>
</tr>
<tr>
<td>3PL</td>
<td>skjót-a</td>
<td>krefj-a</td>
<td>dœm-a</td>
<td>vakn-a</td>
</tr>
</tbody>
</table>

\textsuperscript{116} On a deeper level of analysis the three weak classes may, however, still be considered to differ only in the quality of the stem suffix vowel (De Leeuw van Weenen, pers.comm.). In section 5.7 I will also provide a more thorough analysis.

\textsuperscript{117} I use the term ‘umlaut’ for the process of backward assimilation, also called ‘shift’.
In Table 5.3 the Scandinavian data are presented in a more abstract way. In this table cells without suffix have the suffix of the cell to their left. Different numbers refer to stems related by ablaut. Different letters refer to stems related by phonological rules: a refers to the base, i refers to i-umlaut, u to u-umlaut, and g (glide) is j/v suffixation with accompanying i or u umlaut.

Table 5.3 Scheme of Old Norse verb inflection

<table>
<thead>
<tr>
<th></th>
<th>Strong</th>
<th>Weak Class 3</th>
<th>Weak Class 2</th>
<th>Weak Class 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>1SG.PRES.IND</td>
<td>1i -ø</td>
<td>1i-</td>
<td>1a/i'-i</td>
<td>1a -a</td>
</tr>
<tr>
<td>2SG</td>
<td>1i -r²</td>
<td>1i-</td>
<td>1a/-i-ir</td>
<td>1a -ar</td>
</tr>
<tr>
<td>3SG</td>
<td>1i -r²</td>
<td>1i-</td>
<td>1a/-i-ir</td>
<td>1a -ar</td>
</tr>
<tr>
<td>1PL</td>
<td>1u -um</td>
<td>1g-</td>
<td>1a/-u-</td>
<td>1u-</td>
</tr>
<tr>
<td>2PL</td>
<td>1a -i³ (-ir)⁴</td>
<td>1i-</td>
<td>1a/-i-</td>
<td>1a-</td>
</tr>
<tr>
<td>3PL</td>
<td>1a -a</td>
<td>1g-</td>
<td>1a/-i-</td>
<td>1a-</td>
</tr>
<tr>
<td>1SG.PRES.SUB</td>
<td>1a -a</td>
<td>1g-</td>
<td>1a/-i-</td>
<td>1a-</td>
</tr>
<tr>
<td>2SG</td>
<td>1a -ir</td>
<td>1i-</td>
<td>1a/-i-</td>
<td>1a-</td>
</tr>
<tr>
<td>3SG</td>
<td>1a -i</td>
<td>1i-</td>
<td>1a/-i-</td>
<td>1a-</td>
</tr>
<tr>
<td>1PL</td>
<td>1a -im</td>
<td>1i-</td>
<td>1a/-i-</td>
<td>1a-</td>
</tr>
<tr>
<td>2PL</td>
<td>1a -i³ (-ir)⁴</td>
<td>1i-</td>
<td>1a/-i-</td>
<td>1a-</td>
</tr>
<tr>
<td>3PL</td>
<td>1a -i</td>
<td>1i-</td>
<td>1a/-i-</td>
<td>1a-</td>
</tr>
<tr>
<td>1SG.PAST.IND</td>
<td>2</td>
<td>1a -p- a</td>
<td>1a -a-þ-</td>
<td></td>
</tr>
<tr>
<td>2SG</td>
<td>2 -r³</td>
<td>1a -p- ir</td>
<td>1a -a-þ-</td>
<td></td>
</tr>
<tr>
<td>3SG</td>
<td>2</td>
<td>1a -p- i</td>
<td>1a -a-þ-</td>
<td></td>
</tr>
<tr>
<td>1PL</td>
<td>3a -um</td>
<td>1a/-u-</td>
<td>1u -u-þ-</td>
<td></td>
</tr>
<tr>
<td>2PL</td>
<td>3a -u³ (-ur)⁴</td>
<td>1a/-u-</td>
<td>1u -u-þ-</td>
<td></td>
</tr>
<tr>
<td>3PL</td>
<td>3a -u</td>
<td>1a/-u-</td>
<td>1u -u-þ-</td>
<td></td>
</tr>
<tr>
<td>1SG.PAST.SUBJ</td>
<td>3i -a</td>
<td>1i -þ-</td>
<td>1a -a-þ-</td>
<td></td>
</tr>
<tr>
<td>2SG</td>
<td>3i -ir</td>
<td>1i -þ-</td>
<td>1a -a-þ-</td>
<td></td>
</tr>
<tr>
<td>3SG</td>
<td>3i -i</td>
<td>1i -þ-</td>
<td>1a -a-þ-</td>
<td></td>
</tr>
<tr>
<td>1PL</td>
<td>3i -im</td>
<td>1i -þ-</td>
<td>1a -a-þ-</td>
<td></td>
</tr>
<tr>
<td>2PL</td>
<td>3i -i³ (-ir)⁴</td>
<td>1i -þ-</td>
<td>1a -a-þ-</td>
<td></td>
</tr>
<tr>
<td>3PL</td>
<td>3i -i</td>
<td>1i -þ-</td>
<td>1a -a-þ-</td>
<td></td>
</tr>
</tbody>
</table>

¹ To render the correct forms, several complex i-umlaut rules are necessary, which I do not discuss.
² Some minor phonological rules are needed, e.g., a rule that says that the r-suffix in 2nd and 3rd SG.PRES.IND assimilates to the stem: r → ø / [+cont] /.
³ The symbol ‘þ’ is sometimes written as ‘t’ or ‘Ø’. This variation is only graphemic.
⁴ Only in Old Norwegian, not in Old Icelandic.
⁵ Other rules state that two syllable-final dentals, possibly occurring in the 2SG.PAST.IND may dissimilate to tst: [+dental] + r → tst. This was written as [zt].
The paradigm of the medio-passive voice is given in Table 5.4.

**Table 5.4 Old Norse medio-passive voice paradigm, ‘be called’**

<table>
<thead>
<tr>
<th></th>
<th>PRES.IND</th>
<th>PRES.SUBJ.</th>
<th>PAST.IND</th>
<th>PAST.SUBJ</th>
</tr>
</thead>
<tbody>
<tr>
<td>1SG</td>
<td>koll-u-mk</td>
<td>koll-u-mk</td>
<td>koll-u-h-u-mk</td>
<td>koll-u-h-u-mk</td>
</tr>
<tr>
<td>2SG</td>
<td>koll-a-sk</td>
<td>koll-i-sk</td>
<td>koll-a-p-i-sk</td>
<td>koll-a-p-i-sk</td>
</tr>
<tr>
<td>3SG</td>
<td>koll-a-sk</td>
<td>koll-i-sk</td>
<td>koll-a-p-i-sk</td>
<td>koll-a-p-i-sk</td>
</tr>
<tr>
<td>1PL</td>
<td>koll-um-sk</td>
<td>koll-im-sk</td>
<td>koll-u-h-um-sk</td>
<td>koll-a-h-im-sk</td>
</tr>
<tr>
<td>2PL</td>
<td>koll-i-zk</td>
<td>koll-i-zk</td>
<td>koll-u-h-u-zk</td>
<td>koll-a-h-i-zk</td>
</tr>
<tr>
<td>3PL</td>
<td>koll-a-sk</td>
<td>koll-i-sk</td>
<td>koll-u-h-u-sk</td>
<td>koll-a-h-i-sk</td>
</tr>
</tbody>
</table>

**5.2.2 Analysis**

**5.2.2.1 Economy**

The verbal inflectional categories of Old Norse are voice, tense, mood, person and number. The unmarked voice was the active voice, and there was also a medio-passive voice caused by verb final cliticisation of reflexive pronouns. In Old Norse, these clitics became suffixes, first because they formed a phonological unity with the verb, second because they could only be attached to verbs, and third because the paradigm of the medio-passive was not completely predictable. That is, the medio-passive voice was formed in an older period of Old Norse, after which several sound changes affected the two voices differently. For most forms, however, the medio-passive voice was formed by deleting the last consonant of the person/number suffix, and adding -sk. As a result, some categories became indistinguishable. That is, Economy applied to the 1SG.PRES made no distinction for mood in the medio-passive voice, and again when applied to the SG.PAST, made no distinction between 2SG and 3SG.

Tense, that is, present versus past tense, is always expressed. Like voice, the choice of a particular tense category leads only to Economy in other categories. In the past tense, mood is not distinguished in the singular in verbs of the first and second weak classes.

There are three moods, indicative, subjunctive and imperative, of which I only discuss the first two. The indicative and subjunctive are expressed by different stems, or by different person/number suffixes. In the 2PL.PRES, as a result of phonetic erosion and subsequent levelling, mood is not distinguished. In the past the indicative and the subjunctive are distinguished, either because the subjunctive stems have undergone i-umlaut, or because the plural indicative stems have other P/N-suffixes than the subjunctive. Only in the 1st and 2nd weak classes where i-umlaut did not apply, the singular forms of the past tense do not distinguish mood. From the 14th century onwards the suffixes of the PL.SUBJ are increasingly similar to the suffixes of the PL.IND. This conflation started in the PRES, where it remained restricted to the 1PL. Later this conflation spread to the 2 and 3PL.PAST (Van Arkel 1984).

---

118 In the 2PLUR.PRES vowel reduction in the weak classes 2 and 3 and in the strong classes led to a uniform person/number suffix for the indicative and subjunctive mood. The 2PLUR.PRES of the 1st weak class, however, is better explained as a levelling of the 2PLUR.PRES between verb classes.
Number is always expressed - except in the 3SG.SUBJ - by a suffix that also expresses person. In the SG.PRES the second person is identical to the third person form. According to Noreen (1970: 357) towards the end of the Old Norse period there was more variation in levelling in the singular. From 1200 CE onwards in Norway and 1300 CE in Iceland confections of 1 and 3SG.SUBJ have been attested (Noreen 1970: 363). After 1280 CE this also happened in the present indicative in auxiliary verbs like vera, ‘to be’, hafa, ‘to have’ and in a few other verbs, which follow the behavior of the preterito-present verbs (cf. Van Arkel 1984: 151). This occurred first in Norway, where this conflation of subjunctive suffixes eventually affected the whole paradigm (cf. below under section 5.5.2), and later spread to Iceland as well. Before 1400 CE the suffixes for the first and third person in weak PAST.IND verbs were unstable, and similar to strong verbs. After 1400 CE these forms always had the same ending. Conflations of these forms occurred later in all Scandinavian varieties.

5.2.2.2 Transparency

Allomorphy

I discuss allomorphy as it occurs in the suffixes and in the stem, phonologically and semantically conditioned, and depending on the class to which the verb belongs.

First of all, allomorphy of the tense suffix consists of a zero-form ø versus þ. The zero-suffix is used for strong verbs, and the dental suffix for weak verbs. This allomorphy defines when a verb is ‘strong’, or ‘weak’.

In older - more agglutinative - stages of Germanic and Indo-European in general, mood was a clear uniform morpheme, consisting of a front vowel (Beekes 1990: 290ff.). In Old Norse and in modern Scandinavian, however, mood is only perceptible in its effects on the person/number suffixes and the verb stem. This effect can be explained as the result of an underlying vowel or floating feature, like [+front], together with a set of rules to derive the surface forms. The alternative is to pose mood as a zero form, which triggers allomorphy in two directions. A third possibility is to suppose that mood is fused with the person/number suffix. However, this last theory cannot explain why the P/N suffix itself is unchanged with respect to mood in the PAST.SG, while at the same time triggering allomorphic effects in the verb stem. The opposite proposal, to analyze mood as being fused with the stem runs into the same problems, taking the present subjunctive into consideration, where the stem remains the same but the suffixes are different.

The P/N suffix has several allomorphs depending on voice, tense, mood and conjugation class. The medio-passive voice induces final consonant deletion of the person/number suffix. In addition, in all 1SG forms in the medio-passive the person/number suffix is -u- instead of -a-, -i- or -a-. Tense triggers allomorphy in most person/number suffixes, though not in the 1PL. Mood triggers suffix allomorphy, except for the 2PL.PRES and the SG.PAST. Finally, the conjugation class to which a verb belongs determines the choice of allomorph in the SG.IND. In the SG.PRES.IND. there are three alternative suffixes, while in the SG.PAST.IND there are two alternative allomorphs.

The verb-final medio-passive suffix is derived from an accusative reflexive pronoun (see also above). Before, this pronoun was inflected for person and number. In Old Norse however, the voice suffix had only two forms, one for the 1SG, -mk and one for the other
forms, -sk\textsuperscript{119}. From the 13\textsuperscript{th} century onward levellings took place between the 1SG and 1PL suffix.

Allomorphy in stems is conditioned by phonological triggers, by inflectional categories, and by the conjugation class to which the verb belongs. Phonologically induced allomorphy is of three kinds, i-umlaut (cf. note 117), u-umlaut, and glide insertion. I-umlaut took place in verb stems where a suffix with a front vowel followed the stem, and, where levelling spread this i-umlaut to other environments. This did not occur in the 1\textsuperscript{st} weak class, because in that class, the stem suffix vowel -a- blocked umlaut effects. Where i-umlaut appeared in the other verb classes in Common Scandinavian, depended on the syllabicity of the following [+front] features, the stem forming suffix of the weak class in question, the vowel quantity and quality of the verb stem, and even on the initial consonant of the verb stem (cf. Haugen 1982: 32ff., 128ff; Noreen 1970: 56ff.). As a result, in Old Norse there is considerable variation where i-umlaut affected the stem. In some verbs i-umlaut took place through the whole paradigm (e.g. \textit{duema}, ‘judge’ in Table 5.2), while in others i-umlaut remained restricted to non-PAST.IND forms (as in \textit{krefja}, ‘desire’ in Table 5.2), or to the PRES.SG and PAST.SUBJ. U-umlaut took place in verbs with suffixes with a -u-vowel, and an short a or long á stem vowel (cf. Haugen 1982: 33, 132; Noreen 1970: 69ff.). This took place in the 1PL.PRES.IND, the PL.PAST.IND, and in the medio-passive voice in all 1SG forms. Glide insertion is a retention of a former stem formative suffix in verbs of the 2\textsuperscript{nd} and 3\textsuperscript{rd} conjugation class (cf. \textit{krefja} in Table 5.2). The -j- and -w-glides occur in the PL.PRES.IND, and in the PRES.SUBJ.

In strong verbs stem allomorphy is also conditioned by tense, mood, and number. The present tense is formed with one stem, while the past tense is formed with a second stem for the SG.PAST.IND, and a third stem for both the PL.PAST.IND, and the PAST.SUBJ. In fact, in some past tense forms this allomorphy is the only indication of tense. For instance, skýt is 1SG.PRES.IND, while skaut is 1SG.PAST.IND. These allomorphs are not the result of an older process of umlaut, but are relics of the old Indo-European system of ablaut (cf Beekes 1990: 202ff.). The kind of allomorphy between the three stems depends on the kind of strong class to which a verb belongs. There are six different regular ways, and a seventh less transparent way of conjugating strong verbs.

In conclusion, Old Norse verbs display considerable allomorphy, both in the suffixes, especially the person/number suffixes, and in the stems, as a result of several umlaut and ablaut rules.

\textbf{Fusion}

In Old Norse the inflectional categories of person and number have been fused, since these categories are never expressed separately. Tense is best analysed as not having fused with the stem, because otherwise fusion would either have to be modelled as sensitive to lexical class membership, or the regular suffixation of -j- in weak verbs would have to be analyzed as fusion as well. Mood is analysed best as not having fused with either the stem or the person/number suffix (see above). Voice suffixes may trigger some assimilation, but as a semantic category it is not fused.

\textsuperscript{119} In 2PLUR, -sk after the dental consonant is written as -zk.
Homonymy

According to Carstairs-McCarthy (1987) there are two kinds of homonymy (cf. section 2.1.2.2): structural and accidental homonymy. In structural homonymy two values of a category are systematically expressed in an identical form, for instance number in the 3rd person in the subjunctive (cf. table 2 above). Accidental homonymy refers to forms that are just accidentally similar. Such homonymic forms do not necessarily share any category, but neither are they necessarily different in all (verb) classes. In Old Norse there were several homonyms of this latter kind:

- In all verb classes 3PL.PRES.IND is identical to 1SG.PRES.SBJ.
- In all strong verb classes 1 and 3SG.PAST are identical.
- In the 1st weak verb class 1SG.PRES.IND is identical to the 3PL.PRES.IND, and, therefore to the 1SG.PRES.SBJ.
- In the 2nd weak verb class 1SG.PRES.IND is identical to 3PRES.SBJ.\textsuperscript{120}
- In the 2nd weak verb class 2SG.PRES.IND is identical to 2SG.PRES.SBJ.\textsuperscript{120}
- In weak verbs with a front vowel in the stem, and in weak verbs of the 1st class, the SG.PAST.IND is similar to the SG.PAST.SBJ.\textsuperscript{121}

Fission

An examination of tense and mood indicates that fission has taken place, since they both can be expressed in the verb stem and in a suffix. However, there are no instances in Scandinavian where tense or mood is expressed in two positions by itself. Therefore allomorphy suffices as an explanation for these facts. Because modern Scandinavian languages have no fission, this topic will not be discussed again in this chapter.

5.2.2.3 Isomorphy

The ordering of suffixes in Old Norse is as follows: Verb-Tense-Mood-Person/Number-Voice. Note that the position of voice is remarkable, though historically explainable (see above). Since this order has not essentially changed in modern Scandinavian languages, the Isomorphy Principle will not be discussed further.

5.3 Icelandic

5.3.1 Data

My data for older Icelandic are based on Cleasby et al. (1874) and Noreen (1970). For modern Icelandic I have used Einarsson (1945), Thráinsson (1994), and Kress (1963), and lecture notes of De Leeuw van Weenen. Icelandic inflection, for the greatest part, has remained the same as in Old Norse, except for the following changes:

1. The levelling of 1st and 3rd person singular in the subjunctive and in the past tense.
2. The reduction of most subjunctive plural suffixes to the indicative forms.

\textsuperscript{120}This is an instance of erosion and consequent conflation, because, thanks to the e/i alternations in Old Norse varieties, and reduction in unstressed vowels, these two vowels merged, which led to an accidental homonymy between, e.g., dom-i-z and dom-i-e-z.

\textsuperscript{121}These forms are similar because i-umlaut, which indicates mood in other verbs, is blocked in these verbs, either because there is an intermittent stem vowel (1st class), or because these verbs already have a front vowel in their stem, making i-umlaut vacuous.
### Table 5.5 Icelandic strong and weak verb inflection

<table>
<thead>
<tr>
<th></th>
<th>Strong Class</th>
<th>Weak Class 3</th>
<th>Weak Class 2</th>
<th>Weak Class 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>1SG. PRES. IND</td>
<td>skýt</td>
<td>kref</td>
<td>dem-i</td>
<td>vkn-a</td>
</tr>
<tr>
<td>2SG</td>
<td>skýt-ur</td>
<td>kref-ur</td>
<td>dem-ir</td>
<td>vkn-ar</td>
</tr>
<tr>
<td>3SG</td>
<td>skýt-ur</td>
<td>kref-ur</td>
<td>dem-ir</td>
<td>vkn-ar</td>
</tr>
<tr>
<td>1PL</td>
<td>skjót-um</td>
<td>krefj-um</td>
<td>dem-um</td>
<td>vókn-um</td>
</tr>
<tr>
<td>2PL</td>
<td>skjót-ið</td>
<td>krefj-ið</td>
<td>dem-ið</td>
<td>vkn-ið</td>
</tr>
<tr>
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<td>skjót-a</td>
<td>krefj-a</td>
<td>dem-a</td>
<td>vkn-a</td>
</tr>
<tr>
<td>1SG. PRES. SUBJ</td>
<td>skjót-i</td>
<td>krefj-i</td>
<td>dem-i</td>
<td>vkn-i</td>
</tr>
<tr>
<td>2SG</td>
<td>skjót-ir</td>
<td>krefj-ir</td>
<td>dem-ir</td>
<td>vkn-i</td>
</tr>
<tr>
<td>3SG</td>
<td>skjót-i</td>
<td>krefj-i</td>
<td>dem-i</td>
<td>vkn-i</td>
</tr>
<tr>
<td>1PL</td>
<td>skjót-um</td>
<td>krefj-um</td>
<td>dem-um</td>
<td>vókn-um</td>
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<tr>
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<td>skjót-ið</td>
<td>krefj-ið</td>
<td>dem-ið</td>
<td>vkn-ið</td>
</tr>
<tr>
<td>3PL</td>
<td>skjót-i</td>
<td>krefj-i</td>
<td>dem-i</td>
<td>vkn-i</td>
</tr>
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<td>kraf-ð-i</td>
<td>dem-d-i</td>
<td>vkn-a-ð-i</td>
</tr>
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<td>kraf-ð-ir</td>
<td>dem-d-ir</td>
<td>vkn-a-ð-ir</td>
</tr>
<tr>
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<td>skaut-</td>
<td>kraf-ð-i</td>
<td>dem-d-i</td>
<td>vkn-a-ð-i</td>
</tr>
<tr>
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<td>skut-um</td>
<td>kröf-ð-um</td>
<td>dem-d-um</td>
<td>vókn-u-ð-um</td>
</tr>
<tr>
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<td>skut-uð</td>
<td>kröf-ð-uð</td>
<td>dem-d-uð</td>
<td>vókn-u-ð-uð</td>
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<td>kröf-ð-u</td>
<td>dem-d-u</td>
<td>vókn-u-ð-u</td>
</tr>
<tr>
<td>1SG. PAST. SUBJ</td>
<td>skyt-i</td>
<td>kref-ð-i</td>
<td>dem-d-i</td>
<td>vkn-a-ð-i</td>
</tr>
<tr>
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<td>kref-ð-ir</td>
<td>dem-d-ir</td>
<td>vkn-a-ð-ir</td>
</tr>
<tr>
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<td>kref-ð-i</td>
<td>dem-d-i</td>
<td>vkn-a-ð-i</td>
</tr>
<tr>
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<td>kref-ð-um</td>
<td>dem-d-um</td>
<td>vókn-u-ð-um</td>
</tr>
<tr>
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<td>vókn-u-ð-uð</td>
</tr>
<tr>
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<td>skyt-u</td>
<td>kref-ð-u</td>
<td>dem-d-u</td>
<td>vókn-u-ð-u</td>
</tr>
</tbody>
</table>

In Table 5.6 I show a scheme of the Icelandic inflectional structure. With respect to the symbols in this table, the same comments hold as for Table 5.3.
Table 5.6 Scheme of Icelandic verb inflection

<table>
<thead>
<tr>
<th>Category</th>
<th>Strong</th>
<th>Weak Class 3</th>
<th>Class 2</th>
<th>Class 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>1SG.PRES.IND</td>
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<td>1i -</td>
<td>1a/i -i</td>
<td>1a -a</td>
</tr>
<tr>
<td>2SG</td>
<td>1i -ur</td>
<td>1i -</td>
<td>1a/i -ir</td>
<td>1a -ar</td>
</tr>
<tr>
<td>3SG</td>
<td>1i -ur²</td>
<td>1i -</td>
<td>1a/i -ir</td>
<td>1a -ar</td>
</tr>
<tr>
<td>1PL</td>
<td>1u -um</td>
<td>1g -</td>
<td>1u -</td>
<td>1u -</td>
</tr>
<tr>
<td>2PL</td>
<td>1a -ið</td>
<td>1g -</td>
<td>1a/i -</td>
<td>1a -</td>
</tr>
<tr>
<td>3PL</td>
<td>1a -a</td>
<td>1g -</td>
<td>1a/i -</td>
<td>1a -</td>
</tr>
</tbody>
</table>

<table>
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<tr>
<th>Category</th>
<th>Strong</th>
<th>Weak Class 3</th>
<th>Class 2</th>
<th>Class 1</th>
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</thead>
<tbody>
<tr>
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<td>1g -</td>
<td>1a/i -</td>
<td>1a -</td>
</tr>
<tr>
<td>2SG</td>
<td>1a -ir</td>
<td>1g -</td>
<td>1a/i -</td>
<td>1a -</td>
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<tr>
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<td>1g -</td>
<td>1a/i -</td>
<td>1a -</td>
</tr>
<tr>
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<td>1u -</td>
<td>1u -</td>
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<td>1g -</td>
<td>1a/i -</td>
<td>1a -</td>
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<td>1a/i -</td>
<td>1a -</td>
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<th>Class 1</th>
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<td>1a -a-D-</td>
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<tr>
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<td>1a -a-D-</td>
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</tr>
<tr>
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<td>3a -um</td>
<td>1u -D-</td>
<td>1u -u-D-</td>
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<td>1u -u-D-</td>
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<table>
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<th>Class 2</th>
<th>Class 1</th>
</tr>
</thead>
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<td>1i -D-</td>
<td>1a -a-D-</td>
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</tr>
<tr>
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<td>1i -D-</td>
<td>1a -a-D-</td>
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</tr>
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<td>3i -i</td>
<td>1i -D-</td>
<td>1a -a-D-</td>
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<td>1u -u-D-</td>
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<td>3i -uð</td>
<td>1i -D-</td>
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<td>1i -D-</td>
<td>1u -u/a-D-</td>
<td></td>
</tr>
</tbody>
</table>

¹ This suffix depends on the preceding sound. After in or x there is a zero allophone. After r there is a ð, after s a t. After other consonants there is an ur suffix, and after vowels there is rð. These are all allophones.
² ur has as variants r after vowels and complete assimilation after n, r, s and x.
³ Stems in the PAST.SUBJ.PL on -k, or -g, have plural endings -jum, -júð, and -jú.
The voice endings of the medio-passive in Icelandic are given in Table 5.7.

**Table 5.7 Icelandic medio-passive voice paradigm, 'be called'**

<table>
<thead>
<tr>
<th></th>
<th>PRES.IND</th>
<th>PRES.SUBL</th>
<th>PAST.IND</th>
<th>PAST.SUBL</th>
</tr>
</thead>
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<td>1SG.</td>
<td>kall-a-st</td>
<td>kall-i-st</td>
<td>kall-a-ð-i-st</td>
<td>kall-a-ð-i-st</td>
</tr>
<tr>
<td>2SG</td>
<td>kall-a-st</td>
<td>kall-i-st</td>
<td>kall-a-ð-i-st</td>
<td>kall-a-ð-i-st</td>
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<td>kall-i-st</td>
<td>kall-a-ð-i-st</td>
<td>kall-a-ð-i-st</td>
</tr>
<tr>
<td>1PL</td>
<td>köll-um-st</td>
<td>köll-um-st</td>
<td>köll-u-ð-um-st</td>
<td>köll-u-ð-um-st</td>
</tr>
<tr>
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<td>kall-i-st</td>
<td>kall-i-st</td>
<td>köll-u-ð-u-st</td>
<td>köll-u-ð-u-st</td>
</tr>
<tr>
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<td>kall-i-st</td>
<td>köll-u-ð-u-st</td>
<td>köll-u-ð-u-st</td>
</tr>
</tbody>
</table>

### 5.3.2 Analysis

#### 5.3.2.1 Economy

Icelandic has the same inflectional categories as Old Norse: voice, tense, mood, person and number. I discuss these as far as they differ from Old Norse. When a verb is used in the middle voice, fewer categories can be expressed than in Old Norse. Old Norse had a distinct middle voice marker for the 1SG. In modern Icelandic the 1SG is expressed similarly to the 2 and 3SG. As a side-effect, the 1SG.SUBJ. is now signalled with a distinct form. Other instances of economy are the 1PL.PRES and all PL.PAST forms; these are no longer sensitive to mood distinctions. The levellings in the middle voice started in the 12th century (cf. Noreen 1970: 369).

The Old Norse subjunctive has been preserved in Icelandic (cf. Einarsson 1945: 73), though a few levellings took place. The 1PL.PRES no longer distinguishes mood. This is not the result of a sound change, but an analogical extension. The 1SG.SUBJ in present and past tense has become identical to the 3SG.SUBJ, and is now -i. This is the result of levelling between these person suffixes (cf. section 5.2.2.1). In the past tense, the effects of the i-umlaut in the subjunctive still distinguish between moods, except where i-umlaut had no effects, i.e. in stems where there was already a front vowel, or where there was an intervening stem vowel (in the fourth weak verb class). In those cases, in Old Norse the plural forms were distinguished by a different set of suffixes. In Icelandic these suffixes have been replaced by the same suffixes used for the indicative plural past. Therefore, in the instances where i-umlaut cannot operate, mood is not distinguished in the plural past anymore. In summary, thanks to several levellings mood is no longer specified in:

1. The first person plural present.
2. The first person singular present in the weak 2 class.
3. The plural past, in instances, where there is no i-umlaut.

Tense is always expressed. Number is expressed though there are some accidental homonymies, like in Old Norse. Since the PL.PAST. has the same suffixes in the indicative and in the subjunctive, the homonymy between 3SG and 3PL.PAST.SUBJ no longer exists. The accidental homonymy between 3PL.PRES.IND and the 1SG.PRES.SUBJ has also disappeared. In the category of person, some minor changes have taken place. Already in the late Middle Ages, the singular person system was unstable. The variation in Old Norse accumulated into a system in Iceland where differences between 1SG and 3SG
Scandinavian

disappeared except in the present indicative. While in Old Norse only strong verbs 1 and 3SG.PAST.IND were similar, in modern Icelandic the 1 and 3 SG.PAST.IND are identical in all verbs. The levelling of 1st and 3rd person in the past may have been modelled by the strong verb paradigm, which consisted of frequent verbs. The levelling in the present tense, which later continued in all subjunctive forms, probably started on the basis of the model of the frequentpreterito-present forms, which express present tense with strong past tense suffixes. From the 14th century onwards levellings between 1st and 3rd person took also place in the SG.PRES.IND. After the 17th century, however, the 1st/3rd person distinction returned.

5.3.2.2 Allomorphy and conjugation classes

There have been some changes in allomorphy since Old Norse. I will examine suffix allomorphy, stem allomorphy which is phonologically and semantically conditioned, and stem allomorphy which depends on the morphological class to which a verb belongs. The levelling of 1,2 PL and 3PL.PAST mood distinctions has led to a little less allomorphy in the set of person/number (P/N) suffixes, because P/N-suffixes no longer display allomorphy which depends on mood in the forms mentioned above. Although these suffixes now display allomorphy conditioned by tense, the total number of allomorphic forms has decreased a little. Just as in Old Norse, the P/N suffixes in Icelandic are dependent on the conjugation class of the verb in the singular indicative mood. When comparing the tables of Icelandic and Old Norse, Old Norse appears to have a few more allomorphs (cf. section 5.7.3 for a more detailed comparison of the affix inventories of Old Norse and Icelandic from the view-point of Optimality Theory). In Icelandic, however, the past tense dental suffix in the weak verbs displays more phonologically conditioned variation, as it was probably already the case in Old Norse (cf. Boer: 1920: 199). A genuine difference between Old Norse and Icelandic is the disappearance of vowel harmony, which caused variation between eC/iC, and uC/oC suffixes in Old Norse. This vowel harmony only occurred in Norway, and may have already been removed from the language during the Age of Settlement. In the 2SG.PRES.IND Icelandic has a little more phonologically conditioned allomorphy, because of the attached dental/alveolar consonant -d/t/ð whose occurrence depends on the preceding phoneme (cf. Einarsson 1945: 91).

Tense, mood and number still condition stem allomorphy, just as in Old Norse. Phonologically conditioned stem allomorphy still depends on the same umlaut rules. In addition to semantic and phonological triggers, the verb stem also still depends on the verb class to which it belongs (cf. 5.2.1).

There have been a number of changes in the strong verb system of Icelandic. Changes from a strong to a weak verb class, or, to another strong class, mean several relevant things. First, the strong verbs exhibit more allomorphy than the weak verbs, since strong verbs vary more in their conjugations than weak verbs, and in strong verbs tense and the verb’s meaning are expressed together in the stem. Second, the strong verbs display more paradigmatic structure than the weak verbs; i.e. to acknowledge a strong verb form as a past or present tense form, it is not enough to consider the presence of one

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122 As mentioned above, this may also be analysed as allomorphy when tense is considered to be a null suffix in strong verbs.
particular morpheme. Instead, some knowledge of other forms in the same paradigm is needed to interpret the form in question. That is, information about the tense of a strong verb is diffused over the whole verb paradigm. In contrast, in weak verbs the past tense is recognizable by a clearly outlined dental suffix.\textsuperscript{123}

Other aspects of the verbal system are also important in measuring allomorphy. For example, the division into various weak verb classes also counts as allomorphic. The shift from the least productive of the weak classes to the most productive regular weak class, counts as a decrease in allomorphy. These changes will not be examined because the weak verbs form an open class, which yields too many problems for language comparison. Furthermore, I would need additional data from spoken speech, since only on the basis of spoken speech would the decrease in allomorphy become clear. For example, a verb in Faroese such as \textit{spyrn}-\textit{i} / \textit{spyrn}-\textit{ti} (class 2) [\textit{spyrn}-\textit{i}/\textit{spin}-\textit{ti}] would change to \textit{spyrn}-\textit{i} / \textit{spyrn}-\textit{a}-\textit{ð} (class 3) [\textit{spyrn}-\textit{i}/\textit{spin}-\textit{a}-\textit{ð}-\textit{i}]. A discussion of the shift from a strong to a weak class is more profitable, since the basis of comparison is clear, namely the closed set of strong verbs in Old Norse, and what counts as a change in allomorphy is also clear, since the weak verbs are clearly marked by a dental suffix.

In Table 1 in the appendix I have listed all strong verbs that have changed their class in Icelandic. Typical examples of conjugation in the seven strong classes of Icelandic are as follows (3PL.PRES, 1SG.PAST and 1PL.PAST forms are given):

1: grípa, greip, gripum
2: drjúpa, draup, drupum
3: skella, skall, skullum
4: nema, nam, námum
5: gefa, gaf, gáfum
6: ala, ól, ólum
7: ganga, gekk, gengum

In Table 5.8 I have counted the number of verbs that changed their class.\textsuperscript{124} Old Norse verb classes are on the vertical axis, and the Icelandic classes on the horizontal axis. Each cell refers to a (non)-shift from one of the Old Norse to one of the Icelandic classes. Each first row gives the absolute numbers for a cell, and the next row gives the percentage in bold. Broken numbers are a result of the counting method; when a strong verb is optionally weak it counts as 0.5.

Table 5.8 shows that out of 205.5 verbs that changed in Icelandic, 191.5 (i.e. 93.2\%) are still strong, and 14 (that is 6.8\%) became weak. There is an even distribution of verbs that became weak in the various strong classes, although there are some differences, which are, however, too small and based on a too small number of verbs to be significant. The chance of becoming weak in Icelandic does not depend on a formal distinction between classes. The reason why some verbs became weak, while others of a similar shape remained strong, may lie in the meaning and frequency of these verbs. In addition, some of them were already optionally weak in Old Norse (cf. Noreen 1970). This concurs with the fact that 10.5 of the 14 verbs that became weak in Icelandic also became weak in Faroese.

\textsuperscript{123} On the other hand, weak verbs ending on a consonant and a dental do also not refer unequivocally to present or past tense.

\textsuperscript{124} I have based this account on the sources given in 5.3.1. According to De Leeuw van Weenen (pers.comm.) there are twelve more verbs which have been, or still are, at least partially, weak, and one weak verb which have become strong. If so, then the numbers in 5.3.2.2 and 5.6 are slightly different. This does, however, hardly undermine my more general argumentation.
Table 5.8 Strong verb shifts in Icelandic

W1: Total of shifts to weak class 1; W: Total of shifts to weak classes; Str: Total of verbs that remained strong; T: Total of verbs.

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>W1</th>
<th>W2</th>
<th>W3</th>
<th>W</th>
<th>Str</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>37</td>
<td>3</td>
<td>1</td>
<td>4</td>
<td>37</td>
<td>41</td>
<td>90.2</td>
<td>7.32</td>
<td>2.44</td>
<td>9.76</td>
<td>90.2</td>
<td>100</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>38</td>
<td>0</td>
<td>38</td>
<td>38</td>
<td>100</td>
<td>0</td>
<td>100</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>45.5</td>
<td>1.5</td>
<td>1</td>
<td>2.5</td>
<td>45.5</td>
<td>48</td>
<td>7.32</td>
<td>2.44</td>
<td>9.76</td>
<td>90.2</td>
<td>100</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>8.5</td>
<td>0.5</td>
<td>8.5</td>
<td>9</td>
<td>94.4</td>
<td>5.6</td>
<td>5.6</td>
<td>94.4</td>
<td>100</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>16.5</td>
<td>2</td>
<td>16.5</td>
<td>18.5</td>
<td>89.2</td>
<td>10.8</td>
<td>10.8</td>
<td>89.2</td>
<td>100</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
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<td>22</td>
<td>2.5</td>
<td>22</td>
<td>25.5</td>
<td>86.3</td>
<td>9.8</td>
<td>3.92</td>
<td>13.7</td>
<td>86.3</td>
<td>100</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>24</td>
<td>1</td>
<td>0.5</td>
<td>1.5</td>
<td>24</td>
<td>25.5</td>
<td>94.1</td>
<td>3.92</td>
<td>1.96</td>
<td>5.88</td>
<td>94.1</td>
<td>100</td>
<td></td>
</tr>
<tr>
<td>T</td>
<td>37</td>
<td>38</td>
<td>45.5</td>
<td>8.5</td>
<td>16.5</td>
<td>22</td>
<td>24</td>
<td>10</td>
<td>2.5</td>
<td>1.5</td>
<td>14</td>
<td>191.5</td>
<td>205.5</td>
</tr>
</tbody>
</table>

In Table 5.9 the number of strong verbs that entered the various weak classes is given. In the columns are the number of strong verbs in the seven conjugation classes that shifted to weak classes 1 to 3, represented in the three rows. The bold numbers are percentages.

Table 5.9 Distribution of strong verbs to weak classes in Icelandic

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>T</th>
</tr>
</thead>
<tbody>
<tr>
<td>W3</td>
<td>1</td>
<td></td>
<td>0.5</td>
<td></td>
<td>1</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>W2</td>
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<td>0.5</td>
<td></td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>W1</td>
<td>3</td>
<td>1</td>
<td>2</td>
<td>2.5</td>
<td>1</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>4</td>
<td>29</td>
<td>2.5</td>
<td>18</td>
<td>0.5</td>
<td>4</td>
<td>14</td>
<td>3.5</td>
</tr>
</tbody>
</table>

Weak class 1 is the most productive class in modern Icelandic, and it displays the least allomorphy since the past tense suffix is added to the stem plus stem vowel, thereby inducing no assimilation or allomorphy. Weak class 2 and weak class 3 each have three past tense allomorphs, conditioned by the last consonant of the immediately preceding stem. Most strong verbs have moved to the most productive class, class 1.

Besides these shifts from one verb class to another, regularisations took place in several paradigms of which I give a few examples. In Old Norse the strong class 1 had a subclass of verbs whose past tense deviated from the normal pattern: hniga/ hné ‘fall gently’, míg/a/ mé ‘piss’, síga/ sé ‘sink’, stíga/ sté ‘step’. Today these forms are only used in literary style. In ordinary speech, the more regular forms hneig, meig, etc. are used. The past tense of the deviating class 2 forms in Old Norse fljúga/ fló ‘fly’, lúiga/ ló ‘lie’,
siúga/ só ‘suck’, smiúga/ smó ‘creep’ have also become obsolete in ordinary conversation, and have been replaced by their regular counterparts. Friósa and kiósa also had irregular past tense forms fröra/ frera and kóra/ kera, which are now obsolete.125

5.3.2.3 Fusion and homonymy

In Old Norse person and number were fused, which is still the case in modern Icelandic. Tense, on the other hand, is still not fused in Icelandic. Mood, for the same reasons as in Old Norse, is not fused with either the stem, or with the person/number category. There have been a few changes in homonymy:

1) In all verb classes, the 3PL.PRES.IND was identical to the 1SG.PRES.SUBJ in Old Norse. This accidental homonymy no longer exists in Icelandic.

2) In the 1st weak verb class the 1SG.PRES.IND was identical to the 3PL.PRES.IND in Old Norse, and therefore to the 1SG.PRES.SUBJ. In Icelandic the 1SG.PRES.IND of the 1st weak verb class is only identical to the 3PL.PRES.IND.

3) In the 2nd weak verb class the 1SG.PRES.IND was identical to the 3PL.PRES.IND in Old Norse. In Icelandic this form has become identical to the 1,3SG.PRES.SUBJ and the 3PL.PRES.SUBJ.

4) In all strong verb classes the 1 and 3SG.PAST were identical in Old Norse. Because of the changes in the 1 and 3SG.PAST in weak verbs in Icelandic, this formerly accidental homonymy has become an instance of structural homonymy instead in Icelandic (cf. section 2.1.2.2).

Other accidental homonymies still prevail.

5.3.3 Conclusion

In comparison with Old Norse Icelandic is characterised by a little more Economy: some subjunctive forms are no longer distinguished from their indicative counterparts, and for the person/number category in the singular no more than two forms are available now. These small changes in Icelandic concur with the direction of change in other Germanic languages, where the categories which were affected first were also mood and person, while number and especially tense remained immune to reduction for a much longer time.

The allomorphy caused by the wealth of verb classes is also slightly reduced, although for the most part the Old Norse system has remained intact, and in strong verbs the 2SG.PRES.IND suffixes display even more allomorphy in Icelandic. A few strong verbs became weak, and some slight regularisations within paradigms took place. Verbs have been removed from strong classes, probably because of their lower frequency (and semantics), and not because of any formal aspects of these verbs as in Faroese. There is a tendency for them to be shifted to the most productive weak class in Icelandic. The shift in one direction, from strong verbs to the most productive weak verb class is common among Germanic languages. The speed of this shift, as well as the speed of reduction in inflectional categories is much lower in Icelandic.

125 Behind all the seemingly capricious forms in Old Norse, however, rules are hidden, which were once productive, like Verner’s Law (De Leeuw van Weenen, pers.comm.). Nevertheless, in addition to plain reduction of irregularities, the reduction of the number of rules counts also as regularisation.
5.4 Faroese

5.4.1 Data


Faroese verbal morphology has undergone more changes than Icelandic, especially in the Tórshavn dialect. There is a further decrease of person distinctions, and the subjunctive mood has disappeared except in a few frozen expressions. Furthermore, although there are still several conjugation classes, the differences between these classes have become smaller. In Table 5.10 I present the standard Faroese written forms, and, (between parentheses), the inflectional suffix of the Tórshavn spoken form.

Table 5.10 Faroese strong and weak verb inflection

<table>
<thead>
<tr>
<th>Strong Class</th>
<th>Weak Class 3</th>
<th>Weak Class 2</th>
<th>Weak Class 1 gather</th>
</tr>
</thead>
<tbody>
<tr>
<td>skjót-a 'shoot'</td>
<td>krevj-i 'require'</td>
<td>dom-i 'judge'</td>
<td>vakn-i 'awake'</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>1SG.PRES.IND</th>
<th>skjót-i</th>
<th>krevj-i</th>
<th>dom-i</th>
<th>vakn-i</th>
</tr>
</thead>
<tbody>
<tr>
<td>2SG</td>
<td>skjút-ur</td>
<td>krev-ur</td>
<td>dom-ir</td>
<td>vakn-ar</td>
</tr>
<tr>
<td>3SG</td>
<td>skjút-ur</td>
<td>krev-ur</td>
<td>dom-ir</td>
<td>vakn-ar</td>
</tr>
<tr>
<td>1PL</td>
<td>skjót-a</td>
<td>krevj-a</td>
<td>dom-a</td>
<td>vakn-a</td>
</tr>
<tr>
<td>2PL</td>
<td>skjót-a</td>
<td>krevj-a</td>
<td>dom-a</td>
<td>vakn-a</td>
</tr>
<tr>
<td>3PL</td>
<td>skjót-a</td>
<td>krevj-a</td>
<td>dom-a</td>
<td>vakn-a</td>
</tr>
<tr>
<td>SUBJ</td>
<td>skjót-i</td>
<td>krevj-i</td>
<td>dom-i</td>
<td>vakn-i</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>1SG.PAST.IND</th>
<th>skýt</th>
<th>krav-d-i</th>
<th>dom-d-i</th>
<th>vakn-a-D-i</th>
</tr>
</thead>
<tbody>
<tr>
<td>2SG</td>
<td>skýt-st</td>
<td>krav-d-i</td>
<td>dom-d-i</td>
<td>vakn-a-D-i</td>
</tr>
<tr>
<td>3SG</td>
<td>skýt</td>
<td>krav-d-i</td>
<td>dom-d-i</td>
<td>vakn-a-D-i</td>
</tr>
<tr>
<td>PL</td>
<td>skut-u</td>
<td>krav-d-u</td>
<td>dom-d-u</td>
<td>vakn-a-D-u</td>
</tr>
</tbody>
</table>

In Table 5.11 and Table 5.12 the standard form and the Tórshavn dialect are represented in abstracted form. The same remarks apply here as for Table 5.3. In addition, a capital ‘D’ refers to an alveolar plosive.

Table 5.11 Scheme of Standard Faroese verb inflection

<table>
<thead>
<tr>
<th>Standard Written Faroese</th>
<th>Strong</th>
<th>Weak 3</th>
<th>Weak 2</th>
<th>Weak 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>2,3SG.PRES.IND</td>
<td>1i -ur</td>
<td>1a -ir</td>
<td>1a -ar</td>
<td></td>
</tr>
<tr>
<td>PL.PRES.IND</td>
<td>1a -a</td>
<td>1g-a</td>
<td>1a-a</td>
<td></td>
</tr>
<tr>
<td>1SG.PRES.IND/ SUBJ</td>
<td>1a -i</td>
<td>1g-i</td>
<td>1a-i</td>
<td></td>
</tr>
<tr>
<td>1,3SG.PAST</td>
<td>2-</td>
<td>1a-D-i</td>
<td>1a-a-D-i</td>
<td></td>
</tr>
<tr>
<td>2SG.PAST</td>
<td>2 -u-st</td>
<td>1a-D-u</td>
<td>1a-a-D-u</td>
<td></td>
</tr>
<tr>
<td>PL.PAST</td>
<td>3 -u</td>
<td>1a-D-u</td>
<td>1a-a-D-u</td>
<td></td>
</tr>
</tbody>
</table>
Table 5.12 Scheme of Tórshavn Faroese verb inflection

<table>
<thead>
<tr>
<th>Tórshavn dialect</th>
<th>Strong</th>
<th>Weak 3</th>
<th>Weak 2</th>
<th>Weak 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>2,3SG.PRES.IND</td>
<td>1i -or</td>
<td>1i-ør</td>
<td>1a -ør</td>
<td></td>
</tr>
<tr>
<td>1SG.PRES.IND/PL.PRES.IND/ SUBJ</td>
<td>1a -o</td>
<td>1ɡ-ɔ</td>
<td>1a-ɔ</td>
<td></td>
</tr>
<tr>
<td>SG.PAST</td>
<td>2-</td>
<td>1a-D-ɔ</td>
<td>1a-ɔ-D-ɔ</td>
<td></td>
</tr>
<tr>
<td>PL.PAST</td>
<td>3 -ɔ</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The middle voice is easily deduced from the active voice by adding -st and deleting the last consonants (cf. Table 5.13). The Tórshavn suffixes are between parentheses.

Table 5.13 Faroese medio-passive voice paradigm

<table>
<thead>
<tr>
<th></th>
<th>PRES.IND</th>
<th>PAST.IND</th>
</tr>
</thead>
<tbody>
<tr>
<td>1SG</td>
<td>ótt-i-st ( -ɔ-st)</td>
<td>ótt-i-st ( -ɔ-ɔ-st)</td>
</tr>
<tr>
<td>2,3SG</td>
<td>ótt-a-st ( -ɔ-st)</td>
<td>ótt-a-st ( -ɔ-ɔ-st)</td>
</tr>
<tr>
<td>PL</td>
<td>ótt-a-st ( -ɔ-st)</td>
<td>ótt-a-st ( -ɔ-ɔ-st)</td>
</tr>
</tbody>
</table>

5.4.2 Analysis

5.4.2.1 Economy

In Faroese the same inflectional categories as in Old Norse are in use: voice, tense, mood, person and number. However, there is much underspecification and, moreover, mood is only used for a few idiomatic expressions.

In the middle voice the last consonant of the suffix of the finite verb is deleted, resulting in less distinctions. In the Tórshavn dialect the only distinction is between PAST and PRESENT middle voice. In standard written Faroese the 1SG.PRES form is distinguished from other forms, while in the past SG and PL are distinguished. As in Old Norse, tense is expressed in all Faroese dialects. In Tórshavn number is no longer expressed in the 1PRES, nor in the PAST of weak verbs.

In the standard variety of Faroese, person is only expressed in the SG.PAST of strong verbs, and in the SG.PRES with help of two forms for three person distinctions. In the present the 2nd and the 3rd person are conflated, and in the past the 1st and 3rd person coincide. In Tórshavn person is only distinguished in the 1SG.PRES.

There is no past subjunctive, and in the present there is only one form for all persons and numbers, which is identical to the 1SG.IND form. The decline in distinctions in the subjunctive co-occurs with a decrease in its use. Today, only the 3SG occurs in spoken Faroese (Barnes and Weyhe 1994: 205). This development seems to be an all-Germanic characteristic, since in most Germanic languages the subjunctive has disappeared - except in idiomatic expressions - (as in Dutch, English, and Bokmål Norwegian), or is reduced in its paradigmatic richness (as in standard German and Icelandic).

5.4.2.2 Allomorphy and conjugation classes

The decline in category combinations influenced the extent of allomorphy; because when a category is no longer expressed, it can no longer trigger allomorphy either. There are
Scandinavian

three kinds of allomorphy: suffix allomorphy, stem allomorphy triggered by semantic categories, and stem allomorphy triggered by verb class membership.

As in Old Norse, the expression of person and number is sensitive to tense. The form of suffixes also depends on the type of verb class to which a verb belongs. In Faroese, however, there is less allomorphy than in Old Norse in this respect. Today the 2,3SG.PRES suffix is dependent on the kind of weak or strong class to which a verb belongs and in the SG.PAST the suffix is dependent on the weak/strong distinction.

The form of the verb stem in Faroese is sensitive to several semantic categories. First of all the verb stem of the strong verbs depends on the tense and, in the past tense, on the number category. This stem alternation -ablaut- expresses both tense - which is not expressed in any other way in the plural past -, and number, which is also expressed by the P/N-suffixes.

In weak verbs the stems depend on the phonological environment, though to a lesser extent than in Old Norse. In the strong verbs, 1SG no longer triggers an i-umlaut stem. Furthermore u-umlaut no longer exists in verbal inflection.

Stems ending on two or more consonants simplify consonant clusters when the dental suffix comes immediately after the stem. The least continuant consonant is omitted, cf. hjálpi [j̩l̩p]/ hjálpti [j̩l̩pti] ‘helped’ sigli [s̩g̩l̩]/ sigldi [s̩g̩ldi] ‘sailed’ (Lockwood 1977: 23). This is an instance of an increase in allomorphy. This allomorphy is phonologically conditioned by the number of consonants. However, this rule operates only when there is a past tense morpheme, i.e. a morphological trigger.

As in Old Norse and Icelandic the form of a verb stem depends on the conjugation class to which it belongs. In the following discussion I use Noreen’s division again, but I consider all classes marked by reduplication as one class, class 7 (cf. Henriksen 1983). Lockwood (1977) numbers the classes differently, and he uses only three positively defined strong verb classes, and one class with remaining cases. Although Lockwood’s description may be synchronically more adequate, I use Henriksen’s grouping, which is better suited for historical comparison. Examples of the strong classes are (1SG.PRES, 1SG.PAST and 1PL.PAST forms are given):

1: griip, greip, gripu
2: strúka, streyk, struku
3: skella, skall, skullu
4: nema, nam, nómu

5: eta, át, ótu
6: ala, ól, ólu
7: ganga, gekk, gingu

In Lockwood’s grouping of the weak verbs, there are three groups which correspond to the class 1, class 2/3, and class 4 of Noreen’s grouping. In addition there is a fourth group which consists of irregular weak verbs. This class displays some anomalies in the present tense, e.g. their 2SG.PRES is formed by a suffix -t. In many instances, these irregularities are caused by the shift of these verbs from a strong class from which they retained several features. For the weak verbs, I use Lockwood’s grouping, because I do not consider what happened to Old Norse weak verbs, but only which weak verb class of Faroese resulted from strong Old Norse verbs. In Table 2 in the appendix all strong verbs which changed their class membership in Faroese are listed. On the basis of Table 9.2 Table 5.14 and Table 5.15 can be formulated.
Standard Faroese (St) and the Tórshavn dialect (Tó) can well be discussed together. Table 5.14 and Table 5.15 show that out of the 205.5 Old Norse verbs 130, i.e. 63% (St) and 122, that is 59.2% (Tó) are still strong, while 12, that is 5.8% (St and Tó) disappeared, and 63.8, i.e. 31% (St) and 71.7, i.e. 34.9% (Tó) became weak.

Three verbs (and one partially) have moved from one strong class to another. *Troþa*, *stela*, and *fela* have moved from the fourth to the very similar sixth class, while *hlaupa* resembles the second verb class after some sound changes (cf. Mottausch 1964). The first three changes can be considered as slight regularisations, or a decrease in allomorphy, because class 6 does not display redundant vowel alternation between singular and plural past, and class 6 is a larger class than class 4.

**Table 5.14 Strong verb shifts in Standard Faroese**

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<td>7.99</td>
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<td>3.55</td>
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</tbody>
</table>

126 Mottausch (1964) discusses the exact triggers and stages of these changes, and also changes in flexion within strong verb classes, however, he hardly discusses changes from strong to weak verb classes.
When comparing the strong classes with each other, the picture presented in Table 5.16 emerges:

**Table 5.16 Retention of strong verbs in Faroese**

<table>
<thead>
<tr>
<th>Class number</th>
<th>% remained in the same class (St)</th>
<th>% remained in the same class (Tó)</th>
<th>Total number of verbs</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>73.2</td>
<td>73.2</td>
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</tr>
<tr>
<td>5</td>
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<td>73</td>
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<td>3</td>
<td>54.2</td>
<td>54.2</td>
<td>100</td>
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<td>6</td>
<td>52.2</td>
<td>52.2</td>
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<tr>
<td>7</td>
<td>31.4</td>
<td>31.4</td>
<td>25.5</td>
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</tbody>
</table>
easily (for a similar limited role of class size in German, cf. Wurzel 1989). The question remains, however, how to explain the relatively high variation between classes with respect to the number of verbs that remained in the same class in Table 5.16.

Classes 1 and 5, which have the highest rate of retention, display no special characteristics in their stem alternations or their semantic nature. So I consider their relative height of retention as a coincidence.

On the lower extreme, class 7 and class 6 seem to have lost verbs more easily than other classes. This can partly be explained by considering the phonological form of a group of verbs; as in Table 5.17.

### Table 5.17 Strong verbs that end in a vowel in Faroese

<table>
<thead>
<tr>
<th>Old Norse</th>
<th>Class</th>
<th>Faroese</th>
<th>Class</th>
<th>Tórshavn</th>
</tr>
</thead>
<tbody>
<tr>
<td>búa</td>
<td>abide, make ready</td>
<td>7</td>
<td>búgva</td>
<td>live, dwell</td>
</tr>
<tr>
<td>gróa</td>
<td>grow</td>
<td>7</td>
<td>grógva</td>
<td>grow</td>
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<tr>
<td>róa</td>
<td>row</td>
<td>7</td>
<td>rógva</td>
<td>row</td>
</tr>
<tr>
<td>snúa</td>
<td>turn</td>
<td>7</td>
<td>snúgva</td>
<td>turn, convert</td>
</tr>
<tr>
<td>spýja</td>
<td>spew</td>
<td>7</td>
<td>spýggja</td>
<td>spew</td>
</tr>
<tr>
<td>deyja</td>
<td>die</td>
<td>6</td>
<td>doyggja</td>
<td>die</td>
</tr>
<tr>
<td>geyja</td>
<td>bark</td>
<td>6</td>
<td>goyggja</td>
<td>bark</td>
</tr>
<tr>
<td>hlaeja</td>
<td>laugh</td>
<td>6</td>
<td>laa</td>
<td>laugh</td>
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<td>þvá</td>
<td>wash</td>
<td>6</td>
<td>tváa</td>
<td>wash</td>
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<tr>
<td>klá</td>
<td>claw, scratch</td>
<td>6</td>
<td>kláa</td>
<td>scratch</td>
</tr>
<tr>
<td>flá</td>
<td>flay</td>
<td>6</td>
<td>fláa</td>
<td>flay</td>
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<tr>
<td>sá</td>
<td>sow</td>
<td>7</td>
<td>sáa</td>
<td>sow</td>
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<tr>
<td>gnúa</td>
<td>rub</td>
<td>7</td>
<td>-</td>
<td>-</td>
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<tr>
<td>slá</td>
<td>smite</td>
<td>6</td>
<td>sláa</td>
<td>smite</td>
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<tr>
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<td>see</td>
<td>5</td>
<td>siggja</td>
<td>see</td>
</tr>
<tr>
<td>fá</td>
<td>fetch</td>
<td>7</td>
<td>fáa</td>
<td>take, catch</td>
</tr>
</tbody>
</table>

All these verbs had a stem in Old Norse which ended in a vowel. This had two consequences in later history. If the vowel was ‘non-low’, then g or g: was inserted after the stem, followed by a glide harmonic with the stem vowel. This sound law is quite uncommon in Europe, and according to Andersen (1988) and Trudgill (1992), this change is characteristic of languages found in closed isolated speech communities. Secondly, except for sía, all verbs ending in a **non-low** vowel, and several verbs ending in a **low** vowel moved from the strong to the weak class. The weak class, which all the non-low vowel verbs entered, is the ‘irregular’ class 4. Therefore I conclude that it is the phonological form, independent of morphological class, which facilitated the entry of these verbs into a weak class. Insertion of g or g: between two vowels seems a more plausible change after non-low vowels. Still, the association between weak class membership and the height of the stem vowel remains unexplained.
Often class 4 and 5 are not distinguished since they only differ in participle formation, and because class 4 is too small (cf. Cleasby et al: 1874: 25). When we merge these two classes, and when we omit all verbs of which the stem ends on a vowel, the picture emerges as given in Table 5.18.

Table 5.18 Retention of strong verbs in Faroese (revised version)

<table>
<thead>
<tr>
<th>Class number</th>
<th>% remained in the same class (Standard)</th>
<th>% remained in the same class (Tórshavn)</th>
<th>Total number of verbs</th>
</tr>
</thead>
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<tr>
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<td>73.2</td>
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<tr>
<td>Mean/Total</td>
<td>64.1</td>
<td>60.8</td>
<td>189.5</td>
</tr>
</tbody>
</table>

The distribution in Table 5.18 is less deviant than that in Table 5.16. The low retention ratio of class 7 is explained by the status aparte of this class. This class is a sort of rest class of several kinds of vowel alternations.\(^{127}\) According to Mottausch (1964: 53), this heterogeneity is an important factor to explain the faster loss of verbs from this class. The low position of class 6 in the table may be an indication that class 6 is ‘closest’ to the weak classes, because it has no vowel alternation in the past. Since this class is already partially similar to weak classes, transfers from this classes may be easier.\(^{128}\) Finally the reason why some verbs became weak, while others which were formally analogous remained strong, may lie in the semantics and in the frequency in daily use of the respective verbs (cf. Mottausch 1964: 49, 50, n.1). Differences in productivity may also play a role.

There were differences between the weak classes, with respect to the number of verbs they received. In Table 5.19 I repeat the numbers of strong verbs which entered a weak class or disappeared, and I counted the percentages each class received. On each row for each strong verb class in Old Norse the number of verbs that shifted to various weak classes or that disappeared is given. The next row shows these numbers in percentages. ‘No’ means ‘has disappeared’.

Weak class 4 is the class with anomalous weak verbs. Most of the verbs which were strong in Old Norse and whose stem ended on a vowel belong to this class. Weak class 1 is the most productive class in modern Faroese. This class shows the least allomorphy among the weak classes; since the past tense suffix is added to the stem plus stem vowel, there is no phonologically conditioned allomorphy in this suffix. Weak class 2 has three past tense allomorphs, depending on the last consonant of the immediately preceding stem. Weak class 3 in addition to allomorphy in the past tense suffix, also has vowel alternation in the past tense. This class has arisen through i-umlaut, which operated in the

\(^{127}\) In Proto-Indo-European, this class was as regular as the other classes, but used another device, namely reduplication. Through several sound changes this class has become most heterogeneous among the strong verb classes in Germanic.

\(^{128}\) Scipp (1971: 362) explains transfers between classes with help of this idea in Norwegian (cf. below).
present tense and not in the past. Therefore only stems with front vowels ‘y’, ‘e’, and ‘ø’ belong to this class.\(^\text{129}\)

Consider now the uneven distribution of strong verbs over the weak classes. First of all, weak class 4 is a special case, since the verbs of that class, all belong to the special class of verbs that end in a vowel (see above). Class 3 has received few verbs, but this could be the result of constraints on the stem nucleus. In Table 5.20 I show what happens when we only take verbs with a front vowel in their stem into account.

<table>
<thead>
<tr>
<th>Standard W1</th>
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<td>%</td>
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<td>15.6</td>
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Even when considering only verbs which could inflect like a weak class 3 verb, still only about 15% do. However, the chance that a verb does not enter class 1 rises, when the vowel in the stem is not a back or a low vowel.

\(^{129}\)Stems with the letter i generally do not belong to this class. When the umlaut rule applied in Common Scandinavian ‘i’ could not be a result of this rule. Later y and i merged in pronunciation, though not in orthography. Today they therefore only differ with respect to morphological behaviour.
A possible explanation for this uneven distribution is the measure of regularity of the different weak classes. The less the past tense expression directly involves the stem, the more favourable the class appears to be for new verbs. The class 1 past tense suffix is always the same, and is added after the infinitive. Class 2, which is a less probable target, displays allomorphy between at least three suffixes added after the stem instead of after the infinitive. Class 3, which hardly received any strong verbs has, in addition to allomorphy, vowel alternation in its stem in the past tense.

This explanation is less obvious than it may seem. Another scenario for changes in strong verbs would be one where strong verbs would change slowly towards the prototypical model of a weak class. It should be conceivable that the several components: dental past tense suffix; unequivocal past tense stem; lack of vowel alternation between present and past; no person distinctions in the past, would slowly become part of the paradigm of a strong verb which is inclined to become weak. This is not the case, however, because more verbs could then be expected in class 3, since this is the class closest to the strong verb paradigms. Instead of this scenario, strong verbs have changed their class membership non-continuously, that is, without going through an intermediate state, see also 5.5.

Table 5.21 presents the differences in verb placement between the strong and the weak classes.

**Table 5.21 Distribution of class shifts to various weak classes in Faroese**
(cf. the explanation at Table 5.19).

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The relatively high percentage of verbs from strong class 3 which entered weak classes 2 and 3 can be explained by their characteristic front vowel in the stem. In addition the distribution of weak class 2 verbs also depends on the kind of vowel in the stem. For
instance, strong class 1 verbs all have a front vowel, ‘i’, which facilitates entry into weak class 2, while class 2 and 6 have hardly any front vowels in their stem.

The question remains why certain classes correlate with certain vowels. The answer lies in the history of the conjugation classes. Strong classes, are defined by the kind of vowel alternation they display. The weak classes 2 and 3 have undergone i-umlaut in several parts in their paradigms in the period of Common Scandinavian. This has led to the modern situation where the chance that a verb with a front vowel belongs to the 2nd or 3rd class is still relatively high. New verbs, i.e. either verbs which used to be strong, or loanwords - e.g. begynna/ begyndi -, are sensitive to this pattern.

In conclusion, apart from semantic and frequency factors, features of the source class, i.e. class 7 heterogeneity and class 6 similarity to the weak conjugation, determine the chances of weakening. In addition, the phonological form of a strong verb is a factor: stems ending in a vowel, especially in a non-low vowel, have a much higher chance of becoming weak. These verbs enter weak class 4. The placement of other verbs also depends partly on their phonology. Stems with a high front vowel have a higher chance moving to weak class 2 and 3, while verbs with the vowel ‘i’, most often come into class 2. In general, the most regular weak class attracts most strong verbs.

5.4.2.3 Fusion and homonymy

In Old Norse person and number were fused. Person in Faroese is seldom expressed nowadays. However, when it is expressed it is still fused with the category of number.

In addition to structural homonymy in the cases where underspecification applies, today the 1SG.PRES.IND exhibits accidental homonymy with all SUBJ forms. In the Tórshavn dialect this homonymic form, i.e. the ending in schwa, also captures the PL.PRES.IND.

5.4.3 Conclusion

Economy is more important in Faroese than in Old Norse, especially in the Tórshavn dialect. Although all categories of Old Norse still exist, in many combinations of categories distinctions are no longer made. Tense and mood are still expressed; person and number, however, are less often expressed. The past subjunctive no longer exists.

Since less categories are expressed, the possibility of displaying non-transparency also decreases. Forms which referred to fused categories previously now only refer to one category, e.g. in the subjunctive mood. However, some allomorphy has disappeared, independent of the effects of the Economy Principle. The 1SG.PRES no longer shows verb class sensitive allomorphy, and stem allomorphy through umlaut. Furthermore, u-umlaut no longer operates in verbs ending with suffixes with a back vowel. In the 2nd and 3rd weak classes some verb stems display more allomorphy since there is a phonological constraint which does not allow three successive consonants.

Finally, allomorphy has decreased since a large group of formerly strong verbs are now weak. Out of the 209 verbs, which were originally strong in Old Norse, 36.9% in the standard Faroese and 41.2% in Tórshavn have changed their status. Most of them became weak, and some of them disappeared. The shifts to specific weak classes are mainly phonologically determined.
5.5 Norwegian

5.5.1 Data

In Norway there is considerable dialect variation, ranging from isolated conservative dialects to dialects heavily influenced by language contact (see above under section 5.1.4). Here I discuss the standardised form of Bokmål, because it is the most characteristic and well-described example of a west-Scandinavian variety that has undergone extensive change through language contact. My data are based on: Askedal (1994), Bråtveit (1990), Enger (1998), Førsund et al. (1971), Haugen (1965, 1976a), Heggstad et al. (1975), Hovdenak et al. (1986), Landro et al. (1993), Noreen (1970), Seebold (1970), Seip (1971), and Venås (1967), and some information from a native speaker. Since most categories have disappeared in Norwegian, the paradigm has diminished considerably in size in comparison to Old Norse.

Table 5.22 Norwegian strong and weak verb inflection

<table>
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<th>Class 3</th>
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<td>tell-er</td>
<td>dømm-er</td>
<td>vakn-er</td>
<td>kall-es</td>
</tr>
<tr>
<td>count</td>
<td>tell-te</td>
<td>dom-te</td>
<td>n-u-r</td>
<td>vakn-et-a</td>
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<tr>
<td>judge</td>
<td>tell-te</td>
<td>dom-te</td>
<td>n-u-de</td>
<td></td>
<td>kall-tes</td>
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<td></td>
<td></td>
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<tr>
<td>awake</td>
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</table>

In Norwegian the medial verbs have become a separate inflection class since the medial verb formation is no longer productive, and their meanings are also no longer predictable.

5.5.2 Analysis

5.5.2.1 Economy

Except for tense, all other categories of Old Norse have disappeared from verbal morphology in Bokmål. The category of person is the first to become unstable and eventually disappear. Seip (1971: 224) cites several examples from the second half of the 13th century, in which person distinctions are confused or conflated. This began in the past tense and subjunctive mood and soon reached the present indicative. Seip (1971: 357) writes: “The conflation of person endings in the singular and plural must largely have been finished before 1300; in writings the inflections for person still remain relatively intact.”130 The conflation of number distinctions started a little later and continued in the 14th century (Seip 1971: 225, 357). In this period expressions of voice were fossilising, and later medial voice was no longer an inflectional category. Seip (1971: 225) remarks that suffixes of the subjunctive and the indicative were already confused at times in the 13th century. Later, in the 14th century, due to reductions in the vowel quality in the suffixes, subjunctive and indicative forms were conflated even more. However, it is not because of its near-identical form that the category of mood has disappeared in modern Norwegian, but because it was hardly used anymore. Theoretically there is still a distinct subjunctive form, which is restricted to idiomatic expressions. According to Seip (1971: 394) most of the levelling and category losses

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130 “Der Zusamenfall von Personenendungen im Sing und Plur muss bereits vor 1300 ziemlich abgeschlossen gewesen sein; in der Schrift bleibt die Personenflexion im Plur noch relativ gut erhalten.”
which turned Old Norse into a more analytical language, had already occurred before the 16th century.

The only category which is still fully expressed is tense. It is not the phonologically salient expression of tense which has saved this category from disappearance, but its inherent value. In the 13th and 14th century, -þ- was part of the past tense suffix. Because of several sound laws (cf. Seip 1971: 175, 188) this -þ- was unstable and could easily disappear. This would have led to the disappearance of the past tense marker. However, a new dental marker was introduced, in the forms that were threatened, which was not a result of a sound law. Seip (1971: 226) writes: “This phenomenon that the dental resists the disruption caused by the sound laws, is rather common in the history of the weak verb in Nordic. The dental is retained “to elucidate the tense” (cf. also Heath 1998). Therefore, it is the tense category itself that resists erosion in Norwegian.

5.5.2.2 Allomorphy and conjugation classes

Originally there was a striking allomorphy of verb stems and suffixes, and the conjugation classes of verbs even changed in many instances. Stems in Old Norse displayed extensive allomorphy, dependent on both semantic categories - e.g. the SG/PL-distinction in the past tense of strong verbs- and on the phonological environment, as in the morphologised i- and u-umlauts (cf. above, section 5.2.2.2). Some allomorphy of this latter kind disappeared in the 13th and 14th century, when the effects of these uumlauts were levelled out (cf. Seip 1971: 132ff., 361ff.). During the same period most morphological inflectional categories were lost, and this further decreased the extent of stem allomorphy. Nevertheless, stem allomorphy still exists; strong verb stems are still sensitive to the category of tense, and many verbs of the first weak class still display the effects of an earlier i-umlaut in its present/past tense distinction (cf. Table 5.22).

The only category in which distinctions are made in Bokmål today is tense. In the present tense, the earlier -ir, -ar, and -ur-suffixes have conflated and now only one suffix remains: -r after vowels, and -er after consonants. In the past tense however, some morphologically conditioned allomorphy still exists. In the 13th and 14th century the dental past tense suffix underwent some modifications. The unequivocal þ of earlier days in Scandinavian was already assimilating with the preceding consonant in Old Norse. In Norwegian this dental suffix underwent further modifications with varying outcomes (cf. Seip 1971: 200, 226, 358). One result is a phonologically conditioned allomorph: -dde, after vocalic stems (weak class 3); two other allomorphs are complementary, and their distribution depends not only on the dialect in question, but also on the register and the semantic domain to which the verb belongs (cf. Haugen 1982: 142; Seip 1971: 434), -et being more formal, and -a being associated with ‘folk life’ (weak class 4). Then there is a third form, the morphologically conditioned -de/te allomorph which is less common than the -et/a-suffix (weak class 1 and 2). It also attaches to consonantal stems. Finally a new verb class has risen in Bokmål on the lexicalised remains of the medial voice. Medial voice is no longer productive, but because there are still some verbs with medial suffixes, these forms may be considered to represent a new verb class.

131 “Dieser Vorgang dass der Dental der Zerstörung durch die Lautgesetze widersteht, kommt im Nordischen häufig in der Geschichte des schwachen Verbs vor. Der Dental wird ‘zur Verdeutlichung des Tempus’ aufrechterhalten.”
Now I turn to the fate of the strong verbs in modern Norwegian. For Norwegian the classification of strong verbs is more problematic than for Faroese or Icelandic, because in Norwegian the distinction between strong and weak verbs and the division of the strong verbs into several classes is no longer a straightforward matter. I adopt the original classification of Old Norse, following Askedal (1994: 240) and Venås (1967), since my purpose is to compare what happened to the original set of strong verbs of Old Norse. My purpose is not to give an adequate synchronic description of the verb system, as Enger (1998) tries to give by using a classification mainly based on synchronic data.

Therefore I define a strong verb as a verb whose root has a monosyllabic past tense form (cf. Enger 1998:111), since weak verbs use a syllabic suffix to express the past tense. Most verbs described as strong in Norwegian by Venås (1967) and Enger (1998) conform to this definition. Only a few verbs which may be described as strong (cf. Bråtveit 1990) are excluded by this criterion, e.g. bringe/brakte ‘bring’, and smøre/smurte ‘smear’. However, if one included verbs in the strong class which are disyllabic while clearly stating that their past tense stem differs from their present tense stem, then a large group of verbs like telle/talte ‘count’ could count as strong verbs. In addition, a verb like komme/kom ‘come’ would no longer count as a strong verb since it displays no vowel or consonant alternation. Another alternative would be to define only those verbs as strong which were already strong in Old Norse. This would however exclude loans from the definition.

I use the original seven Old Norse classes. These seven classes are problematic in modern Norwegian, since at least three classes, class 4/5, 6, and 7 do not form a clearly defined type. However, when considering several dialects of Norwegian, these classes still have quite a few members. By adopting the conservative classification I may not do justice to modern Norwegian. However, although Enger (1998) begins with listing several criteria and combinations of criteria to set up 52 subclasses, he later falls back on a division into three strong classes, which concurs with Old Norse’s first three classes, and a rest class. Therefore, the only actual difference in my analysis is that I divide this rest class according to its origins, which is more profitable for an historical discussion on Scandinavian.

Typical examples of conjugation in the seven strong classes of Norwegian are as follows (present and past tense forms are given):

1: biter, bet/beit
2: bryter, brøt/braut
3: drikker, drakk
4: bærer, bar
5: ligger, lå
6: tar, tok
7: gråter, gråt

The weak classes of Bokmål are usually divided into four groups, depending on the kind of past tense suffix they take, and on whether there is a vowel change in the stem. In weak verb class 1 the past tense has a dental suffix de/te and there is vowel change in the stem. In class 2 the past tense has only a dental suffix de/te. In class 3 the past tense has a dental suffix dde, and the stem ends on a vowel, while in class 4 the past tense has a suffix -a or -et. This division in Norwegian only partially corresponds to weak class divisions in Old Norse, Icelandic or Faroese. In Table 3 in the appendix I present all

---

132 I use ‘root’ instead of ‘stem’ in this definition to include verbs like forbry ‘forbid’ and forsvinne, ‘disappear’.
verbs which were strong in Old Norse and which changed in Norwegian, and the strong verbs that are new in Bokmål. This list is not conclusive, since I have based it on several sources, representing slightly different varieties of Bokmål in time and space. Furthermore, since the boundaries between Nynorsk and Bokmål are difficult to draw, especially in the lexicon, I have also used information from the better documented dictionary of Nynorsk.\(^{133}\) On the basis of Table 9.3 Table 5.23 can be drawn up.

Out of 205.5 original Old Norse strong verbs and 38 other strong verbs 149.5 (61.4\%) are strong, while 26 (10.7\%) disappeared, and 68 (27.9\%) became weak. When only taking the 205.5 original strong verbs into consideration, 26 (12.7\%) disappeared and 68 (33.1\%) became weak, while 112 (54.3\%) remained strong.

**Table 5.23 Strong verb shifts in Norwegian**

<table>
<thead>
<tr>
<th></th>
<th>W</th>
<th>W2</th>
<th>W3</th>
<th>W4</th>
<th>Dis</th>
<th>Wea</th>
<th>Str</th>
<th>T</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>26.1 1</td>
<td>2.7 2.2 3</td>
<td>6 7.9</td>
<td>27.1</td>
<td>41</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>63.7 2.44</td>
<td>6.59 5.4 7.32</td>
<td>14.6 6.59</td>
<td>66.1</td>
<td>100</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>24.9</td>
<td>1.8 0.5 4.8</td>
<td>6 7.1</td>
<td>24.9</td>
<td>38</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>65.5</td>
<td>4.74 1.3 12.6</td>
<td>15.8 6.05</td>
<td>65.5</td>
<td>100</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>28</td>
<td>12 3</td>
<td>5 15</td>
<td>28</td>
<td>48</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>58.3</td>
<td>25 6.25</td>
<td>10.4 25</td>
<td>58.3</td>
<td>100</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>3 1 2</td>
<td>2</td>
<td>1 2</td>
<td>6</td>
<td>9</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>33.3 11 22</td>
<td>22.2</td>
<td>11 22</td>
<td>44.4</td>
<td>100</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>1.5 8.5</td>
<td>3.5 1</td>
<td>4 4.5</td>
<td>10</td>
<td>18.5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8.11 45.9</td>
<td>54.1</td>
<td>54.1</td>
<td>54.1</td>
<td>54.1</td>
<td>100</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>31</td>
<td>27.5 20</td>
<td>13.7</td>
<td>7.84 27.5</td>
<td>31.4</td>
<td>100</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>1</td>
<td>1 5.5</td>
<td>5.5 7.5</td>
<td>3</td>
<td>2</td>
<td>16 7.5</td>
<td>25.5</td>
<td></td>
</tr>
<tr>
<td>3.92</td>
<td>3.92 21.6</td>
<td>21.6 29</td>
<td>11.8</td>
<td>7.84 62.7</td>
<td>25.5</td>
<td>100</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sb</td>
<td>26.1 26.9 29.5 3</td>
<td>8.5</td>
<td>10</td>
<td>7.5</td>
<td>34.5 15</td>
<td>18.3</td>
<td>26</td>
<td>68</td>
</tr>
<tr>
<td>12.7 13.1 14.4 14.6 4.14 4.9 3.65</td>
<td>16.8 7.4</td>
<td>8.91</td>
<td>12.7 33.1</td>
<td>54.3</td>
<td>100</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>L</td>
<td>4</td>
<td>1.5</td>
<td>9.5</td>
<td>3</td>
<td>1</td>
<td>19</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.5</td>
<td>1.5</td>
<td>9.5</td>
<td>3</td>
<td>1</td>
<td>19</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>U</td>
<td>2.5 3</td>
<td>6</td>
<td>1</td>
<td>12.5</td>
<td>4</td>
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<tr>
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<td>1</td>
<td>1</td>
<td></td>
<td>4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>1</td>
<td>1.5</td>
<td>2.5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>T</td>
<td>35.6 32.4 46.5 3</td>
<td>10.5 13</td>
<td>8.5</td>
<td>34.5 15</td>
<td>18.3</td>
<td>26</td>
<td>68</td>
<td>149.5</td>
</tr>
<tr>
<td>14.6 13.3 19.1 1.23 4.31 5.3</td>
<td>3.49</td>
<td>14.2 6.2</td>
<td>7.52</td>
<td>10.7 27.9</td>
<td>61.4</td>
<td>100</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

\(^{133}\) Here I am greatly indebted to the help of Ron Propst, whose intuitions about Norwegian were highly valuable.
In the Tables below I have joined the classes 4 and 5 together, because class 4 in Old Norse had only nine members, which is a weak base for a statistical analysis, and also because in Old Norse these classes only differed in participle formation. Consider first the pattern in which the various strong classes lost their members in Table 5.24. On the first row are the absolute numbers of verbs that disappeared, on the second row the percentages are given.

Table 5.24 Loss of verbs from the strong verb classes in Norwegian

<table>
<thead>
<tr>
<th>Class</th>
<th>Disappeared</th>
<th>Subsisting</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>6</td>
<td>35</td>
<td>41</td>
</tr>
<tr>
<td>14.6</td>
<td></td>
<td>85.4</td>
<td>100</td>
</tr>
<tr>
<td>2</td>
<td>6</td>
<td>32</td>
<td>38</td>
</tr>
<tr>
<td>15.8</td>
<td></td>
<td>84.2</td>
<td>100</td>
</tr>
<tr>
<td>3</td>
<td>5</td>
<td>43</td>
<td>48</td>
</tr>
<tr>
<td>10.4</td>
<td></td>
<td>89.6</td>
<td>100</td>
</tr>
<tr>
<td>4/5</td>
<td>5</td>
<td>22.5</td>
<td>27.5</td>
</tr>
<tr>
<td>11</td>
<td></td>
<td>89</td>
<td>100</td>
</tr>
<tr>
<td>6</td>
<td>2</td>
<td>23.5</td>
<td>25.5</td>
</tr>
<tr>
<td>7.84</td>
<td></td>
<td>92.16</td>
<td>100</td>
</tr>
<tr>
<td>7</td>
<td>2</td>
<td>23.5</td>
<td>25.5</td>
</tr>
<tr>
<td>7.84</td>
<td></td>
<td>92.16</td>
<td>100</td>
</tr>
<tr>
<td>Total</td>
<td>26</td>
<td>179.5</td>
<td>205.5</td>
</tr>
</tbody>
</table>

The pattern of loss does not correspond to any of the other patterns I discuss below; there is no reason why class 1 and 2 have lost more verbs than class 6 and 7, since the former classes are not less productive than the latter classes. The variability between the classes may be a coincidence. In the following tables I will therefore abstract away from the number of verbs that disappeared. In Table 5.25 I compare the strong verb classes with respect to the number and percentage of verbs retained.
In Bokmål, as in Faroese, the phonology of the verb has influenced its chances of being transferred to a weak class. Table 5.26 shows the verbs with a stem ending in a vowel.

**Table 5.25 Retention of strong verbs in Norwegian**

<table>
<thead>
<tr>
<th>Class</th>
<th>% that went to another strong class</th>
<th>% that remained in the same class</th>
<th>% that went to a weak class</th>
<th>Total number of verbs that still exist</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>26.1</td>
<td>7.9</td>
<td>22.6</td>
<td>35</td>
</tr>
<tr>
<td>2</td>
<td>74.6</td>
<td>7.1</td>
<td>22.2</td>
<td>100</td>
</tr>
<tr>
<td>3</td>
<td>77.8</td>
<td>15</td>
<td>22.2</td>
<td>100</td>
</tr>
<tr>
<td>4/5</td>
<td>65.1</td>
<td>34.1</td>
<td>100</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>51.1</td>
<td>4.5</td>
<td>28.9</td>
<td>100</td>
</tr>
<tr>
<td>6</td>
<td>58.6</td>
<td>31</td>
<td>100</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>34</td>
<td>66</td>
<td>100</td>
<td></td>
</tr>
<tr>
<td>T</td>
<td>104</td>
<td>68</td>
<td>180</td>
<td></td>
</tr>
</tbody>
</table>

**Table 5.26 Strong verbs that end in a vowel in Norwegian**

<table>
<thead>
<tr>
<th>Old Norse</th>
<th>Class</th>
<th>Norwegian</th>
<th>Class</th>
</tr>
</thead>
<tbody>
<tr>
<td>þvá</td>
<td>wash</td>
<td>6</td>
<td>toe</td>
</tr>
<tr>
<td>gróa</td>
<td>grow</td>
<td>7</td>
<td>gro</td>
</tr>
<tr>
<td>spýja</td>
<td>spew</td>
<td>7</td>
<td>spy</td>
</tr>
<tr>
<td>gnúa</td>
<td>rub</td>
<td>7</td>
<td>gnu</td>
</tr>
<tr>
<td>klá</td>
<td>claw, scratch</td>
<td>6</td>
<td>klo</td>
</tr>
<tr>
<td>róa</td>
<td>row</td>
<td>7</td>
<td>ro</td>
</tr>
<tr>
<td>sá</td>
<td>sow</td>
<td>7</td>
<td>så</td>
</tr>
<tr>
<td>snúa</td>
<td>turn</td>
<td>7</td>
<td>snu</td>
</tr>
<tr>
<td>búa</td>
<td>abide, make ready</td>
<td>7</td>
<td>bo/bu</td>
</tr>
<tr>
<td>deyja</td>
<td>die</td>
<td>6</td>
<td>dø</td>
</tr>
<tr>
<td>flá</td>
<td>flay</td>
<td>6</td>
<td>flá</td>
</tr>
<tr>
<td>geyja</td>
<td>bark</td>
<td>6</td>
<td>gjø</td>
</tr>
<tr>
<td>fá</td>
<td>fetch</td>
<td>7</td>
<td>fá</td>
</tr>
<tr>
<td>hlæja</td>
<td>laugh</td>
<td>6</td>
<td>le</td>
</tr>
<tr>
<td>slá</td>
<td>smite</td>
<td>6</td>
<td>slá</td>
</tr>
<tr>
<td>sía</td>
<td>see</td>
<td>5</td>
<td>se</td>
</tr>
</tbody>
</table>
Again, as in Faroese, many of these verbs have disappeared from a strong class, especially when they had a non-low vowel ending. When we leave these verbs out of consideration Table 5.27 results.

Table 5.27 Retention of strong verbs in Norwegian (revised version)

<table>
<thead>
<tr>
<th>Class</th>
<th>% that went to another strong class</th>
<th>% that remained in the same class</th>
<th>% that went to a weak class</th>
<th>Total number of verbs that still exist</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1</td>
<td>26.1</td>
<td>7.9</td>
<td>35</td>
</tr>
<tr>
<td>2</td>
<td>2.86</td>
<td>74.6</td>
<td>22.6</td>
<td>100</td>
</tr>
<tr>
<td>3</td>
<td>24.9</td>
<td>77.8</td>
<td>22.2</td>
<td>100</td>
</tr>
<tr>
<td>4/5</td>
<td>28</td>
<td>65.1</td>
<td>34.9</td>
<td>100</td>
</tr>
<tr>
<td>6</td>
<td>4.5</td>
<td>20.9</td>
<td>30.2</td>
<td>100</td>
</tr>
<tr>
<td>7</td>
<td>1.5</td>
<td>9.68</td>
<td>61.3</td>
<td>100</td>
</tr>
<tr>
<td>Total</td>
<td>7</td>
<td>4.28</td>
<td>61.2</td>
<td>100</td>
</tr>
</tbody>
</table>

The variation between the classes is still higher than in Faroese. Enger (1998: 119ff.) discusses whether the notion of ‘productivity’ can explain the variation and the changes. According to Wurzel (1989: 154), productive classes are those which “attract neologisms, gain members from other classes and do not lose any members to other classes.” Productivity is a gradient notion. According to Enger (1998: 120) weak classes are more productive than strong classes in Norwegian, but strong classes are also fairly productive, since they have also attracted neologisms and a few weak verbs. Among the strong verbs themselves distinctions can be made; class 1, 2 and 3 are more productive than the other strong classes. Enger (1998: 126) comments: “We have now looked at some factors relevant for productivity: the extent to which the class is extra-morphologically motivated -phonological delimitation-, the number of members, and the frequency of the members.” Now, class 1, 2, and 3 are indeed partly phonologically conditioned classes, class 1, for instance, is motivated by its -i- vowel in the present tense (cf. Enger 1998: 120), class 2 by an -y- and class 3 by a high vowel. The second factor Enger suggests, the number of members, also applies here for class 1, 2, and 3.

In addition to these factors Seip (1971: 229) suggests two other factors, specific to Germanic languages, which determine the chances of verb shift: “Since the strong verbs normally had a three-stage vowel change, verbs with only a two-stage vowel change could easily be changed.”134 This remark refers to verbs of the 6th class, which do not distinguish PAST.SG and PAST.PL stems. Indeed, class 6 has lost 63.6% of its verbs, which is more than any other class. Secondly, Seip (1971: 229) writes: “When the sound changes led to the divergence of one of the main forms of a strong verb from its class, then it could easily lose the connection with the class and shift to another strong verb.

134 “Da die starken Verben normalerweise einen dreistufigen Vokalwechsel besassen, konnten Verben mit einem zweistufigen Vokalwechsel leicht geändert werden.”
class or become weak.”

Class 7 has in Old Norse the most dispersed set of verbs and indeed class 7 belongs to the lower part in the table above.

The positions of classes 1, 2, 3, 6 and 7 in the table are now accounted for. Other variation may be due to the different frequencies of the verbs. A last possibility is that the uneven distribution results from the way I have divided the verbs into classes. According to Wurzel (1989) and Enger (1998) the productivity of a class is also apparent from the force with which other verbs are attracted. The most productive classes would attract new candidates most strongly. This is roughly the case in Norwegian, as shown in Table 5.28.

### Table 5.28 Distribution of new strong verbs in Norwegian

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4/5</th>
<th>6</th>
<th>7</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of verbs</td>
<td>7.5</td>
<td>4.5</td>
<td>16</td>
<td>1</td>
<td>3</td>
<td>2</td>
<td>34</td>
</tr>
<tr>
<td>Percentage</td>
<td>22.1</td>
<td>13.2</td>
<td>47.1</td>
<td>2.94</td>
<td>8.82</td>
<td>5.9</td>
<td>100</td>
</tr>
</tbody>
</table>

For reasons of comparison, I put new verbs, unattested verbs, loan-verbs and former weak verbs together in Table 5.28. The percentages roughly correspond to the measure of productivity of Table 5.27: class 1, 2 and 3 attract most verbs. The relatively large number of verbs that go to class 3 instead of classes 1 and 2 is because these latter classes impose more restrictions on the phonological form of a verb than class 3. While the productivity of a class may be higher when it is clearly phonologically defined, the attraction of new verbs may be hindered by this same condition (cf. Wurzel 1989: 152). Another factor which lowers the high correlation with productivity is the influence of the source language. The loans in Norwegian come mainly from Danish and German. In these languages the verbs already had a strong conjugation, which influenced the class they were transferred to in Bokmål.

Now I turn to differences between the weak classes, with respect to the number of verbs they received. In Table 5.29 I repeat the number of strong verbs which entered each weak class. In addition, I counted the percentages each class received.

---

135 “Wenn die Lautentwicklung dazu führte, dass sich eine der Hauptformen des starken Verbs von seiner Gruppe abhob, konnte es leicht den Zusammenhang mit der Gruppe verlieren und in eine andere Gruppe der starke Verben übergehen oder schwach werden.”

136 I have divided the strong verbs into seven classes, unlike Enger (1998: 165), whose class division is synchronically motivated. I did not follow the Old Norse class division as conservatively as Venås (1967). For instance, I reassigned komme ‘come’ and sove ‘sleep’ to another class, unlike Venås, because of their different past tense stem vowel. With respect to the weak verbs my analysis may have clouded a more regular distribution. I gathered my data from Enger (1998) and I consulted Bråteit (1990), Førsund & Balk (1971), Haugen (1965, 1976a), Propst (pers.comm.), Seebold (1970), Seip (1971), and Venås (1967). When the sources were contradictory, I rated the possibilities all equally. The Norwegian data are quite complex, and even in the comprehensive study of Enger (1998: 83, 160) it is said that giyse and fudge are weak verbs, while in the appendix a strong conjugation for these verbs is given.
Weak class 3 is phonologically conditioned and is filled with verbs whose stem ends in a vowel in Old Norse, or in a -þ-, which was later weakened and deleted in many verbs. With respect to the other three weak classes, Enger (1998:121ff.) claims that there is a path that strong verbs follow when they become weak: “What we observe when verbs change inflection class, then, is similarity between inflection classes. The verbs normally go to classes that differ only in one or two forms; the entire paradigm is not changed at all.” Class 2 has what is generally called toneme 1 in its present tense, like strong verbs, while weak class 4 always has toneme 2 in the present tense. Therefore, weak class 2 has more in common with strong classes than weak class 4, and strong verbs would go first to class 2, although class 4 is, according to Enger (1998: 121), “pointed out as productive”. This explanation leaves three problems unsolved. First of all, Enger acknowledges 21 new classes of weak verbs, differing from each other in tonemes, number of syllables, vowel change, final consonantal change, and past tense suffix. But, when there are so many classes, why did a new class not arise, moulded on the weak class 4, but retaining toneme 1 of the strong class present tense? In other words, when verbs change in a preferred pattern of small steps (cf. Enger 1998: 121), why exactly are these small steps taken, and not more minimal steps? A second problem is that no verb has entered class 1. For instance, svelle, ‘swell’ from Enger’s perspective, could have changed from svellur-svall-svullum-svullinn (PRES-PAST.SG-PAST.PL-PARTICIPLE) to sveller1-svall1-svelle2 (PRES-PAST-PARTICIPLE) (the upper cases are the toneme numbers), and then from there to weak class 1, like sette ‘set’ did: sveller1-svall1-svelle2-svall2. However, changes to weak class 1, which are possible under Enger’s analysis, did not occur. A third problem with Enger’s analysis is that it makes a prediction of the path along which verbs change, but
does not say why so many verbs have remained in class 2, instead of going to the most productive class 4. To solve these problems I suggest an analysis in which verbs change immediately to the most unmarked class, that is, the most productive class, while factors of distance between source and purpose class play only a secondary role. I suggest that weak class 1 is more marked than class 2 and 4, since it marks past tense with both vowel change and a suffix. Therefore it attracts no verbs. Furthermore, the attraction by class 2 is higher than by class 4 because of the more salient dental suffix. This tentative proposal needs further examination, since today apparently the 4th weak class is most productive.

When considering the source of the weak verbs, there is a slight imbalance in that strong class 2 seems to have a preference for weak class 4, and strong class 6 for weak class 2. This may be a coincidence. However, it can also be a sign that the transitions of verbs is not only ruled by markedness and/or distance between classes, but also by the class from which the verb comes.

Moreover, as argued above, verbs do not always select the class to which they are closest. Instead, the factor of productivity also seems to play an important role (cf. also the section on Faroese, p.227).

5.5.2.3 Fusion and homonymy

There are no longer any homonymic forms in Norwegian, because the former categories in which homonymic forms occurred have disappeared. Since there is only one category fusion no longer exists in Bokmål today.

5.5.3 Conclusion

In Bokmål Economy is more important than in Old Norse, Icelandic or Faroese, and distinctions are only made in the category of tense. Allomorphy, in contrast, is still widely found in the expression of tense, in both the tense suffixes as well as in the preservation of the strong conjugation classes. These classes retain their members better when they are phonologically conditioned, when they have many members, when they display little variation among their members, and when the distance to other classes is large. The inclusion of verbs into a particular weak class is determined by the phonology of the verb in question, the productivity of the weak class, and the distance between the weak class and the class from which the verb comes. It is remarkable that on the one hand many verbs disappeared or became weak, thereby decreasing the amount of allomorphy, while on the other hand many verbs which had been borrowed or newly formed retained their strength. In summary, while the importance of Economy has increased greatly, Transparency is still extensively violated.

5.6 Linguistic and social changes in Scandinavian

Scandinavian has undergone two important changes in its verbal inflection: first, the increase of Economy and the parallel increase of Transparency; second, the reduction of the number of strong verbs in Scandinavian. The central question here is why more categories than expected have been lost in modern Scandinavian, while relatively few strong verbs have been lost?

While the categories of mood, person and number in Old Norse have largely remained the same in Icelandic, they have been reduced considerably in Faroese, and disappeared completely in Norwegian. This corresponds to the measure in which the Icelandic,
Scandinavian

Faroese, and Norwegian societies are Type 2 societies. The Icelandic speech community is a typical Type 1 community since it has been very homogeneous, has seen very few second language learners, and has placed a high value on its language throughout its history. On the Faroe Isles, there has been more dialect diversity, and Faroese has had less prestige, and more contact with Danish. Reduction of categories and allomorphy have been especially strong in the capital where a kind of mixed dialect, largely influenced by Danish, has developed. Norwegian society has been most open to foreign language and dialect influence among these three societies.

Nevertheless, the speed and the extent to which category reduction took place was remarkable. Most aspects of inflection in Norwegian had been wiped out in less than two centuries of trade contacts in the Hanse cities. Large parts of the verb paradigm in Faroese have also been eroded on the isolated Faroe isles. Even Icelandic, with its extreme language conservatism has seen some simplifying tendencies.

The social factors must have interacted with structural tendencies in the heavy Scandinavian deflection. When we compare the social history of Scandinavian with that of Quechua, we find that similar social factors had far less consequences for the Quechua verb inflection. When we relate Scandinavian reduction with comparable reductions in other Germanic languages like English and Dutch, and with the lack of such extreme reductions in other Indo-European languages like Slavic or Baltic languages (cf. Comrie 1998: 78ff; Schmalstieg 1998), we conjecture that the tendency to reduce verbal inflection is a typical all-Germanic feature.

To explain this, it has been suggested that early Germanic metrical changes have - metaphorically speaking- put a time bomb under Germanic verb inflection (cf. Salmons 1992; Van Coetsem & Hendricks 1981). Heavy stress shifted to the initial syllable, and other parts of the word tended to become reduced in stress, vowel quality and consonant variation. When some reductions and assimilatory changes took place in final syllables, the earlier agglutinative system of Indo-European became less transparent in Old Norse (cf. Werner 1984). This opaqueness was, in addition to the metrical changes, an extra motivation to continue the reduction of the inflectional system.

Nevertheless, the phonological changes and the morphological consequences in Old Norse do not explain the subsequent patterns of change in Scandinavian. I have shown that the social factors of contact, internal diversity and attitudes correspond to the extent of reduction. I conclude that the average speed of change, and the direction of change was determined by early Germanic structure. However, variation within the general trend is determined by social factors.

The order of category reduction correlates largely with the feature hierarchy (cf. section 3.3.2). That is, person is more easily lost than number, and both these agreement features disappear more quickly than tense, which is not lost at all. Reduction of tense has actively been counteracted by speakers of Norwegian (cf. section 5.5.2.1). Mood, however, has been lost rapidly, not only due to phonetic pressure but also for other reasons. Typologically, mood is an unmarked and common category (cf. Bybee 1985), and the loss of mood in Scandinavian, and also in other Germanic and many Indo-European languages, must be related to the specific semantic and syntactic characteristics of mood in these languages.
The loss of strong verbs does not run parallel with the extent of deflection. The loss of strong verbs in Icelandic is 6.8%, while in both Faroese and in Bokmål Norwegian it is around 40%. If Norwegian strong verb loss behaved like the erosion of categories, we would expect a much higher loss of strong verbs. Moreover, Norwegian has borrowed many new strong verbs from other Scandinavian and Germanic varieties, which results in an even higher total amount of strong verbs in Bokmål Norwegian than in Faroese.

This discrepancy suggests that the acquisition of irregular past tenses is not so difficult for second language learners. Another factor for the retention of strong verbs is that these verbs differ radically from their weak counterparts. Replacement of strong verbs by weak verbs is a larger step than the gradual loss of categories in Scandinavian. This is evident from the fact that the strong class that behaves most similarly to weak class inflection (class 6) lost significantly more verbs in Faroese and Norwegian. Finally, the varieties Norwegian came in contact with were Germanic varieties that also had strong verbs. Perhaps, if the Hanse traders had spoken a non-Germanic language, the loss of strong verbs would have been higher. Indeed, other Germanic languages, like Afrikaans, with a history of contact with languages like Khoikhoi and Malay (cf. Roberge 1995) have lost more of their strong verb conjugation system.

The extent to which strong verb classes lose their members is also determined by the stem ending, the heterogeneity of the class, and the phonological uniformity. Classes with a specific phonological shape retain their members more easily. However, more specific phonological characteristics prevent absorption of new verbs into the class, as is apparent in Bokmål. Productivity of a verb class is different with respect to its historical stability and the easiness with which it absorbs new verbs (contra Wurzel 1989).

The phonological characteristics of strong and weak verb classes initially were meaningless side-effects of other changes. When verbs moved to other classes on the basis of these phonological features, the phonological shape was synchronically reanalysed. That is, earlier idiosyncratic lexical class membership becomes regularised into phonological conditioned class membership.

In many Arabic varieties reduction in categories also took place initially due to phonological pressures, and the process of reduction in Arabic is a combination of semantic, morphological and phonological considerations. Moreover, in Arabic some categories also disappeared - like the dual - which cannot be explained by phonological factors. Scandinavian simplification is different in mainly operating at the edge of the word, that is the inflectional suffix.

The discrepancy between inflectional reduction and maintenance of morphological classes is also present in Swahili varieties. While several tense/aspect/mood categories disappeared from Katanga Swahili, the number of noun classes even increased a little. Moreover, the extension of the noun classes in Katanga Swahili contrasts with the reduction in noun class agreement. This difference can also be interpreted as a difference between the span of memory and the computational capacities of a language user. In chapter 8 I will further elaborate on these comparisons between the case-studies presented.

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137 Verb stems ending in a vowel are more often transferred to a weak class than stems ending on a consonant.

138 However, in Faroese some umlauts of Old Norse have disappeared that in Icelandic still subsist.
5.7 Scandinavian changes from the perspective of Optimality Theory

5.7.1 Introduction

In this section I analyse the reduction of inflectional categories and the increase of transparency in Scandinavian in terms of the Optimality Theory. I discuss how this change towards more analyticity took place in the various Scandinavian languages, and how it interacted with phonological changes. In 5.4.2.2 and 5.5.2.2 I examined the reduction and reordering of weak and strong verb classes. Many of these changes are language-specific and are hard to model in OT, and will not be discussed further. The loss of stem umlaut in Faroese and Icelandic will not be examined either. In 5.7.2 I discuss what constraint ordering accounts for the rich inventory of categories of Old Norse. In the next sections I examine how the reductions in Icelandic, Faroese, and Norwegian can be represented as constraint reranking and lexical change. First I will describe the constraints I use for Scandinavian.

I argued in section 3.3.1 that \textit{LEX} is the highest ranked constraint:

“A complex sign is well-formed if and only if it consists only of morphemes.”

The morphological constraints consist of Markedness constraints that restrict the number of categories, and Faithfulness constraints that demand similarity between categories in the Input and Output. The markedness constraints have the general form \(*[X, (Y)]\) which means:

“The categories X (and Y) is/are not allowed to be represented together in a phonological word.” (Y is one or more categories).”

In section 3.3.2 I discussed the general properties of these kinds of constraints. In Scandinavian \(*[\text{Pers}, \text{Num}]\) constraints, like \(*[1, \text{Sg}], *[\text{Person}, \text{Plur}]\), play an important role. In addition the \(*[\text{Mood}, \text{X}]\) constraints also play a role. The universal feature hierarchy is important in Scandinavian as well. Part of this hierarchy is: Tense \(\rightarrow\) Mood \(\rightarrow\) Number \(\rightarrow\) Person. This means that, e.g. \(*[1, \text{Sg}]\) entails that 1st person is not expressed, since Num is ranked higher than Pers, cf. section 3.3.2 for more details. There are two kinds of faithfulness constraints, “\textit{Max}”- and “\textit{Dep}”-constraints. In Scandinavian only Max-constraints play a role: categories in the Input must also be present in the Output. The phonological markedness constraints operative in Scandinavian are:\textsuperscript{139}

\(*[\mu]\) \textit{inf.suf} “Only one mora is allowed in inflectional suffixes.”

\(*Q\) \textit{inf.suf} “No vowel quality is expressed in the phonological form of inflectional suffixes, only schwa.”

These two constraints are instances of a more general phonological markedness constraint that says:

“Express no contrasts in an inflectional suffix.”

This constraint concerns both phonology and morphology, and is related to other constraints that concern the isomorphy between phonological and morphological structure (Van Oostendorp, pers.comm.).

\textsuperscript{139} Actually, these constraints are not strictly phonological since they concern the phonology-morphology interface. However, they are ranked with the other phonological constraints, and I consider them as phonological constraints here.
The phonological faithfulness constraint in Scandinavian is important here:

Max(Vowel): “Express all properties of the vowel of the Input in the Output.”

We need an extra stipulation that says that a reduction of ia to a is preferred above a reduction of ia to i. We would like to say that the difference between ia and a is smaller than between ia and i, and between ia and o. Therefore, we propose that a has more ‘vocality’ than i. We propose a hierarchy a > i > o, which says that when we want to preserve as much as possible of the vocality of the vowel, we prefer a one step adjustment, that is, from a to i, from i to a, from i to o, or from o to i, above a two step adjustment from a to o or from o to a. Two step adjustments count as heavier violations of Max(Vowel) than one-step adjustments. This hierarchy is related to the sonority hierarchy, and is further motivated by the observation that a can be called more ‘vocalic’ since it has no consonantal counterpart, in contrast with i. Moreover, both in the assimilation rules in weak verbs in Classical and Moroccan Arabic, and in the vowel changing rules in Najdi Arabic the same hierarchy plays an important role (cf. section 4.7.2.1).

I have divided these constraints into four groups. I call the morphological markedness constraints Econ, for Economy, the morphological faithfulness constraints Trans, for Transparency, the phonological markedness constraints Mark, and the phonological faithfulness constraints Faith.

### 5.7.2 Old Norse

On the basis of the data of section 5.2, we propose that the affixes of old Norse are as in Table 5.30. Note that there are several allomorphic, fused and homonymic affixes which are deviations from Transparency.

<table>
<thead>
<tr>
<th>Form</th>
<th>Meaning</th>
<th>Context</th>
</tr>
</thead>
<tbody>
<tr>
<td>ø</td>
<td>+past</td>
<td>St2+sg</td>
</tr>
<tr>
<td>ø</td>
<td>+past</td>
<td>St3+pl</td>
</tr>
<tr>
<td>-o</td>
<td>+past</td>
<td>W</td>
</tr>
<tr>
<td>-i</td>
<td>+subj</td>
<td>VUM,past</td>
</tr>
<tr>
<td>-i</td>
<td>+ind</td>
<td>W,past</td>
</tr>
<tr>
<td>-um</td>
<td>+1+pl</td>
<td>+pres+ind</td>
</tr>
<tr>
<td>-iθ</td>
<td>+2+pl</td>
<td>+pres+ind</td>
</tr>
<tr>
<td>-a</td>
<td>+pl</td>
<td>+pres+ind</td>
</tr>
<tr>
<td>-u</td>
<td>+pl</td>
<td>+past+ind</td>
</tr>
<tr>
<td>-m</td>
<td>+1</td>
<td>+pl</td>
</tr>
<tr>
<td>-0</td>
<td>+2</td>
<td>+pl</td>
</tr>
<tr>
<td>-a</td>
<td>+1+sg</td>
<td>+subj</td>
</tr>
<tr>
<td>-a</td>
<td>+1+sg</td>
<td>W,past</td>
</tr>
<tr>
<td>-zt</td>
<td>+2</td>
<td>St2</td>
</tr>
<tr>
<td>-r</td>
<td>+2</td>
<td></td>
</tr>
<tr>
<td>-r</td>
<td>+3+sg</td>
<td>+pres+ind</td>
</tr>
</tbody>
</table>
Scandinavian

In addition to the constraint ranking, Max(Tense) >> Max(Mood) >> Max(Num) >> Max(Pers), which follows from the universal feature hierarchy, the ranking in Old Norse of the morphological constraints is as follows:

- Max(Pers) >> *[Pers, Num]
- Max(Num) >> *[Num, Mood]
- Max(Mood) >> *[Mood]
- Max(Tense) >> *[Tense]

These orderings state that all inflectional categories must be expressed in Old Norse, which has a rich paradigm, in which all cells have different content and in which homonymies only emerge through accidental phonological similarities.

With respect to the phonological side of the candidates; the markedness constraint, *[μμ]_{inf,suf} dominates the faithfulness constraint Max(Vowel). Markedness constraint *Q_{inf,suf} is dominated by Max(Vowel):

- *μμ_{inf,suf} >> Max (Vowel) >> *Q_{inf,suf}

On a more abstract level the order of constraints is as follows. The numbers 1 and 2 mean that Mark1 and Mark2 are different:

- Morphology: Trans >> Econ
- Phonology: Mark1 >> Faith >> Mark2

The ranking of these constraints yields Tableaux 5.1 and 5.2.140

Tableau 5.1 Input: Icelandic vakna-Ø-?-?, awake+PAST+IND +1+SG

<table>
<thead>
<tr>
<th>Candidate</th>
<th>Max(Pers)</th>
<th>*[Pers, Num]</th>
<th>*[μμ]_{inf,suf}</th>
<th>Max(V)</th>
<th>*Q_{inf,suf}</th>
</tr>
</thead>
<tbody>
<tr>
<td>vakna-Ø-a PAST+IND +1+SG</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>vakna-Ø-i PAST+IND+1+SG</td>
<td>*</td>
<td>*</td>
<td>**!</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>vakna-Ø-i-a PAST+IND +1+SG</td>
<td>*</td>
<td>*</td>
<td>*!</td>
<td>**</td>
<td>**</td>
</tr>
<tr>
<td>vakna-Ø-a PAST+IND +1+SG</td>
<td>*</td>
<td>*</td>
<td>**!</td>
<td>**</td>
<td>**</td>
</tr>
</tbody>
</table>

Candidate vakna-Ø-i, PAST+IND crashes because it does not express person and number, while vakna-Ø-i, PAST+IND+1+SG violates Max(V), because of its too strong reduction in vowel quality. That is, the ending -ia- violates *[μμ]_{inf,suf}, but should not be reduced to -i- instead of -ia- since that violates Max(V) too much (see above). Candidate vakna-Ø-a crashes for the same reason. Candidate vakna-Ø-i-a crashes because of the high-ranking No-Double-Mora-constraint, *[μμ]_{inf,suf}. Candidate vakna-Ø-a is the optimal candidate, since it does not violate Max(Pers) too much, and it reduces the double mora inflectional ending -ia only to -a. In Tableau 5.2 we see that mood and tense must be expressed because of high ranking faithfulness constraints.

140 A line with width 1.5 separates constraints of which the mutual order is universal. In this section these are morphological above phonological constraints. A double 0.75 line separates constraints that are mutually unordered, and unifies in fact two different tables.
5.7.3 Icelandic

In Icelandic few changes took place, cf. section 5.3. In the late Middle Ages the Icelandic forms for 1st and 3rd person singular varied, which led to the disappearance of the [+1, +sg] suffix -a. The loss of person distinctions in the singular and not in the plural is unexpected from the perspective of the universal feature hierarchy.

I suggest that, while other rankings remained the same, in the transition period one instantiation of the filter constraint *[Pers, Num] began to ascend, yielding the following constraint ranking:

\[
\text{Max}(\text{Pers}) \text{ // } ^*[1, \text{ Sg}] \gg ^*[\text{Pers, Num}]^{141}
\]

Tableau 5.3 Input: Icelandic vak-

\[
\begin{array}{|c|c|c|c|}
\hline
\text{vak-}\text{\text{-a} PAST+IND+1+SG} & ^*[1, \text{ Sg}] & ^*[\mu]\text{inf.suf} & ^*[V]\text{inf.suf} \\
\hline
\text{vak-}\text{\text{-i} PAST+IND} & ^* & ^* & ^* \\
\text{vak-}\text{\text{-a} PAST+IND} & ^* & ^* & ^* \\
\end{array}
\]

As long as Max(Pers) is ranked higher than *[1, Sg], vak-\(\text{\text{-a}}\) is the optimal candidate. As soon as *[1, Sg] ranks higher, vak-\(\text{\text{-i}}\) becomes the optimal candidate. The order of these two constraints may be dependent on extra-linguistic circumstances like age, style, etc.\textsuperscript{142} The other candidates are equally optimal with respect to morphological constraints, but they are all outranked by phonological constraints.

In modern Icelandic vak-\(\text{\text{-a}}\) no longer surfaces and the ranking has become:

\[
^*[1, \text{ Sg}] \gg \text{Max}(\text{Pers}) \gg ^*[\text{Pers, Num}]^{143}
\]

Tableau 5.4 Input: Icelandic vak-

\[
\begin{array}{|c|c|c|c|}
\hline
\text{vak-}\text{\text{-a} PAST+IND+1+SG} & ^* & ^* & ^* \\
\text{vak-}\text{\text{-i} PAST+IND} & ^* & ^* & ^* \\
\end{array}
\]

\textsuperscript{141} In fact, the family of *[Pers, Num] constraints comprises *[1sg]. Therefore, *[Pers, Num] should be read here as \textquoteleft other\textquotefrighth*[Pers, Num] constraints.

\textsuperscript{142} For a long time the 1sg suffixes were unstable in Old Icelandic, cf. section 5.2.

\textsuperscript{143} Actually, Max(Num) should also have its place in this ordering. However, its position depends on whether we consider forms that express singular number to violate Max(Num) or not.
The change in the plural person/number suffixes in the subjunctive can be modelled similarly. That is, the promotion of a *[Subj, 1/2Plur] constraint results in the disappearance of the plural subjunctive affixes. Old Norse vakna-ð-i-m AWAKE-PAST-SUBJ+1(PL) has become vökn-u-ð-um, cf. Tableau 5.5. This solution has one serious disadvantage. According to the universal constraint ranking, Tense → Num → Pers, *[Subj, 1/2Plur] would block number from appearing, and not mood. Since this is not the case, we must either accommodate our explanation of this Icelandic change, or assume that the universal hierarchy is not absolute. It is difficult to see how we could conceive this Icelandic change differently. In Norwegian the loss of the plural subjunctive co-occurred with a reduction in vowel quality, but in Icelandic this is not the case. There are also no other morphological or phonological changes from which the loss of the plural subjunctive could be a consequence. Therefore, we assume that the universal constraint order is not absolute. In Old Norse the ranking of morphological constraints was as follows:

**Trans >> Econ**

Now in Icelandic the ranking has become:

**Econ1 >> Trans >> Econ2**

That is, two economy or markedness constraints have been promoted above the faithfulness constraint. The order of phonological constraints has remained the same.

This new ranking implies that the affixes, -a, [+1, +sg], never surfaced again. Therefore I crossed them out in Table 5.31, thus indicating that these affixes had faded out of the language of the Icelandic people. In addition, -um and -i do not need the specification /_+ind/_ anymore, since they cannot surface in the subjunctive, because of the high ranked markedness constraint, *[Subj, 1/2Plur].

An alternative interpretation is that the disappearance of the 1sg affix -a is triggered by a phonological constraint that weakens the inflectional suffix, like *Q inf.suff. Reduction in vowel quality - e.g., only allowing a distinction in roundness i versus u - would then have led to the disappearance of the -a-suffix, which only after the actual disappearance could be rephrased as a rising of the *[1, Sg] constraint. An argument for such an analysis would be a general promotion of *Q inf.suff. in the Germanic languages as a result of the earlier stress shift. Against this view it can be adduced, however, that in the present tense 1SG and 3 SG have also been conflated, and furthermore, that there are still many i/a oppositions in Icelandic, even in inflection. In addition, vowel reduction cannot explain the reduction in several person distinctions in Faroese either. Therefore, we claim that morphological markedness constraints were promoted before the phonological markedness constraints rose. Nevertheless, the phonology of Scandinavian set the stage in

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144 The umlaut in this form is triggered by the round vowel of the new Icelandic suffix.
145 While the crossing-out looks quite sudden, in practice language users have knowledge of dialect differences and archaic language, which motivates the use of the term ‘faded out’.
which the promotion of *[1, Sg] and *[Subj, 1/2Plur] could take place without
tremendous phonological consequences.

Table 5.31 Inflectional affixes in Icelandic
Changes in affix specifications are in bold.

<table>
<thead>
<tr>
<th>Form</th>
<th>Meaning</th>
<th>Context</th>
</tr>
</thead>
<tbody>
<tr>
<td>ø</td>
<td>+past</td>
<td>St2__+sg St2= 2nd stem (strong verbs)</td>
</tr>
<tr>
<td>ø</td>
<td>+past</td>
<td>St3__+pl St3= 3rd stem (strong verbs)</td>
</tr>
<tr>
<td>0</td>
<td>+past</td>
<td>W__ W=Weak Verb Stem</td>
</tr>
<tr>
<td>i</td>
<td>+subj</td>
<td>VUM+past__ VUM=Umlauted Verb</td>
</tr>
<tr>
<td>i</td>
<td>+ind</td>
<td>W+past__</td>
</tr>
<tr>
<td>um</td>
<td>+1 +pl</td>
<td>+pres__</td>
</tr>
<tr>
<td>iθ</td>
<td>+2 +pl</td>
<td>+pres__</td>
</tr>
<tr>
<td>a</td>
<td>+pl</td>
<td>+pres+ind__</td>
</tr>
<tr>
<td>u</td>
<td>+pl</td>
<td>+past__</td>
</tr>
<tr>
<td>m</td>
<td>+1 +pl</td>
<td>+pl__</td>
</tr>
<tr>
<td>θ</td>
<td>+2 +pl</td>
<td>+pl__</td>
</tr>
<tr>
<td>a</td>
<td>+1 +sg</td>
<td>=subj__</td>
</tr>
<tr>
<td>a</td>
<td>+1 +sg</td>
<td>W+past__</td>
</tr>
<tr>
<td>zt</td>
<td>+2</td>
<td>St2__</td>
</tr>
<tr>
<td>r</td>
<td>+2</td>
<td></td>
</tr>
<tr>
<td>r</td>
<td>+3 +sg</td>
<td>+pres+ind__</td>
</tr>
</tbody>
</table>

5.7.4 Faroese

In Standard Faroese, several markedness constraints have ascended higher than
faithfulness constraints. In Old Norse Max(Pers) always dominated *[Pers, Num]. In
Faroese only the faithfulness constraints Max(Pers, Pres, Ind) and Max(Pers/ St2) still
dominate *[Pers, Num], while Max(Pers, Pres, Ind) is in its turn dominated by *[Pers,
Plur], cf. Figure 5.4.146

Max(Pers, Pres, Ind) Max(Pers/ St2) Max(Mood) Max(Num)

*Pers, Num]
Max(Pers)

Figure 5.4 Constraint dominance relations in Standard Faroese

Each arrow indicates a constraint dominance relation, which is transitive. Constraints that
are not directly or indirectly connected to each other do not dominate each other. In
terms of transparency and economy this can be represented as:

---

146 I do not mention constraint rankings that follow from the universal hierarchy but do not play a role in Scandinavian.
Scandinavian

Econ₁ >> Trans₁ >> Econ₂ >> Trans₃
Trans₂ >> Econ₂
Econ₃ >> Trans₃
Econ₄ >> Trans₄

The phonological constraints are still ordered as in Old Norse:

\[ \*[\mu\mu]^{inf.suf} >> \text{Max}(V) >> \*Q^{inf.suf} \]

The morphological constraint order is visible from the following tableaux.

Tableau 5.6 Input: Standard Faroese dom-?, Judge+PRES+IND+1+PL

<table>
<thead>
<tr>
<th></th>
<th>*[Pers, Pl]</th>
<th>Max(PersPresInd)</th>
<th>Max(V)</th>
<th>*Q^{inf.suf}</th>
</tr>
</thead>
<tbody>
<tr>
<td>dom-a PL (+PRES, +IND)</td>
<td>←</td>
<td>**</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>dom-um 1 + PL (+PRES +IND)</td>
<td></td>
<td>*!</td>
<td>*</td>
<td></td>
</tr>
<tr>
<td>dom-ø PL (+PRES +IND)</td>
<td></td>
<td>**</td>
<td>*!</td>
<td></td>
</tr>
</tbody>
</table>

The candidate dom-um crashes because it violates a filter constraint which has been promoted in Faroese. The candidate dom-ø is morphologically similar to dom-a, but violates Max(V). Therefore, dom-a remains the optimal candidate.

Tableau 5.7 Input: Standard Faroese dom-?, Judge+PRES+IND+2+SG

<table>
<thead>
<tr>
<th></th>
<th>Max(PersPresInd)</th>
<th>*[Pers, Num]</th>
</tr>
</thead>
<tbody>
<tr>
<td>domi-r 2</td>
<td>←</td>
<td>**!</td>
</tr>
<tr>
<td>domi -</td>
<td></td>
<td>*!</td>
</tr>
</tbody>
</table>

The candidate domi expresses too little here, since there is still a high ranking Transparency constraint in this example. The placement of the filters *[Pers, Num] and *[Subj, Pl] above Max(Pers) and Max(Num) is seen in the Tableaux 5.9 and 5.10.

Tableau 5.8 Input: Standard Faroese skeyt-?, Shoot+PAST+IND+2+SG

<table>
<thead>
<tr>
<th></th>
<th>Max(Pers/St2__)</th>
<th>*[Pers, Num]</th>
</tr>
</thead>
<tbody>
<tr>
<td>skeyt-st +2 (St2 _)</td>
<td>←</td>
<td>*</td>
</tr>
<tr>
<td>skeyt -</td>
<td></td>
<td>**!</td>
</tr>
</tbody>
</table>

Tableau 5.9 Input: Standard Faroese dom-d-?, Judge+PAST+IND+2+SG

<table>
<thead>
<tr>
<th></th>
<th>*[Pers, Num]</th>
<th>Max(Pers)</th>
</tr>
</thead>
<tbody>
<tr>
<td>dom-d-i PAST+IND</td>
<td>←</td>
<td>**</td>
</tr>
<tr>
<td>dom-d-i-r PAST+IND+2</td>
<td></td>
<td>*!</td>
</tr>
</tbody>
</table>

Tableau 5.10 Input: Standard Faroese dom-?, Judge+PRES+SUBJ+PL+1

<table>
<thead>
<tr>
<th></th>
<th>*[Subj, Pl]</th>
<th>*[Pers, Plur]</th>
<th>Max(Num)</th>
</tr>
</thead>
<tbody>
<tr>
<td>dom-i SUBJ</td>
<td>←</td>
<td></td>
<td>**</td>
</tr>
<tr>
<td>dom-a PL</td>
<td></td>
<td>!</td>
<td></td>
</tr>
<tr>
<td>dom-i-m SUBJ+1(PL)</td>
<td>!</td>
<td>!</td>
<td>*</td>
</tr>
</tbody>
</table>

147 In this example domi comprises also a so-called ‘stem vowel’ (cf. section 5.2.1), whose distribution I do not discuss further here.
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The *\[Subj, Past\] filter must be placed above Max(Mood) and *\[Pers, Pl\] above Max(Pers).

### Table 5.11 Input: Standard Faroese dom-, Judge\(\text{+PAST+SUBJ+PL+1}\)

<table>
<thead>
<tr>
<th></th>
<th>*[Subj, Past]</th>
<th>Max(Mood)</th>
<th>*[Pers, Pl]</th>
<th>Max(Pers)</th>
</tr>
</thead>
<tbody>
<tr>
<td>dom-d-u PAST+PL</td>
<td>*</td>
<td></td>
<td>*</td>
<td>**</td>
</tr>
<tr>
<td>dom-d-i PAST+SUBJ</td>
<td>*</td>
<td></td>
<td>*</td>
<td>**</td>
</tr>
<tr>
<td>dom-d-i-m PAST+SUBJ+1(PL)</td>
<td>*</td>
<td>*</td>
<td>**</td>
<td></td>
</tr>
<tr>
<td>dom-d-um PAST+1+PL</td>
<td></td>
<td>*</td>
<td>*</td>
<td></td>
</tr>
</tbody>
</table>

Finally, the ranking of *\[\mu\mu\] inf.suf above Max(V) is apparent from Tableau 5.12.

### Table 5.12 Input: Standard Faroese dom-, Judge\(\text{+PAST+IND+1+PL}\)

<table>
<thead>
<tr>
<th></th>
<th>*[Pers, Num]</th>
<th>Max(Pers)</th>
<th>*[\mu\mu] inf.suf</th>
<th>Max(V)</th>
</tr>
</thead>
<tbody>
<tr>
<td>dom-d-iu PAST+IND+PL</td>
<td>**</td>
<td></td>
<td>*</td>
<td>**</td>
</tr>
<tr>
<td>dom-d-u PAST+IND+PL</td>
<td>**</td>
<td></td>
<td>*</td>
<td></td>
</tr>
<tr>
<td>dom-d-um PAST+IND+PL+1</td>
<td>*</td>
<td>*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>dom-d-ium PAST+IND+PL+1</td>
<td>*</td>
<td>*</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The various promotions of markedness constraints above faithfulness constraints resulted in the demise of some affixes, cf. Table 5.32. I crossed out the affixes which are no longer relevant, and I marked affixes that have changed, in bold. As in Icelandic, it is hard to conceive how, in Faroese, promotions of phonological markedness constraints by themselves could lead to the changes which I have described here. These changes can only be accounted for by separate demotion and promotion of morphological constraints.

One affix, -i, has extended its range and needs an extra rule now.

### Table 5.32 Inflectional affixes in Standard Faroese

<table>
<thead>
<tr>
<th>Form</th>
<th>Meaning</th>
<th>Context</th>
</tr>
</thead>
<tbody>
<tr>
<td>ø</td>
<td>+past</td>
<td>St2=2nd stem (strong verbs)</td>
</tr>
<tr>
<td>ø</td>
<td>+past</td>
<td>St3=3rd stem (strong verbs)</td>
</tr>
<tr>
<td>0</td>
<td>+past</td>
<td>W=Weak Verb Stem</td>
</tr>
<tr>
<td>i</td>
<td>+subj</td>
<td>V=Verb Stem</td>
</tr>
<tr>
<td>i</td>
<td>+ind</td>
<td>W+past=</td>
</tr>
<tr>
<td>i</td>
<td>+1</td>
<td>=1=sg=</td>
</tr>
<tr>
<td>um</td>
<td>+1+pl</td>
<td>=pres+ind=</td>
</tr>
<tr>
<td>ùd</td>
<td>+2+pl</td>
<td>=pres+ind=</td>
</tr>
<tr>
<td>a</td>
<td>+pl</td>
<td>=pres=</td>
</tr>
<tr>
<td>u</td>
<td>+pl</td>
<td>=past=</td>
</tr>
<tr>
<td>m</td>
<td>=1</td>
<td>=pl=</td>
</tr>
<tr>
<td>0</td>
<td>=2</td>
<td>=pl=</td>
</tr>
<tr>
<td>ø</td>
<td>=3</td>
<td>=sub=</td>
</tr>
<tr>
<td>ø</td>
<td>=1+sg</td>
<td>W+past=</td>
</tr>
<tr>
<td>ø</td>
<td>=1+sg</td>
<td>=sub=</td>
</tr>
<tr>
<td>zt</td>
<td>=2</td>
<td>St2=</td>
</tr>
<tr>
<td>f</td>
<td>=2</td>
<td></td>
</tr>
<tr>
<td>r</td>
<td>+pers</td>
<td></td>
</tr>
</tbody>
</table>
Tórshavn is rather similar to Standard Faroese, except that the constraint *Q\text{inf.suf} has been promoted. This, however, resulted in several other constraints and affixes becoming vacuous. Furthermore, FaithPers(St2) has been demoted. Tórshavn constraint ranking looks as follows:

*{[Pers, Pl]} >> Max(Pers, Pres, Ind) >> *{[Pers, Num]} >> Max(Pers)
*{[Subj, Past]} >> Max(Mood)
*{[Subj, Pl]} >> Max(Num)

In terms of transparency and economy this can be represented as:

\textbf{Econ}_1 >> \textbf{Trans}_1 >> \textbf{Econ}_2 >> \textbf{Trans}_2
\textbf{Econ}_3 >> \textbf{Trans}_3
\textbf{Econ}_4 >> \textbf{Trans}_4

The phonological constraints of Old Norse have been reordered as:

*{[\mu\mu]} \text{inf.suf} >> *Q \text{inf.suf} >> \text{Max}(V)

These changes are apparent from Tableaux 5.13 and 5.14.

**Tableau 5.13 Input: Tórshavn Faroese \textit{skeyt}-?, Shoot\text{+PAST\text{+IND\text{+2\text{+SG}}}}**

<table>
<thead>
<tr>
<th>Form</th>
<th>Meaning</th>
<th>Context</th>
</tr>
</thead>
<tbody>
<tr>
<td>skeyt-st 2{St2}</td>
<td>*!</td>
<td>Max(Pers/St2)</td>
</tr>
<tr>
<td>skeyt -</td>
<td>**</td>
<td>Max(Pers)</td>
</tr>
</tbody>
</table>

**Tableau 5.14 Input: Tórshavn Faroese \textit{dom}-?, Judge\text{+PAST\text{+PL\text{+1}}**

<table>
<thead>
<tr>
<th>Form</th>
<th>Meaning</th>
<th>Context</th>
</tr>
</thead>
<tbody>
<tr>
<td>dom-d-u PAST\text{+PL}</td>
<td>*!</td>
<td>Max(V)</td>
</tr>
<tr>
<td>dom-d\rightarrow PAST\rightarrow PL</td>
<td>*</td>
<td>**</td>
</tr>
</tbody>
</table>

The affixes in Tórshavn Faroese have become as in Table 5.33, or, more succinctly in Table 5.34.

**Table 5.33 Inflectional affixes in Tórshavn Faroese**

<table>
<thead>
<tr>
<th>Form</th>
<th>Meaning</th>
<th>Context</th>
</tr>
</thead>
<tbody>
<tr>
<td>ø</td>
<td>+past</td>
<td>St2_+sg</td>
</tr>
<tr>
<td>ø</td>
<td>+past</td>
<td>St3_+pl</td>
</tr>
<tr>
<td>ø</td>
<td>+past</td>
<td>W_</td>
</tr>
<tr>
<td>i</td>
<td>=subj</td>
<td>V_</td>
</tr>
<tr>
<td>i</td>
<td>=ind</td>
<td>W_+past</td>
</tr>
<tr>
<td>i</td>
<td></td>
<td>W_</td>
</tr>
<tr>
<td>ø/å</td>
<td>+pl</td>
<td>+past_</td>
</tr>
<tr>
<td>ø</td>
<td>+pl</td>
<td>St2_</td>
</tr>
<tr>
<td>ø</td>
<td>+2</td>
<td>St2_</td>
</tr>
<tr>
<td>r</td>
<td>+pers</td>
<td></td>
</tr>
</tbody>
</table>
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Table 5.34 Inflectional affixes in Tórshavn Faroese 2

<table>
<thead>
<tr>
<th>Form</th>
<th>Meaning</th>
<th>Context</th>
</tr>
</thead>
<tbody>
<tr>
<td>ø</td>
<td>+past</td>
<td>St1__+sg</td>
</tr>
<tr>
<td>ø</td>
<td>+past</td>
<td>St3__+pl</td>
</tr>
<tr>
<td>ø</td>
<td>+past</td>
<td>W__</td>
</tr>
<tr>
<td>ø</td>
<td>+pl</td>
<td>+past __</td>
</tr>
<tr>
<td>r</td>
<td>+pers</td>
<td></td>
</tr>
</tbody>
</table>

5.7.5 Norwegian

As in Tórshavn Faroese, *Q inf.suf is valued highly in Norwegian. In addition to the promotion of the "person filters", /-i, +1/ disappeared, and -r was extended to all person/number inflections in the present tense, thereby becoming a tense marker instead of marking differentiations in person, cf. Table 5.22. Person was no longer expressed at all. This gives rise to a generalisation over all *[PERS X] filters to the inviolable *[Pers]. Thanks to this generalisation, the loss of strong verb stem 3, and the influence of NoQ inf.suf, number is no longer expressed. The Norwegian constraint ranking is as follows:


Tableau 5.15 Input: Norwegian døm-?, Judge+PAST+IND+ PL+2

<table>
<thead>
<tr>
<th></th>
<th>*PERS</th>
<th>*Num</th>
<th>Max(Pers)</th>
<th>*Q +i</th>
<th>Max-V</th>
</tr>
</thead>
<tbody>
<tr>
<td>dom-t-ø PAST+IND</td>
<td>*</td>
<td></td>
<td>*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>dom-t-i PAST+IND</td>
<td></td>
<td></td>
<td>*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>dom-t-øø PAST+IND+2(PL)</td>
<td>*!</td>
<td>*</td>
<td>*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>dom-t-øø PAST+IND+PL</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

As in Tórshavn Faroese, dom-t-ø violates *Q inf.suf, dom-t-øø violates the person filter, while dom-t-ø, where the schwa is based on an underlying /u, +pl/, violates the number filter. Therefore, dom-t-ø is selected. The No Double Mora constraint has become vacuous since there are no further possibilities in the morphology for inflectional suffixes to violate this constraint. The Norwegian ranking can then be stated as follows:

Econ1//Econ2 >> Trans1//Trans2
Mark >> Faith

Now, the development towards more economy has ended in the dominance of person filters without any exception. The affix table is reinterpreted as in Table 5.35.
Table 5.35 Inflectional affixes in Norwegian

<table>
<thead>
<tr>
<th>Form</th>
<th>Meaning</th>
<th>Context</th>
</tr>
</thead>
<tbody>
<tr>
<td>ø</td>
<td>+past</td>
<td>St2__</td>
</tr>
<tr>
<td>ø</td>
<td>+past</td>
<td>St3=pl</td>
</tr>
<tr>
<td>ø</td>
<td>+past</td>
<td>W__</td>
</tr>
<tr>
<td>ø</td>
<td>+subj</td>
<td>VUM=past__</td>
</tr>
<tr>
<td>ø</td>
<td>+ind</td>
<td>W+past__</td>
</tr>
<tr>
<td>u</td>
<td>+1=pl</td>
<td>+pres+ind__</td>
</tr>
<tr>
<td>u</td>
<td>+2=pl</td>
<td>+pres+ind__</td>
</tr>
<tr>
<td>œ</td>
<td>+pl</td>
<td>+past+ind__</td>
</tr>
<tr>
<td>œ</td>
<td>+pl</td>
<td>+pl__</td>
</tr>
<tr>
<td>ø</td>
<td>+2</td>
<td>+pl__</td>
</tr>
<tr>
<td>ař</td>
<td>+1+sg</td>
<td>+subj__</td>
</tr>
<tr>
<td>ař</td>
<td>+1+sg</td>
<td>W+past__</td>
</tr>
<tr>
<td>øř</td>
<td>+2</td>
<td>St2__</td>
</tr>
<tr>
<td>iř</td>
<td>+pres</td>
<td>+ind__</td>
</tr>
<tr>
<td>øř</td>
<td>+3+sg</td>
<td>+pres+ind__</td>
</tr>
</tbody>
</table>

Or, more succinctly:

Table 5.36 Inflectional affixes in Norwegian 2

<table>
<thead>
<tr>
<th>Form</th>
<th>Meaning</th>
<th>Context</th>
</tr>
</thead>
<tbody>
<tr>
<td>ø</td>
<td>+past</td>
<td>St2__</td>
</tr>
<tr>
<td>ø</td>
<td>+past</td>
<td>St3=pl</td>
</tr>
<tr>
<td>ø</td>
<td>+past</td>
<td>W__</td>
</tr>
<tr>
<td>ø</td>
<td>+subj</td>
<td>VUM=past__</td>
</tr>
<tr>
<td>ø</td>
<td>+ind</td>
<td>W+past__</td>
</tr>
</tbody>
</table>

5.7.6 Conclusion

From an OT perspective we can describe the history of the west Scandinavian languages as follows. Earlier developments in Germanic resulted in a verbal structure in Old Norse in which Faithfulness constraints were ranked above Markedness constraints. Due to the considerable amount of fused affixes and allomorphy in Old Norse, the high-ranking of Faithfulness constraints did not lead to an agglutinative structure. When abstracting away from individual peculiarities we could put the Icelandic, Faroese, and Norwegian speech communities in their historical development on a continuum from Type 1 to Type 2. The Icelandic speech community represents a community closest to Type 1. The Faroese community has a few more Type 2 characteristics, while the Norwegian speech community has a typical history of a Type 2 community.

As predicted in section 3.4 (cf. Table 3.2), Type 2 characteristics do indeed correspond to 1) a rise of Economy constraints, especially *[Agr] constraints; 2) a reduction of complexities in the lexicon, that is, an optimisation of the lexicon; 3) due to the reductions in the lexicon and the promotion of Econ constraints, optimal candidates
Scandinavian changes from the perspective of Optimality Theory

Comply better to Faith(X) constraints, and 4) PhonMark constraints induce promotion of filter constraints and loss of non-optimal lexical items.

In Old Norse the morphological and phonological orders of constraints were:

**Morphology:** Trans >> Econ
**Phonology:** Mark >> Faith >> Mark

In Icelandic a very small part of the economy constraints have been promoted, while the order remained the same in the phonology:

**Morphology:** Econ₁ >> Trans >> Econ₂
**Phonology:** Mark >> Faith >> Mark

In Standard Faroese various economy constraints were promoted, while the phonological constraint order still remained the same:

**Morphology:** Econ₁ >> Trans₁ >> Econ₂ >> Trans₂ >> Econ₂ >> Trans₃ >> Econ₂ >> Trans₄
**Phonology:** Mark >> Faith >> Mark

In Tórshavn Faroese some more morphological markedness constraints were promoted, and some phonology markedness constraints gained added value:

**Morphology:** Econ₁ >> Trans₁ >> Econ₂ >> Trans₂ >> Econ₂ >> Trans₃ >> Econ₂ >> Trans₄
**Phonology:** Mark >> Mark >> Faith

In Norwegian all economy constraints that deal with person, and number have been promoted above the corresponding Faithfulness constraints, and the lexicon also became more optimised. Phonological markedness constraints gained in prominence.

**Morphology:** Econ₁//Econ₂//Econ₃ >> Trans₁//Trans₂
**Phonology:** Mark >> Mark >> Faith

The ascension of the morphological markedness constraints took place fairly independently from phonological markedness constraints, as apparent from Icelandic and Standard Faroese, where these did not rise at all. In Tórshavn Faroese and Norwegian several promotions of Economy must also have taken place independently from the promotion of markedness constraints like NoQ\textsuperscript{inf,suf}. The constraint *[Pers] has been shown to be effective before NoQ\textsuperscript{inf,suf} was fully operative, cf. section 5.4.2. Furthermore, the relevant changes must have been feature sensitive, that is, the levellings took place on the basis of meaning, because if the levellings had been phonologically induced, the results would have been different (cf. section 5.7.3).

This does not exclude, however, that phonological markedness constraints like NoQ\textsuperscript{inf,suf} have helped Economy become more effective. In Norwegian, the loss of vowel quality in inflectional suffixes led to phonological equality between most indicative and subjunctive forms. This must have facilitated the rising of *[Mood, X] constraints, by reanalysing affixes as being indifferent to mood distinctions. Moreover, in general the phonological similarity between many affixes must have been an ideal situation for reductions on the morphological level to take place. That is, loss of semantic categories
could easily be introduced in the language since this did not lead to severe phonological disturbances.

I have not discussed whether the rise of the Economy constraints could be related to changes in the syntax. Perhaps the more rigid word order, and the more explicit signalling of person and number in obligatory pronouns in modern Scandinavian has made the morphological expression of these categories superfluous. This would be a case of trade-off between morphology and syntax (cf. section 1.4). However, even if the morphological changes occurred after the syntactic changes, this would not be against my hypotheses, since such a change towards more explicit marking in independent words agrees with my theory. Only a complete causation by phonological factors would be problematic, since it is hard to conceive how a better compliance with phonological markedness constraints like NoQ\textsuperscript{inf.suff} could assist the communication situation.

In principle, promotion of the phonological constraints discussed here, NoQ\textsuperscript{inf.suff} and *[μμ][inf.suf] made the morphology more complex for a hearer. These constraints did, however, rise in the period that language hearer directed constraints were valued more highly. This seems to be a contradiction; however, in the period under examination the hearer could already use other devices - pronouns - to track the person and number categories, thereby licensing the promotion of the phonological constraints. This promotion is appreciated by the speaker, and, it also facilitates the promotion of the economy constraints, which eventually simplify the morphology for both hearer and speaker. So, the rise of Economy constraints is embedded in a supportive phonological and syntactic environment. Inflection in Old Norse was already on the verge of collapsing, and dependent on the extent of societal flux, it collapsed to a smaller or larger extent.

Another effect of NoQ\textsuperscript{inf.suff} has been the reduction and merger of the vowel qualities of the suffixes in the various conjugation classes. This has led to a better compliance with Transparency because of class merger. However, there has not been an unequivocal change towards more transparency, since in both Faroese and even Norwegian new verb classes rose again, cf. section 5.5.2.2. Furthermore, allomorphy has been rather persistent in all Scandinavian languages, because although the various strong stem classes shrunk a little, they remained operative.

There are exceptions to the usual rule of universal feature hierarchy as it operates in Scandinavian. The promotion of *[1, Sg] in Icelandic before *[1, Pl] conflicts with the hierarchy. In addition, *[Subj, 1/2Plur] leads to loss of mood distinction, and not of person/number distinction as predicted by the hierarchy. On the other hand the rising of Max(PersPresInd) corroborates the hierarchy.

In other languages like Arabic and Ecuadorian Quechua I explained the loss of fusion by the demotion of a special constraint, Max(Cat), that took account for fused affixes (cf. section 3.3.3.1). In Scandinavian loss of fusion can be explained without reference to this constraint. The loss of fusion in Scandinavian is, more than in the other cases, triggered by phonology and is advanced by the promotion of filter constraints without any general restriction on fusion (like demotion of Max(Cat)).

I conclude this chapter with the observation that the socio-cultural circumstances in Scandinavian have led to a better compliance with Economy constraints, but not to a much better compliance with the NoAllomorphy constraint, which would also have been
conceivable. A reasonable explanation might be that communicative pressure first breaks down expressions of relations between a verb and its environment, that is, it reduces the number of inflectional categories. Such relations are built up by the computational system, and the communicative efficiency of this system depends on the needs of the language user. Allomorphy on the other hand is not so much a matter of sentential relations, but more a matter of the lexicon. While the social situations referred to above affect the way language is processed, and the inventories of inflectional categories, the lexical memory does not seem to be affected. A systematic reduction in allomorphy only occurs in the most extreme situations of language contact, like those under pidginisation and creolisation. Illustrative is the fact that the semi-creole Afrikaans is the only Germanic language which has almost completely done away with strong stem conjugation classes.
6. Quechua

In this chapter I compare several members of the largest indigenous language family (in speaker numbers) in the Americas, Quechua. Quechua is generally considered to be an isolate, although according to Greenberg (1987: 99) it is part of the Andean branch of Amerindian.

Quechua is believed to have originated in Peru, where it has been spoken since at least the fifth century (cf. Cerrón-Palomino 1987). It later split into two distinct varieties, called Quechua I and Quechua II. The Quechua I variety split into several varieties, which I will not discuss here. Quechua IIa split off from Quechua II around 800, when a group of Quechua speakers moved northwards. Cajamarca Quechua, which is relevant to my argument (cf. section 6.3.3.2), is considered to be a Quechua IIa variety. Another split occurred prior to 1500, when traders moved from the Quechua heartland northwards along the coast. These merchants introduced Quechua IIb, as a lingua franca, into northern Peru, Ecuador and parts of Columbia, before these lands became part of the Inca Empire (Torero 1984).

Meanwhile, groups of speakers of Quechua II migrated south-eastward towards Ayacucho and Cuzco. Their varieties became known as Quechua IIc varieties. The fifteenth century saw the rise of the Inca empire, which used a Quechua II variety as its language of administration. Quechua also reached Bolivia and Argentina for the first time in the fifteenth century. After the fall of the Inca Empire Quechua began to consolidate its position in the Andes where it was used as a lingua franca and as the language of evangelisation.

I have chosen varieties of Bolivian, Argentinean, and Ecuadorian Quechua, to compare with older Peruvian varieties, i.e. Ayacucho, Cuzco and Cajamarca Quechua. To be precise, I examine the varieties of Quechua spoken in Cochabamba in Bolivia, Santiago del Estero in Argentina, and Imbabura in Ecuador. Bolivian Quechua was derived from Cuzco Quechua, while Argentinean Quechua has probably been influenced by other Peruvian Quechua varieties, like Ayacucho and Cajamarca Quechua. The differences between these Peruvian Quechua varieties have been taken into account when examining Argentinean Quechua. Ecuadorian Quechua broke away from Quechua II at an earlier time. After the Inca expansion Quechua II as spoken by the Incas became the superstrate variety in Ecuador (Muysken 1977).

In Figure 6.1 I show a tree diagram of the Quechua varieties. This figure is based on Torero (1974), with some additional details in the Quechua IIc sub-branch, based on Adelaar (1994). The relevant varieties are indicated in bold print. Straight lines indicate direct genetic relationships, while dotted lines indicate adstrate influence. Both these labels are of course abstractions from the complex Quechua history which I describe in more detail below.

In the next section, it will become clear that Ecuadorian Quechua developed in a speech community closest to Type 2. Argentinean Quechua emerged in a community with Type

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148 One of the main differences between Quechua I and Quechua II lies in the expression of number. In Quechua II there is a separate affix which is placed after the person markers, while in Quechua I number is expressed by optional derivational affixes behind the verb stem.

149 Inca is sometimes written as ‘Inka’. I consistently spell ‘Inca’.
2 characteristics as well, while the Bolivian Quechua community is closer to a Type 1 community. The speech community of Cuzco Quechua is the most typical Type 1 community of these four.

Figure 6.1 Tree diagram of Quechua varieties

In Table 6.1 I give an overview of the geographical regions and the historical periods in which the various Quechua varieties developed.

<table>
<thead>
<tr>
<th></th>
<th>Early History</th>
<th>Inca Period</th>
<th>Spanish Period</th>
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<tbody>
<tr>
<td>Central Peru</td>
<td>Quechua I</td>
<td>Quechua I</td>
<td>Quechua I</td>
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<tr>
<td>Northern Peru</td>
<td>Quechua Ia</td>
<td>Quechua Ia</td>
<td>Quechua Ia</td>
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<tr>
<td>Southern Peru</td>
<td>Quechua II</td>
<td>Quechua II, Cuzco</td>
<td>(Quechua II) Cuzco Quechua, Ayacucho Quechua</td>
</tr>
<tr>
<td>Bolivia</td>
<td>-</td>
<td>Quechua II</td>
<td>Cuzco Quechua/ Bolivian Quechua</td>
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<tr>
<td>Argentina</td>
<td>-</td>
<td>Quechua II?</td>
<td>Cuzco Quechua/ Argentinian Quechua</td>
</tr>
<tr>
<td>Ecuador</td>
<td>(Quechua IIb)</td>
<td>Quechua IIb, Quechua II</td>
<td>Ecuadorian Quechua</td>
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</table>

First of all, in 6.1, I outline the region’s social history in more detail. This is followed by a discussion, in 6.2, of the verbal inflection of Cuzco Quechua. The developments in Bolivian and Argentinian Quechua are discussed together, in 6.3, while section 6.4 deals
6.1 Social history of Quechua

To a large extent the Quechua varieties have a rather similar history; the Inca Empire shaped and influenced all four varieties, and later the Spanish Empire stretched out over the lands where these were spoken. Their common history is described first, and in the later sections I focus on the differences between the varieties.

6.1.1 Early history

The Quechua area is located in the western part of South America, encompassing modern day Peru, Ecuador, Bolivia, and some parts of Colombia, Chile and Argentina. This region is characterised by the second highest mountain range in the world, the Andes, which stretches out along the western coast of South America. The Andes borders on a small coastal strip in the west, while in the east the Amazon basin stretches out (cf. Figure 6.2).

We have only a limited knowledge of the history of the Andes before the Spanish Conquest and especially of the pre-Inca history of Quechua speaking areas. Written sources date from the Spanish Conquest, and in these accounts earlier history is often treated in mythological terms (Conrad & Demarest 1984: 86). However, by putting together archaeological, linguistic and ethno-historical evidence we can draw the following picture.

The pre-Inca period knew alternating periods of cultural similarity and fragmentation. After an earlier period of fragmentation, between 500 and 1000 CE two cultural realms dominated the middle Andes, that is, Wari and Tiahuanaco. Wari had Ayacucho as its centre, and its influence spread to Cajamarca in northern Peru. Tiahuanaco surrounded Lake Titicaca (Lumbreras 1999: 520ff.). Basic features of the later Inca Empire, like ancestor worship, social stratification and centralisation of power were continuations of these earlier cultures. It is not certain what languages were spoken in Wari and Tiahuanaco. However, probably Quechua varieties were spoken in some parts of the Wari Empire, because the Quechua territory between 500 and 1400 partly overlaps with the Wari Empire. In Tiahuanaco Pukina was probably an important language.

The origin of Quechua lies in the coastal region of central Peru around the modern city of Lima before 500 CE (cf. Cerrón-Palomino 1987: 327ff; Torero 1974, 1998: 603ff.). At that time, in Cuzco and Ayacucho Aymara languages were probably still spoken. The long period of Quechua-Aymara coexistence harmonised these languages fundamentally (Torero 1998: 606), especially the southern Quechua varieties, that would later develop into the Quechua IIc varieties.

After the emergence of Quechua, some varieties, called Quechua II, spread slowly eastward and southward along the coast, while Quechua I moved slowly over the highlands (cf. Torero 1984: 370). The centuries-long expansion of Quechua II may be due to its status as the language of the large temple complex at the Peruvian Coast just south of Lima, Pacha Kamaq (Torero 1974: 79; 1984: 371). For more than a millennium this remained an important centre of worship, both under the Wari and the Inca reign.
The Quechua I varieties did not spread as far from their original location as some Quechua II varieties. Their domain would soon be restricted to the highlands of central Peru. Under Wari domination, some Quechua II speakers moved to northern Peru around 800 CE, where the later Quechua IIa varieties of Cajamarca and Lambayeque arose.

After the fall of the two larger Empires in the first centuries of the second millennium Quechua II kept on expanding slowly further eastward. Again there was a split somewhere before 1500, when Quechua speakers moved northwards along the coast as far as northern Peru, and Ecuador. This variety came known as Quechua IIb. Meanwhile Quechua IIc was spoken to the west of the city of Cuzco, which would soon grow in power as the capital of the Incas.

6.1.2 The Inca Empire

After the fall of Tiahuanaco, there had been no large empire in the southern Peruvian highlands, until the rise of Inca power. The early Inca people lived in the region around Cuzco among several other groups fighting each other. Their society was divided into ‘ayllus’, groups on the village level that sustained each other economically and shared beliefs about a common ancestor. In the Inca culture militancy and courage were appreciated, and it was believed that divine forces, related to the ancestors, were manifest in natural phenomena (cf. Rostworowski & Morris 1999).

In the first half of the fifteenth century the Inca people gained more power in the region, through fighting and intrigues (Conrad & Demarest 1984: 106ff.), and they became associated with nearby ethnic groups, like the Quechua people. The Incas were united by connecting divine powers to a ruler whose power lay on a national level above the village.
level. The ruler resided in Cuzco, and from there the surrounding lands were rapidly subjugated. Pachakuti, who ruled from 1438 until 1471, further transformed Inca society by introducing split inheritance, and an upper class of close associates, the so-called ‘panaqa’. Split inheritance implied that when a ruler died, he was treated as alive, with all his former rights and property still intact, guarded by the panaqa. As a consequence, a new ruler had to conquer lands and possessions for himself and his panaqa from scratch. According to Conrad & Demarest (1984: 122), “…split inheritance emerges as a driving force behind the growth of the Inca Empire.”

New lands were conquered by brute force, coercion and diplomacy. The Incas built new roads and bridges in their newly acquired territories, to enhance communication and mobilisation. They also built storehouses, religious shrines and new administrative centres (Rostworowski & Morris 1999: 771, 799ff., 811). Especially in the later days of the Empire, large numbers of people were mobilised for service. There was an “enormous mit’a workforce, indispensable to the building and running of Tawantinsuyu [Inca Empire, WK]” (Rostworowski & Morris 1999: 821), consisting of retainers on community and state lands, workers in the army, for public works, as postal runners, and last but not least, in the care and upkeep of temples and shrines. Sometimes whole ethnic communities were removed to work somewhere else as mitmaqs.

In the 1530s the Inca Empire faced huge internal problems, such as too large a group of panaqs, local uprisings against the Inca power, and competition for the succession to the throne. Therefore, the Spaniards could easily invade and conquer the Empire.

In the earliest period of the Inca Empire, the Incas’ native language may have been Pukina, or perhaps also an Aymaran variety. In the vicinity of Cuzco, Quechua was used as a first language. Furthermore, in many areas of the Inca Empire, Quechua probably was already in use as a lingua franca. Although we have no direct evidence of an earlier lingua franca status, the wide and rapid adoption of Quechua as a first and second language under the Incas corroborates this hypothesis. Quechua was also a language of worship, because of the influence of Pacha Kamaq. Under the reign of Huáyna Capac, who ruled from 1493 until 1525, it was decided that Quechua should become the official lingua franca for the whole Inca Empire. The variety of Quechua that was used by the Incas was probably a Quechua IIb variety (Adelaar, pers.comm.). Torero (1974: 141) says:

“The extent of its [Quechua, WK] spread was such that -according to the chronicler fray Martín de Morúa - the king, Huáyna Cápac, thought it necessary to adopt it as the language of the Cuzco Empire; the language it replaced was -after having served as imperial idiom during the reign of Pachacáteq and Túpac Yupanqui- without doubt, Aymara, the other great “general language”, and until today the second in importance among the indigenous Andean idioms.”

150 “El grado alcanzado por su expansión era tal que, según el cronista fray Martín de Morúa, el Inca, Huáyna Cápac se vio en la necesidad de adoptarlo como lengua del Imperio cuzqueño; la lengua desplazada en esta función, después de haber servido como idioma imperial durante los reinados de Pachacáteq y Túpac Yupanqui, fue sin duda el Aymara, la otra gran “lengua general”, hasta hoy la segunda en importancia entre los idiomas indígenas andinos.”
Probably the Incas continued using their original language as well, perhaps as some kind of “secret language” (cf. Cerrón-Palomino 1987: 335).151

The Quechua variety that later became known as Cuzco Quechua differs from other Quechua IIc varieties like Ayacucho Quechua especially in its phonology. That is, Cuzco Quechua has three series of plosives, ‘normal’, affricates, and glottalised, instead of only one as in most other Quechua varieties. This may well reflect the influence of Aymaran phonology. Cuzco Quechua also borrowed many words from Aymara. In addition, there are small differences between Cuzco and Ayacucho Quechua inflectional morphology which are dealt with below.

This all meant that there were various kinds of Quechua at the time. Firstly, Quechua varieties, like Tarma and Huanca Quechua spoken in ethnic communities by native Quechua speakers. All Quechua I varieties are of this type. Secondly, Quechua varieties already used as lingua franca before the emergence of the Inca Empire. Thirdly, a form of Quechua II which was used in Inca administration and as a lingua franca in the Inca Empire.

Inca state employees were obliged to learn Quechua in special schools, and they were encouraged to spread Quechua among their native peoples (cf. Gugenberger 1995: 149). The kind of language policy of the Incas is unclear. According to some sources (cf. Spalding 1999) other languages and cultures were not repressed. Instead, the Inca encouraged linguistic diversity. Since the Incas themselves were used to a situation of multilingualism, it is unlikely they would have considered language diversity a threat to their rule. Spalding (1999: 923) says: “The Inca maintained and perhaps even promoted cultural and linguistic diversity among the various societies that were included in Tawantinsuyu [Inca Empire, WK].” However, according to Adelaar (pers.comm.) these conclusions are doubtful, and it is more likely that language diversity in the Andes at the time was in spite of instead of due to Inca language policy.

In conclusion, while in several parts of Peru and Ecuador Quechua was already known before the expansion of the Inca Empire, Quechua spread to Bolivia, Argentina and Chile under the Incas. It was learned in special schools, in ethnic interactions and in official Inca religious and administrative transactions. Rostworowski & Morris say (1999: 809): “At places like Huánuco Pampa [one of the major administrative and religious Inca centres, WK], speeches and songs in honor of Inca and native lords were almost certainly heard in ‘the language of the Inca’ but also in the Quechua and non-Quechua languages of the peoples.”

In the next section I will outline what happened to the various Quechua varieties in Peru, Ecuador, Bolivia and Argentina after the Conquest by the Spaniards.

6.1.3 After the Spanish Conquest

After the Conquest the status of Quechua changed. Initially the Spanish government promoted Quechua, but later in the 18th century Quechua was frowned upon, associated with backwardness and its very existence came under threat. I will now sketch how Quechua survived in the Andes, despite this onslaught.

151 This suggests some similarity with colonial language policy in, e.g. Tanzania by the Germans; Swahili was spread by the Germans in their African Empire, while German itself was only used between Germans, and not with Africans.
Spanish colonists, led by Pizarro, invaded the unstable Inca Empire in northern Peru in 1532. By a combination of successful military techniques, intrigues, and sheer luck, their grip on the Andes became stronger, until finally in the second half of the 16th century the Spanish crown took full control (Bakewell 1997: 112). An hierarchical structure was set up consisting of administrative regions, in which the later state borders became visible.

After the Conquest, because of epidemic diseases, wars, famine and exploitation the Andes population decreased by about 70% in the highlands and 96% in some coastal areas (Spalding 1999: 932). Bakewell (1997: 151) comments: “It is arguable that nothing has marked the social history, indeed the entire history, of Middle and South America since 1492 more than the enormous loss of native population that followed the Europeans’ arrival.” The population of, for instance, Peru before 1492 is estimated to lie between 4 and 15 million, in 1570, 1.3 million, and in 1620 0.7 million, decreasing even further later on. The decline concurred with huge migration streams and local population increases. Saignes says (1999: 92): “…the valleys of Cochabamba doubled their population, with an 83 percent immigrant boom.”

Initially the Spanish controlled the Andes through Andean intermediaries; original Andean social and economic structures were preserved, and the Spaniards were not directly involved in labour organisation and production, as long as they could extract enough tribute (Saignes 1999: 66ff.). From the 16th until the 18th century the native Andean nobility, the ‘caciques’, formed an intermediary class between the indigenous work-force, and the Spanish powers.

Nevertheless, the Spaniards deeply affected Andean society. They forced natives to resettle in so-called ‘reducciones’ (Saignes 1999: 89), and in towns with an emerging mining industry, especially in Bolivia. The social and demographic changes led to continuing migration on a large scale. Saignes (1999: 88) remarks:

“…early colonial Peru was a society taking to the roads. Massive numbers of individuals and households “disappeared” from administrative view as they sought opportunity, or simply a way to dodge levies, in far-off cities, estates, mines, textile mills, and villages…The results amounted to a massive replacement; at the end of the 17th century, ‘outsiders’ made up 80 percent of some Andean towns.”

While the Spanish colonists exploited the Andean people as much as possible, the Spanish crown wanted to protect them from immediate extinction. Laws to protect the Indians were introduced, and the reducciones mentioned above were meant to protect them from uncontrolled exploitation by the Spanish colonists. The Spanish Crown also tried to protect Quechua, although the domains in which Quechua was used shrank progressively. For religious and local affairs, it was considered appropriate to speak Quechua, while on other levels, such as trade and administration, Spanish began to dominate.

State and church policy were connected (Bakewell 1987: 129), and the church wanted to win the soul of the Andeans for Christianity (Gugenberger 1995: 154). Therefore, they learned Quechua, in order to proselytise and civlilise the Andeans. By these efforts early Quechua grammars were made, often based on several Quechua varieties, probably resembling the Quechua II variety that the Incas used (Adelaar, pers.comm.). In this way the missionaries played a role in promoting a form of standard Quechua (cf. Saignes 1999: 114). In the second half of the 17th century the Cuzco Quechua variety became more important.
In the 18th century the government and the church changed their attitude towards Quechua. They stressed that all people in the Spanish Empire should be united by one language, Spanish, so that Christianity and the cultural norms of Spanish civilisation could be promoted (Gugenberger 1995: 159). In the second half of the 18th century several indigenous rebellions took place in the Andean region, who used the ancient symbols of the Inca period (Bakewell 1997: 282ff.). After these rebellions, the Spanish repression of the Quechua language and culture became more severe, and Quechua was no longer used as an instrument for evangelisation.

Around 1800, European liberal ideologies came to the fore. After liberalisation in Spain itself, all South American countries became independent from Spain in the 1810s and 1820s. In practice, this worsened the position of the Andean indigenous people even more. In the name of equality and progress, laws that protected the indigenous Andeans were abolished, and communal land ownership was no longer acknowledged. For instance, the laws of the Civil Code in 1852 in Peru “marked the beginning of the republic’s sustained assault on Indian communities” (Larson 1999: 623). The centre of power moved to the commercial centres at the coast, while inland landowners exploited the indigenous people for land labour, and the independent Andean villages were transformed by early capitalism and market dictates. Moreover, the Andeans were purposely kept isolated from liberal thought and education (Larson 1999: 629). Because southern Peru was more isolated, Quechua survived on a wider scale in the south than in the north.

In the 19th century the dominant position of Spanish culture and language was justified in social-Darwinist discourse (Bakewell 1997: 421ff.). Quechua was now firmly linked to backwardness and poverty. The earlier Spaniards had extirpated Quechua in the name of hispanisation, while the new nations simply did the same in the name of progress. In the 20th century in some ideologies, like Marxism, the repressed position of the Andean population was acknowledged, and towards the end of the century the situation for Quechua improved a little in the Andean nations. However, owing to better communication and more mobility Spanish gained more ground in the Quechua communities. Today in all Andean nations most spheres associated with modernity, like mass media and education are in Spanish, while Quechua is considered to be a language in which social and economic progress is difficult. Today, in 2002, Quechua has at most between 7 and 8 million speakers (Adelaar, pers.comm.).

6.1.3.1 Peruvian Quechua

In the first decades after the Conquest, Quechua remained in use as the lingua franca in southern Peru. It was used among Andean migrants, working for the Spaniards or for local indigenous lords, and it was used as the church language. Later Spanish became more important.

Today, in spite of centuries of repression of the Andean culture, substitution of Quechua by Spanish, and extensive migrations and depopulations, Quechua is still widely spoken, and the complex morphology of varieties like Cuzco and Ayacucho Quechua has

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152 Bakewell (1997: 233) remarks about the situation of Cuzco: “By 1690 almost half the population of the bishopric of Cuzco, covering much of southern highland Peru, consisted of forasteros Indians who had left their places of origin for other native villages, estates, or larger towns.”
not essentially changed. This conservatism may be a reaction of the Quechua speakers to outside pressure exerted on their culture and language. Phonological and lexical changes, however, did take place under and after the Inca period (cf. Stark 1985c: 533). Another factor for the preservation of inflection may be the stability on the household level. Saignes (1999: 106) says: “Ancestor worship, the cult of sacred places, and ritual and marital exchanges respecting old lines of consanguineal kinship all persisted…ayllus were able to defend their territorial integrity and protect the reproduction of their community.” In addition, while in earlier days migration took place in several directions, today the main movement is out of the Cuzco area towards the larger cities, especially Lima (cf. Mannheim 1985: 486), which suggests less influence from other regions on Cuzco Quechua.

Another factor for conservatism in Cuzco Quechua is that Cuzco Quechua became the prestige language for the class of Andean nobles, the caciques (see above). They started to use Cuzco Quechua in numerous written works of drama, poetry, religion and journals, and, in Larson’s words (1999: 656): “by invoking the region’s Inka heritage, Cuzco’s cultural vanguard projected a noble ‘Quechua race’ of Indians onto the national imagery.” In spite of later Spanish repressions, the circle of Quechua proponents has remained strong around Cuzco and its variety, Cuzco Quechua (cf. Mannheim 1991: 115). Today, Cuzco Quechua is considered to be the most important Quechua variety by its speakers (Gugenberger 1995: 184). Mannheim (1985: 503) says: “The continued viability of Southern Peruvian Quechua, then, is not only a case of ‘language loyalty’ in the limited sense of this expression, but reflects a comprehensive loyalty to a way of life with an exclusionary view of social interaction.” It is supported by a language academy in Cuzco, and it is associated with an indigenous upper class which considers itself as bearers of the Inca tradition, in contrast with the more agricultural Ayacucho Quechua.

On the other hand, no attempt to give Quechua a status equal to Spanish was made before the 1970s. A census in 1972 confirmed that, out of a Peruvian population of 11,790,000, 25.9% of the people were Quechua speakers, and 11.4% were monolingual Quechua speakers (cf. Mannheim 1985: 485ff; von Gleich 1982: 27). In the district of Cuzco, Quechua was spoken by 81%, and in the district of Ayacucho the figure rose to 90%. Today, Quechua is limited to private use. For all public functions, the mass media and general administration, Spanish is commonly used. Most recent data show that there are hardly more than 3,500,000 speakers of Quechua in Peru which means that not only the relative but also the absolute number of Quechua speakers has decreased, in contrast with earlier years (Adelaar, pers.comm.).

Standardisation of Quechua is more difficult in Peru than in the other Andean countries, since there is far more diversity in Peru, thanks to the Quechua I varieties.

Unlike Ayacucho Quechua, Cuzco Quechua was strongly influenced by Aymara, especially in its lexicon and phonology. While Cuzco Quechua became a second language for many speakers in Argentina and Bolivia (see below), in southern Peru, however, there was a more continuous chain of L1 transmission of Cuzco Quechua.

Between Ayacucho and Cuzco Quechua there is some variation. According to Mannheim (1991) Cuzco Quechua was not preferred above other Quechua varieties or other languages in Peru before the Conquest. Until the 17th century the Spaniards used a partly artificial non-Cuzco variety of Quechua, and Cuzco still did not seem to be a prestige variety. Later its status increased among Quechua noblemen, because it was associated
with the Inca heritage. Today the average Quechua speaker considers Cuzco Quechua to be a more valuable language than Ayacucho Quechua.

6.1.3.2 Bolivian Quechua

It is commonly agreed that Quechua reached Bolivia for the first time under the Incas (cf. Stark 1985c: 530; Van de Kerke 1996a: 1), while other languages, like Aymara and Pukina, remained in use as native languages in Bolivia during this period. In fact, in a large area in the higher Andes, Aymara is still spoken today, and, in some areas in Bolivia, it is even expanding at the expense of Quechua. Under the Incas probably several languages were learned as second languages, among them Quechua. Its acquisition was probably directed and stimulated by the large amount of mit’a workers, many of whom must have spoken Quechua.

Quechua was established and expanded in Bolivia after the fall of the Inca Empire for two reasons. First of all, a variety of Quechua - probably a Quechua IIb variety - was used in the Catholic Church as an instrument for the spread of the Christian faith between the 16th and the end of the 18th century. Secondly, during Spanish rule speakers of Quechua and other indigenous languages from various parts of the Andes were sent to Bolivia to work, especially in the mines of Potosi and Oruro, probably to an even greater extent than when under the Incas. Many towns were newly founded by the Spaniards, like Cochabamba, - whose particular Quechua variety is under scrutiny here - which attracted 83 percent of immigrants in the first decades after the Spanish Conquest. Towns, like the mining cities of Potosi and Oruro, were also buzzing centres of activity and trade (Saignes 1999: 95). In these towns, Quechua became the most important language, and since it was supported by the church as well, it slowly became established in more and more areas of Bolivia. It eventually expanded to parts of the Aymara heartland and to the Amazon lowland. Today Aymara is associated with villages and Quechua with small towns (Muysken, pers.comm.).

Bolivian Quechua was shaped when Aymara speakers adopted Quechua from Inca and Spanish rulers and from Quechua migrants. Several Quechua varieties play a role in the emergence of Bolivian Quechua. Under the Incas it was the ‘lengua general’, that was used, while in the first years of Spanish rule the Spaniards used a partly artificial Quechua (see above). The Quechua migrants spoke several varieties, but the most dominant, however, was Cuzco Quechua. Another factor underlying the rise of Bolivian Quechua was the separation of the Bolivian people from the Quechua heartland by a large area where only Aymara was spoken.

There are some minor differences between Bolivian Quechua varieties. In the district of Cochabamba the urban variety differs from the rural variety, while these two dialects differ from Quechua as spoken in Potosi (cf. Lakämper & Wunderlich 1998: 139). Furthermore, Northern and Southern Bolivian Quechua differ as well (cf. Cerrón-Palomino 1987: 244). Variation is found, not only in the lexicon and the phonology, but also in the verbal inflection (cf. section 6.3.1).

Cochabamba Quechua has no written literary tradition, and neither does it have a language academy, directed towards some kind of older norm, as in Cuzco. Nevertheless, Bolivian Quechua has probably had quite some prestige over the years. During the rebellions of the late 18th century, the language and history of the Quechua speakers was invoked and Quechua rebellion was clearly separate from Aymara rebellion (cf.}
Social history of Quechua

Bakewell 1987: 281). Before 1800 it probably had also some prestige as the language of evangelisation, in contrast with smaller Andean and Amazonian languages.

Today the more educated speakers appreciate Quechua, and encourage the recitation and writing of Quechua poetry and prose. In Cochabamba Quechua is also associated with peasant organisations and workers organisations, and it plays a role in self-identity. Stark (1985c: 538) remarks that the prestige of a Quechua speaker rises when she uses a high “degree of suffix density”.

According to Albó (1995: 19) there are 2,194,100 speakers of Quechua in Bolivia, which is about 25% of the total population. As in the other Quechua varieties, the most important influences brought to bear upon the language, are from Spanish, and most speakers are bilingual; this is most notable in the lexicon. The city of Cochabamba is rapidly growing and counts approximately 800,000 inhabitants today (cf. World Gazetteer Report 2002).

6.1.3.3 Argentinean Quechua

In Argentina Quechua is spoken in two regions in the north. In the northern province of Jujuy, close to the Bolivian border Quechua was spoken but is nearly extinct today. The variety I consider here is spoken a few hundred kilometres to the south, in Santiago del Estero, by about 60,000 people (Grimes 2002).

Not much is known about the history of Argentinean Quechua. It remains a matter of conjecture as to whether it was even used during the Inca Empire. It is agreed that the Inca empire and its Quechua lingua franca stretched out over the Andean area of western Argentina and northern Chile. However, whether there had been Inca settlements as far east, and at such low altitudes as Santiago del Estero remains disputed.

According to Stark (1985b) the Incas must have brought Quechua to the area of Santiago del Estero. She argues that archaeological and ethno-historical evidence indicate that there were Inca roads and buildings in what is today Santiago del Estero (Stark 1985b: 734ff.). Bravo (1989: 129ff.) suggests that lack of archaeological remains indicates that the Incas only passed north eastern Argentina on their way to Chile, and that they did not settle in the region of Santiago del Estero.

The Argentinean Quechua variety itself gives no clear indication of exactly when and by whom Quechua was brought to Argentina. On the one hand, the lack of aspirated and glottalised plosives in Argentinean Quechua in contrast with the presence of them in Cuzco Quechua, might suggest that Cuzco Quechua is less involved in the emergence of Argentinean Quechua. However, the lack of glottalisation and aspiration could also be the result of the same simplification process as is apparent from inflectional morphology (cf. also the discussion in Cerrón-Palomino 1987: 345ff.).

After the conquest by the Spaniards Quechua played an important role as the lingua franca in the area. In 1542 an expedition starting from Cuzco, under the direction of the Spaniards, conquered north eastern Argentina, and it was absorbed into the Spanish Empire.

Soon, the Spaniards applied the same resettlement policy for the native population as elsewhere. Quechua speakers from the Andes, and local smaller ethnic groups of speakers of several languages like Lule, Diaguita and Comechingone were forced to live
in so-called ‘encomiendas’, so as to be easily accessible for Spanish taxation and exploitation (cf. Stark 1985b: 738).

In these settlements Quechua not only became the lingua franca between Quechua speakers and other groups, but also between the native ethnic groups themselves, and soon Spaniards used Quechua as well. After the Spanish Conquest in Argentina the indigenous people suffered from the exploitation in the mines and on the fields, and especially from epidemic diseases. In Argentina, like in other parts of the Andes (see above), the native population rapidly declined, especially among the most severely exploited and weakest local ethnic groups. Quechua could spread more easily among these local ethnic groups due to the breakdown of their social and cultural fabric (Stark 1985b: 740).

As in Bolivia and other regions of the Andes, the adoption of Quechua was promoted even further by its use in church and missionary activities. Bravo (1989: 141) remarks: “All our findings permit us to sustain that the Quechua language entered Santiago del Estero with the Spanish invasion, diffused with the Conquest, and consolidated during the colony with the persistent baptising action by the Christian evangelists…”153 The 16th, and especially the 17th and 18th centuries must be the heydays of Quechua in Argentina, and after the defeat of the indigenous groups of the Diaguita’s around 1660 it was probably spoken in a wide region, from Santiago to the Bolivian and Chilean border.

By the end of the Colonial period other smaller Indian languages besides Quechua had been lost (Cerrón-Palomino 1987: 71), and Quechua was adopted by the local ‘criollos’ from mixed Spanish-Indian descent. In other Spanish colonial towns Quechua was not learned by the Spaniards. In Santiago del Estero, however, they were too small a minority amidst numerous Quechua speakers to stick to Spanish alone. Moreover, Santiago was rather isolated from the rest of the Spanish-speaking world, and the Spaniards became mixed with the native population.

At the end of the 18th century, Indian culture was considered backward and anti-modern, and it was strongly discouraged by the Spaniards (cf. section 6.1.3). Instead, Spanish values and language were promoted. By the 19th and 20th centuries this policy had reduced the area where Quechua was spoken to the city of Santiago del Estero and surroundings. In that area, however, Quechua remained viable. Santiago had turned into a city mainly inhabited by criollos, who spoke Quechua but did not associate the language with other indigenous or Inca values, as in other Andean countries. According to Bravo (1989: 173) Quechua is not correlated with any particular kind of social or cultural identity: “The Quechua-Castillian bilingualism of Santiago del Estero is a purely linguistic problem without any correlation in the anthropo-socio-cultural state of the population…The human type of the people of Santiago is colonial creole in the whole province.”154 More recently, Santiago has become closely linked to the modern Latin-American world, and today Quechua is spoken mainly by the lower classes and farmers. As a result it is less prestigious than Spanish.

153 “Todas nuestras constancias nos permiten sostener que la lengua quichua entró en Santiago del Estero con la invasión española, se difundió con la conquista y se consolidó durante la colonia con la tesonera acción catequizadora de los evangelizadores cristianos…”

154 “El bilingüismo quichua-castellano de Santiago del Estero es un problema puramente lingüístico sin incidencia alguna en el estado antropo-socio-cultural de la población…El tipo humano de la población santiagueña es el criollo colonial en toda la provincia.”
Today more attention is paid to its preservation; it is taught at the university of Santiago del Estero, promoted in local schools and used in radio and newspapers. At present only a small minority speak Quechua; out of the 806,000 inhabitants of the province of Santiago only 7.4% speak Quechua (World Gazetteer Report 2002).

In summary, it is possible that Quechua first came to Argentina under Inca rule. Its further spread and consolidation took place, however, under the Spaniards. In comparison with the spread of Quechua in Bolivia, the Quechua language easily and quickly assimilated in Santiago del Estero. In north Argentina there were probably relatively many Quechua speakers and fewer non-Quechua speakers. Moreover, the non-Quechua speakers -Spaniards, and various ethnic groups- were more fragmented than the Aymara speaking population in Bolivia.

The heterogeneity of speakers who transmitted Quechua must have been higher than in Peru or Bolivia. First and second language speakers of Quechua, Andean migrant workers from diverse Quechua varieties and other Andean languages, Spanish colonists and Spanish priests were all involved in the further spread and development of Quechua in northern Argentina. Therefore, the model of what was “proper Quechua” was less circumscribed than in Bolivia. It was a mix of different native, koineised and second language varieties of Quechua. In section 6.3 I show how the influence of Quechua varieties from Cuzco, Ayacucho, Cajamarca and Bolivia is visible in the inflection in Argentinean Quechua.

In Santiago del Estero itself there is no known dialect variation. During the settlement and harmonisation of Quechua between the 16th and 18th centuries there probably was variation in the level of competence in Quechua.

Like Bolivian Quechua, Argentinean Quechua does not have a written literary tradition. Quechua had probably more prestige than local Indian languages in the 16th until 18th centuries, since it was used as an instrument of evangelisation. More recently, Quechua is used in the media and studied at the university of Santiago del Estero. Like most Quechua varieties, Argentinean Quechua has less status than Spanish.

6.1.3.4 Ecuadorian Quechua

Traditionally all Quechua varieties were thought to be derived from Cuzco Quechua, and spread through Inca conquest. However, Torero (1964) and Parker (1963) have shown that Cuzco Quechua was not the oldest Quechua variety, and that Quechua was not only spread by the Incas.

Quechua was probably already spoken in Ecuador before the Inca Conquest (cf. Cerrón-Palomino 1987: 343). Indications of the early introduction of Quechua are, first, the irregular correspondence between aspirated stops in Ecuadorian and Cuzco Quechua. This suggests that the relation of Ecuadorian with Cuzco Quechua was one of adstrate rather than direct ancestry. Secondly, there are Spanish sources that refer to the existence of Quechua in Ecuador before the Incas arrived. Assuming early Quechua in Ecuador, the question remains how it spread there. Stark (1985a) suggests that Quechua originates from the Ecuadorian lowlands. However, this idea is rejected by most Quechua specialists in favour of theories that emphasise early contacts between Peruvian traders and Ecuador (cf. Cerrón-Palomino 1987: 338ff; Hartmann 1979; Muysken 1977; Torero 1984).
Torero (1984) argues that from the first centuries of the 2nd millennium until the late 19th century, there were intensive contacts between Ecuador and coastal and highland Peru. The earliest of these contacts would have taken place from the Peruvian coastal Chincha region, 185 km south of Lima. In that early period Quechua II branched out and moved eastwards, while Quechua IIb was spread to Ecuador by traders. Torero (1984: 372) says:

“It can be postulated, then, that, apart from its area of full presence along the central and southern coast of Peru and in the contiguous highlands to the east, Chinchay Quechua began to penetrate into more distant regions as a vernacular language, adopted by the nobility and the traders interested in interregional Andean trade, and it would have been respected because of the economic power of Chincha and the religious and political influence of Pachacamac.”

Therefore, as is also reported in Spanish sources, the Incas met speakers of Quechua in Ecuador, and they imposed their own form as an adstrate or superstrate. The Inca occupation meant that, in addition to the Inca Quechua variety, other Quechua and non-Quechua languages came to Ecuador. The Inca soldiers and the mitmaq, which were forced settlers, spoke Aymara, Quechua IIC varieties like Cuzco Quechua, and also Pukina, Quechua IIa and Quechua I varieties (Torero 1984: 378). After the Spaniards had conquered Ecuador, many of these Andean immigrants in Ecuador stayed, and they may have influenced the development of Quechua.

Today Quechua has about 1.5 million speakers in Ecuador, while the second largest indigenous language, Shuar, has only 30,000 (Grimes 2002). However, in the 16th century, after the Spanish conquest, Quechua was not yet so dominant. Several sources mention that Quechua was even on the decline in the 16th century (Adelaar, pers.comm.). Although Quechua was used by Spanish missionaries, it is unlikely that the spread of Quechua was only due to missionary activities. Moreover, the Spanish church also employed other languages in addition to Quechua.

Probably other social processes have had a greater role in the spread of Quechua. Large parts of the native population died at the end of the Inca period due to the civil war between Inca factions, and this depopulation continued after the Spanish conquest; in the Quito region even about 90% (cf. Powers 1995: 17). In addition, the Spaniards had a tremendous impact on the social and economic reality of the Andean population. Muysken (1977: 31ff. and pers.comm.) suggests that the Andeans reacted to their new circumstances by creating a new identity, which was no longer associated with a local small ethnic group, but instead, to a larger indigenous ‘runa’ caste whose speech became Quechua. While before the Spanish conquest Quechua was spoken only by some traders and by the higher classes involved in Inca administration, after the Conquest it became the emblem of Andean non-Spanish identity. During the demographic, political and social changes between the 15th and 18th centuries Quechua spread increasingly in this new role over the Andean highlands of Ecuador at the expense of other indigenous languages, many of which may have been Barbacoan.

155 “Puede postularse, entonces, que, aparte de su área de pleno dominio en la costa peruana central y sur y la serrania contigua a ésta, el Quechua chinchay empezó a penetrar en regiones muy distantes como lengua de relación adoptada por los señores y los mercaderes interesados en el comercio interregional andino y respaldada por el poder económico de Chincha y el ascendiente religioso y político de Pachacámac.”
In comparison with the Inca period the use of Quechua increased after the Spanish conquest. While it is unlikely that the Incas dominated lowland territory east of the Ecuadorian Andes, Quechua later spread to this tropical forest zone. Quechua reached the lowlands by a combination of factors (cf. Muysken 2000: 976ff.). Traders, refugees from Spanish colonisation and Spanish missionaries all came down from the highlands to the lowlands, where they made Quechua more popular. However, according to Muysken (2000: 978) it is mainly due to demographic changes in the lowlands themselves that Quechua was adopted as a native language. Groups of forest dwellers and nomads like the Záparos and Waorani, had declined in number and switched to Quechua, thus reintegrating into new communities. In fact, this Quechua dialect which spread to the lowlands is rather similar to the Quechua which spread to the highlands. In both cases, population decline and social and economic changes facilitated the spread of Quechua because of its association with indigenous identity.

Today, as in other Andean countries, use of Ecuadorian Quechua is more accepted and in 1992 a law was introduced that guaranteed education in one’s native language. Standardisation of Ecuadorian Quechua presents less problems than in Peru, though the Ecuadorian writing system deviates from those of Bolivia and Peru.

In summary, Quechua was first adopted in Ecuador as a trade language. How many of the traders spoke Quechua as a native language, and to what extent Quechua was used between non-native Quechua speakers remains unknown. The second Quechua wave came through the Inca expansion, because of which Inca Quechua spread over the first layer of Quechua IIb speakers, and gained new L2 speakers. After an initial decrease due to the decline in population during and after the Inca civil war Quechua began to extend its domain as the indigenous lingua franca that expressed Andean identity. Probably only in the 18th century did Quechua-isation reach its peak. In contrast with Bolivia the native languages of the new Quechua speakers in Ecuador were not structurally similar to Quechua.

6.1.4 Summary and conclusion

We expect early koinéisation and simplification in Cuzco and Ayacucho varieties, because of the common histories of migration and population changes. In comparison with the other Quechua varieties under discussion, we expect less inflectional change in Ayacucho and Cuzco Quechua, since these have not been adopted as a second language by large groups of L2 learners. Cuzco Quechua has enjoyed greater popularity than Ayacucho Quechua during the last centuries, and we expect, therefore, less changes and a stricter norm.156 The Bolivian Quechua speech community has more Type 2 characteristics than the Cuzco Quechua one, since Bolivian Quechua was learned as a second language by Aymaran speakers who possibly did not have full access to the native variety of Cuzco Quechua. Moreover, the ancient glorious past of the Inca Empire is less a source of conservatism in Bolivia than in Cuzco.

The L2 acquisition process must have been relatively rapid in Argentina. Moreover, there have been mutual influences between Quechua varieties because of the interaction

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156 One of the linguistic consequences of this prestige is that for a long time Cuzco Quechua has automatically been assumed to be the oldest Quechua variety, from which all other varieties would only be deviations, or, ‘corruptions’ (cf. Cerron-Palomino 1987: 243).
between Quechua speakers from different descent, and migrations of workers from and to the mines in northern Argentina and Bolivia. Quechua has had no special prestige over the centuries, and during the last two hundred years its popularity has declined in Argentina. The Argentinean Quechua speech community has, therefore, been historically closer to a Type 2 community than those in Bolivia and Peru. In the early days of Ecuadorian Quechua, there may have been internal variation in Quechua, because Quechua was learned by Andeans of different backgrounds, and different varieties of Quechua were in use. In pre-Inca times, Quechua was learned as a practical communication tool in trade relations. Under the Incas it was still in use as a lingua franca, but it was also associated with the ruling Empire. Under the Spaniards it became the marker of Andean identity. Among the Quechua communities discussed here, the Ecuadorian one displays most traits of a Type 2 speech community.

In Table 6.2 I summarise and compare the four Quechua varieties with respect to the social factors relevant here.

<table>
<thead>
<tr>
<th>Table 6.2 Social factors distinguishing Quechua speech communities</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
<tr>
<td>Source language</td>
</tr>
<tr>
<td>Split from the original language since ¹⁵⁷</td>
</tr>
<tr>
<td>Reason of spread</td>
</tr>
<tr>
<td>Speed of spread</td>
</tr>
<tr>
<td>Adjacent to the region of the source language?</td>
</tr>
<tr>
<td>Kind of learners during the first contact period</td>
</tr>
<tr>
<td>Substrates/adstrates</td>
</tr>
</tbody>
</table>

¹⁵⁷ This label may seem artificial. However, I have introduced it to indicate roughly how much time had passed since the change began.
### 6.2 Cuzco and Ayacucho Quechua

#### 6.2.1 Data

Quechua is a highly synthetic and agglutinative language. That is, the number of categories comprised in a word is high, while the number of semantic categories expressed in each affix is low. Categories like causative, benefactive, and reciprocal belong to derivation (cf. Cerrón-Palomino 1987: 280ff.) and are expressed closer to the root of the verb than the inflectional categories.

The inflectional categories of the verb in Quechua on which I focus are tense, subject agreement, object agreement and number. The category of number remains restricted to Quechua II varieties. Quechua I, and other languages in the region, like Aymara do not have an inflectional number category. Other categories such as modality and aspect will not be considered here. Aspectual notions are expressed in derivational morphology in

| Status of | Cuzco | Bolivian | Argentinean | Ecuadorean |
| Amount of contact between Quechua and other languages after the split | Much (Spanish) | Much (Spanish, Aymara) | Much (Spanish, and decreasingly, non-Aymara) | much (Spanish, and decreasingly, non-Aymara) |
| Reason of this contact | Colonisation | Colonisation/ co-habitation | Colonisation/ co-habitation | Colonisation/ co-habitation |
| Time scale of this contact | About 500 years | About 500 years | About 500 years | About 500 years |
| Extent and nature of the influence of second language learners | Low, similar substrate | High, similar substrate, imperfect learning | High, various substrates, imperfect learning | High, various substrates, imperfect learning |
| Evaluation by the new speakers of Quechua during the contact period | Neutral | High | Neutral | Neutral |
| Kind of network structure for the language | tight | tight | loose | loose |
Quechua, while modality is expressed in verb-final particles or clitics. Cerrón-Palomino (1987) also discusses the categories of conditionality, subordination and imperativeness under the heading of inflection. I omit these for the sake of brevity and because the most relevant differences between the varieties I discuss lie in person and number agreement.

The general order in verbal inflectional morphology in all Quechua II varieties is (Der stands for derivational affixes):

Verb - Der - Obj - Tense - Sub - Num - Mood.

Example (1) is a Cuzco Quechua verb containing all the categories I discuss here (Cusihuaman 1976: 169).

(1) Yanapa- wa- rqa-nki-ku.
   help- 1ST- PAST- 2ND- PL(EXCL)
   ‘You have helped us (excl.).’

Below we see that the various Quechua varieties deviate in different ways from this order. Some categories appear in fused forms, sometimes the order itself deviates, and sometimes the meaning of the affixes is dependent on the meaning of other affixes.


In Table 6.3 I show the inflectional systems of Cuzco and Ayacucho Quechua. Each column refers to a different object, and each row to a different subject. The endings which these different subject-object combinations display are spelled out in the cells. The forms that differ morphologically in Cuzco and Ayacucho Quechua are in bold italics. There are also some slight phonological differences between Cuzco and Ayacucho Quechua, which I do not discuss. When there are phonological differences, I give the Cuzco phonological forms.

Table 6.3 Cuzco and Ayacucho Quechua verb inflection
C=Cuzco Quechua; A=Ayacucho Quechua
Present tense

<table>
<thead>
<tr>
<th></th>
<th>1 sing obj</th>
<th>2 sing</th>
<th>1 plur.inc</th>
<th>1 plur.exc</th>
<th>2 plur.</th>
<th>3/no obj.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 sg  sub</td>
<td>*</td>
<td>-yki</td>
<td>*</td>
<td>*</td>
<td>-yki-cis</td>
<td>-ni</td>
</tr>
<tr>
<td>2 sg</td>
<td>-wa-nki</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>-wa-nki-ku</td>
<td>*</td>
</tr>
<tr>
<td>3 sg</td>
<td>-wa-n</td>
<td>-sunki</td>
<td>-wa-n-cis</td>
<td>-wa-n-ku</td>
<td>-sunki-cis</td>
<td>-n</td>
</tr>
<tr>
<td>1 pl. inc</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>-yki-ku</td>
<td>C: -y-ku</td>
</tr>
<tr>
<td>1 pl. exc</td>
<td>*</td>
<td>-yki-ku</td>
<td>*</td>
<td>*</td>
<td>-yki-ku</td>
<td>A: -ni-ku</td>
</tr>
<tr>
<td>2 pl</td>
<td>-wa-n-cis</td>
<td>*</td>
<td>*</td>
<td>-yki-ku</td>
<td>C: -y-ku</td>
<td>A: -ni-ku</td>
</tr>
<tr>
<td>3 pl</td>
<td>C: -na-ku</td>
<td>C: -sunki-ku</td>
<td>*</td>
<td>-yki-ku</td>
<td>C: -y-ku</td>
<td>A: -ni-ku</td>
</tr>
</tbody>
</table>

158 However, cf. Parker (1969a) and section 6.2.1.1 for an alternative vision on tense and aspect in Quechua.
159 The main phonological difference relevant here is the Ayacucho inclusive marker cik instead of Cuzco cis.
### Past tense (with rqa)

<table>
<thead>
<tr>
<th></th>
<th>1sing obj</th>
<th>2sing</th>
<th>1plur.inc</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 sg sub</td>
<td>*</td>
<td>-rqa-yki</td>
<td>*</td>
</tr>
<tr>
<td>2 sg</td>
<td>-wa-rqa-n</td>
<td>*</td>
<td>-wa-rqa-ncis</td>
</tr>
<tr>
<td>3 sg</td>
<td>C:-rqa-sunki/A:-su-rqa-nki</td>
<td>C:-rqa-sunki-ku/A:-su-rqa-nki</td>
<td>-wa-rqa-ncis</td>
</tr>
<tr>
<td>1pl.inc</td>
<td>*</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>1pl.exc</td>
<td>*</td>
<td>-rqa-yki-ku</td>
<td>*</td>
</tr>
<tr>
<td>2pl</td>
<td>-wa-rqa-nki-cis</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>3pl</td>
<td>C:-wa-rqa-n-ku/A:-wa-rqa-n</td>
<td>C:-rqa-sunki-ku/A:-su-rqa-nki</td>
<td>-wa-rqa-ncis</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>1plur.exc.obj</th>
<th>2plur</th>
<th>3/ no obj</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 sg sub</td>
<td>*</td>
<td>-rqa-yki-cis</td>
<td>-rqa-ni</td>
</tr>
<tr>
<td>2 sg</td>
<td>-wa-rqa-nki-ku</td>
<td>*</td>
<td>-rqa-nki</td>
</tr>
<tr>
<td>3 sg</td>
<td>-wa-rqa-n-ku</td>
<td>C:-rqa-sunki-cis/A:-su-rqa-nki-cik</td>
<td>-rqa</td>
</tr>
<tr>
<td>1pl.inc</td>
<td>*</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>1pl.exc</td>
<td>*</td>
<td>-rqa-yki-ku</td>
<td>*</td>
</tr>
<tr>
<td>2pl</td>
<td>-wa-rqa-nki-ku</td>
<td>*</td>
<td>-rqa-nki-cis</td>
</tr>
<tr>
<td>3pl</td>
<td>-wa-rqa-n-ku</td>
<td>C:-rqa-sunki-cis/A:-su-rqa-nki-cik</td>
<td>-rqa-ku</td>
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</tbody>
</table>

### Future tense

<table>
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<td>*</td>
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<td>*</td>
</tr>
<tr>
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<td>C:-rqa-sunki-cis/A:-su-rqa-nki-cik</td>
<td>-wa-sun/ -wa-suncis</td>
</tr>
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<td>*</td>
</tr>
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<td>*</td>
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<td>*</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>3pl</td>
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<td>C:-rqa-sunki-ku / A:-sunki</td>
<td>-wa-sun/ -wa-suncis</td>
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<td>-sunki-cis</td>
<td>-nqa</td>
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<td>*</td>
<td>-sun/-suncis</td>
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<td>-saq-ku</td>
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<td>*</td>
<td>-nki-cis</td>
</tr>
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<td>3pl</td>
<td>-wa-nqa-ku</td>
<td>-sunki-cis</td>
<td>-nqa-ku</td>
</tr>
</tbody>
</table>

### 6.2.1.1 Tense

There are three kinds of tense: present, past and future. In the present tense paradigm there is no tense marker. There are two kinds of past tense, expressed by *rqa* and *sqa*. The suffix *rqa* expresses a simple past, while *sqa* expresses a ‘narrative past’, also called, ‘reportative past’ or ‘sudden discovery tense’. This suffix has a less distinct meaning than rqa (Cerrón-Palomino 1987: 273; Parker 1969a: 47). Future is expressed by several forms in the future tense paradigm, *saq* in the 1SG.SUB, *nqa* in the 3SG.SUB, and with help of other allomorphs as well. In forms with a 1SUB and a 2OBJ the allomorph of *saq* is *sqa*, identical to the past narrative tense.
Examples of full verb forms are, *riku-wa-nki*, ‘you (will) see me’, *riku-wa-rqa-nki*, ‘you saw me’, *riku-saq-ku*, ‘we (excl.) will see’, *riku-sqa-yki-ku*, ‘we (excl.) saw/ will see you (sing/plur)’.

Unlike Cerrón-Palomino (1987), Parker (1969a) splits Ayacucho Quechua *rqa*, *sqa*, and *nqa* further into an aspectual affix, *-r-*,-*s-* or *-n-*, and a tense affix, *-qa-*. In contrast with a mono-affixal analysis Parker’s analysis captures some generalisations concerning the occurrence of *-n-* in both the *nqa* form, and the 3rd person subject forms. However, in this analysis some unmotivated allomorphy still remains. For example, Parker (1969a: 26ff.) generalises over *saq*, *sqa*, *nqa*, and *n*, and reduces them to three affixes, *SA*, *QA* and *N*. Nevertheless, *SA* and *QA* must have several allomorphs, and *N* must have some unmotivated conditions of occurrence to account for all Cuzco forms containing these more abstract morphemes. Here we see again that if we analyse irregularities by some abstractions, the complexities of the surface forms reappear on another level of analysis (e.g. on the number of allomorphs, or the conditions of allomorphy).

### 6.2.1.2 Agreement

In Cuzco Quechua there is subject agreement with 1st, 2nd, 3rd and 4th person subjects.\(^{160}\) These persons are defined by the two parameters of +/-speaker and +/- addressee. Number is expressed separately from the expression of person. I will call the 4th person also ‘1+2’ or ‘1st person plural inclusive’.

<table>
<thead>
<tr>
<th>+ speaker</th>
<th>-addresssee</th>
<th>+ addressee</th>
<th>-addresssee</th>
</tr>
</thead>
</table>

The 1st person subject agreement affix displays some allomorphy, conditioned both by the person category of object agreement, by number and by tense. When there is no object, or a third person object, the 1st person singular affix is *ni*. This is typical for Quechua II varieties. Quechua I varieties are characterised by vowel length as expression of the 1st person subject (cf. for instance Tarma Quechua, Adelaar 1977). When there is a 2nd person object, Cuzco Quechua uses a fused morpheme, which is, *yki*. When in Cuzco Quechua the first person is in the plural *y* is used instead of *ni*, which is also used in nominal possessive inflection. Ayacucho Quechua has *ni* in both singular and plural 1st person.

The 2nd person subject agreement affix is *nki*. The 3rd person subject agreement affix is *n* or zero, depending on tense, plurality, and object agreement. (For an alternative analysis of *n*, cf. last section). The 4th person subject is *-ncis*, and in the future *-sun(cis)* is used.

Object agreement is expressed in two ways, either by an object agreement marker before the tense affix, which is always a 1st person marker, or by a fused morpheme in which a 2nd person object is fused with a 1st or 3rd person subject.

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\(^{160}\) Lefebvre & Dubuisson (1977) analyse Cuzco Quechua as having only three persons. The advantage of such an analysis is that it explains why the *-ncis* form cannot be pluralised, and also why *-ncis* and the plural marker *-cis* have such similar forms. I maintain however the more common analysis of Quechua studies with four persons.
Apart from the deviations discussed above, person agreement is as in Table 6.5.

**Table 6.5 Person agreement affixes in Cuzco Quechua**

<table>
<thead>
<tr>
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<th>1.(sub)</th>
</tr>
</thead>
<tbody>
<tr>
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<td></td>
</tr>
<tr>
<td>2.sub</td>
<td>wa</td>
<td>nki</td>
</tr>
<tr>
<td>3.sub</td>
<td>wa</td>
<td>n</td>
</tr>
<tr>
<td>1+2.sub</td>
<td></td>
<td>ncis</td>
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<tr>
<td>1.sub→2.obj</td>
<td></td>
<td>yki</td>
</tr>
<tr>
<td>3.sub→2.obj</td>
<td></td>
<td>su nki</td>
</tr>
<tr>
<td>3.sub→1.plur.incl.obj</td>
<td>wa ncis</td>
<td></td>
</tr>
</tbody>
</table>

Cuzco and Ayacucho Quechua have singular and plural number.\(^{161}\) The plural marker is -
*ku* for the first and third person, which I will call the ‘exclusive plural marker’, and -
*cis* for the second person, which I will call the ‘inclusive plural marker’. Number is separately expressed in Quechua II, and its reference is flexible. That is, a number affix may refer either to the plurality of the subject or the plurality of the object in Cuzco Quechua, irrespective of whether the subject or object markers are adjacent to the number marker, for example, *rikwaraqaku*, may mean either ‘he saw us’, or ‘they saw me’, or ‘they saw us’. The last interpretation is also possible, because it is impossible in Quechua to have two inflectional number affixes in one word, which results in underspecification when both subject and object are plural (cf. Lefebvre & Muysken 1988).\(^{162}\) According to Lefebvre & Dubuisson (1977: 69) interpretation of plural affixes depends on the hierarchy 1>2>3, excluding the interpretation ‘they saw me’ for *rikwaraqaku*. According to Cerrón-Palomino (1987: 277), however, there is no such hierarchy. Plural marking is optional for 3rd person subjects.

**6.2.2 Analysis**

**6.2.2.1 Economy**

The categories expressed in Cuzco Quechua are tense, subject and object agreement, and number. Economy plays a role in number agreement. When both the subject and the object agreement are plural, this is only expressed once.

There is also some Economy in the category of tense. There is no difference between a present and a future tense when there is a second person subject, or when there is a third person subject with a second person object.

**6.2.2.2 Transparency**

The structure of Quechua looks rather transparent. There is a template, in which the mono-categorical affixes are often inserted without context restrictions, and without assimilation:

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\(^{161}\) In an analysis with only three persons, we need two kinds of plurals, an inclusive and an exclusive, to differentiate between ‘1+2’, and ‘1+3’.

\(^{162}\) According to Cerrón-Palomino (1987: 277), double plurals are possible. However, this is probably only possible in a few restricted areas (cf. Lakämper & Wunderlich 1998).
Verb - Der - Obj - Tense - Sub - Num - Mood.
However, in several instances there are deviations from the ideal of full Transparency, to which I turn to now.

**Fusion and allomorphy**

In Cuzco Quechua, there are several affixes that could be analysed as consisting of two affixes that show allomorphy, or as one affix that shows fusion. In the last section we saw an example of two such analyses of the tense affix. Here I will discuss fusion and allomorphy of person and number affixes.

First of all, in Cuzco Quechua we have the affixes sunki, and sun/suncis. There is no clear separate meaning of -su- in Quechua I and in the older Quechua Ic varieties, like Cuzco and Ayacucho Quechua. In Ayacucho su appears as a separate suffix in:

(2) Riku- su- rqa- nki-cik.
    see- ‘su’-PAST-2-PL
    ‘He saw you all.’

In example (3) -su- is an inseparable part of a larger unit, -suncik.

(3) Riku- su.n(cik).
    see- ‘su’-?1+2?
    ‘We will see (him).’

(4) Riku- wa- su.n(cik).
    see- OBJ-su-?1+2?
    ‘He will see us.’

In spite of the stable form of the su-affix, it is impossible to establish one meaning for all these examples in Ayacucho Quechua. Parker (1969a: 27) provides su in Ayacucho Quechua with two unrelated partial meanings, “1st person plural inclusive future”, and “addressee as object of third person action”. Moreover, these two meanings must interact with abstract allomorphs of other morphemes to result into the complete meaning for the whole form.

An alternative solution would be to assign the meaning ‘3rd person’ to su, and to derive the direction of agentivity separate from the individual affixes. We could stipulate that in the unmarked case there is a hierarchy from 1st to 3rd to 2nd person, which determines the affix order, and which would explain the affix sequences of su-nki, y-ki, and su-n(cis) (cf. Lefebvre & Dubuisson 1977: 49ff. for such a view). However, it would still not explain why suncis differs from ncis in being future instead of present tense, and furthermore, an extra principle of agentivity is needed while considerable allomorphy would still appear in the analysis of forms like y-ki versus wa-nki. Moreover, the alternant of suncis, namely sun, which is historically the earlier variant, remains unexplained.

In Ayacucho Quechua we may be tempted to give su an independent meaning, since it appears as an independent affix in some of the cases above. In Cuzco Quechua su does not often appear as a separable suffix, being immediately followed by nki, or n(cis).163

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163Decisive is whether tense markers like -rqa- and -sqa- can come between -su- and -nki- or not. According to Cusihuaman (1976: 169, 172) -rqa- cannot intervene, cf. also Cerrón-Palomino (1987: 278): “It is noted in Cuzco Quechua the combination of second person object and past tense is in inverse order, cf., pusu-rqa-su-nki, etc” (Notese que en el cuzqueño la combinación de
Therefore, in Cuzco Quechua an analysis in which sunki and sun(cis) are fused forms with non-composable meanings becomes more plausible. The disadvantage of such an analysis is that in Quechua affixes are usually less heavy. In addition, in such an analysis meaning correspondences between sunki and sun(cis) are lost.

Irrespective of how we analyse su, forms with su violate principles headed under Transparency, whether it is “No Fusion”, or “No Allomorphy”. In 6.3.3.2 I will discuss the status of su in other Quechua varieties, and we will see, that the non-transparency of su is repaired in different ways in northern and southern Quechua.

For yki there is a similar argument, because the yki form could be divided into y- and -ki (cf. Lefebvre & Dubuisson 1977: 46). Such an analysis would reduce the amount of fusion, but introduce more allomorphy. In addition, it leads to the same problem of agentivity. That is, how do we know that the first person is the subject in y-ki, and not the second person? The form yki is more plausibly analysed as a fused affix than su-nki because in no Quechua variety does it appear as two separate affixes. Moreover, phonologically it is less complex in shape than other fused (derivational) affixes such as yku or rqu.

The suffixes, ncis, yku, and wancis present similar problems. When we analyse these as consisting of two affixes, we need more allomorphy. When we analyse them as monosuffixal we lose meaning correspondences with other affixes. Again, the actual analyses depend on the phonological shape, the independence of the meanings of the parts, and the occurrence of the parts elsewhere.

Finally, the future 1st person affix is saq, which is either a fused affix, or consists of two allomorphs, a 1st person future affix sa and an allomorph q of a non-present tense affix, qa (cf. Parker 1969a: 27, 48).

In addition to these disputable forms, there is also some allomorphy between a zero affix for third person subject, and an -n- affix.

**Homonymy**

In Cuzco and Ayacucho Quechua the future tense marker is identical to the narrative past tense marker sqa in forms with a 1st person subject and 2nd person object. According to Parker (1969a) the similarity between these two forms has emerged from an accidental correspondence between several allomorphs; future tense sqa would be derived from SA-QA, while narrative past sqa, would consist of S-QA.

**Fission**

Candidates for an analysis in terms of fission are forms like wa-ncis and wa-sun(cis). The suffixes ncis and sun(cis) refer to a first person plural inclusive (1+2), wa to a first person object, and wa-ncis and wa-sun(cis) to a third person actor and a first person plural inclusive (1+2) object. Therefore, we may conclude that 1st person is expressed twice, both in wa and in ncis or suncis. However, again, such analysis needs an extra principle to account for the direction of agentivity, and, instead, an analysis in which suncis has two different meanings dependent on the context is also possible.
6.2.2.3 Isomorphy

According to the Isomorphy Principle the following order is preferred cross-linguistically (cf. section 2.1.3.2):


The basic Cuzco Quechua order of the affixes that I take into consideration is: Verb-(Der)- PersObjAgr- Tense- SubAgr- NumSub/ObjAgr.

In two respects Cuzco affix order deviates from this order. First of all, not all affix sequences comply to this order. In 6.2.2.2 I discussed morphemes in which object and subject agreement suffixes were fused. These fused morphemes violate the Isomorphy Principle when there is a tense affix, since a fused morpheme can obviously not appear both before and after this tense affix (cf. the examples in Table 6.3 above).

Secondly, the category of number in Cuzco Quechua may refer to the number of the object. This means that this affix refers to the meaning of a non-adjacent affix. Such an order deviates from the ideal order above.

6.2.2.4 Other Principles

Depending on the kind of analysis adopted, we may assume that an animateness hierarchy is operative in Cuzco Quechua. This hierarchy may determine how plural affixes are interpreted, and possibly what the direction of agentivity is, what kind of category combinations appear in fused form, and what order of affixes is allowed. In section 6.3.3.2 I examine a proposal by Lakämper & Wunderlich (1998) which describes this kind of hierarchy.

When analysing Quechua in a model where lexical items are mutually independent atomic items, some regularities are missed. Instead, when we assume that in interpretation and composition of words paradigmatic relations between words play a role, we can capture regularities that are otherwise missed. For instance, if we mechanically analysed wa-ncis, we would arrive at a reflexive meaning, 1+2FUT → 1. However, since reflexivity is already expressed in another part of Quechua morphology we adjust the interpretation and arrive at the actual meaning, 3 → 1+2. Here it is not the composition of the parts which determines the full meaning, but the relation between this form and other forms in Quechua, which is a paradigmatic relation.

Other regularities that are only paradigmatic are: the partial both form- and meaning correspondence between 1+2, -ncis, and the plural marker of the 2nd person, cis; the correspondence between ki in yki, and ki in nki, and so on. Such paradigmatic relations correspond to the vague form-meaning correspondences between ‘wh-words’, in English. Though wh does not mean anything in itself, there are associations between both form (wh) and meaning (questioning) in English. These associations do not have morphemic status, though they have both historical and probably also psychological reality.

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164 ‘Basic’ in the sense of ‘most simple order’ from which other orders can be derived by some additional principles.
6.2.3 Cuzco versus Ayacucho Quechua

In the discussion above, I have already outlined the differences between Cuzco and Ayacucho. Now I will summarise these.

Ayacucho Quechua has the same affix in the singular and plural 1st person subject agreement, cf. *riku-ni* and *riku-ni-ku*. Cuzco Quechua has *riku-ni* versus *riku-y-ku*. For the development of Bolivian and Argentinean Quechua this had major consequences (cf. next section). Ayacucho Quechua has *riku-su-rqa-nki*, while Cuzco Quechua often has *riku-rqa-su-nki*. This difference will also play a role in other Quechua varieties. Finally, Ayacucho makes less use of the exclusive plural *ku*-affix. In Ayacucho this affix does not pluralise 3rd person subjects when there is also an object (cf. Parker 1969a: 28), while Cuzco Quechua does not have such a restriction.

6.3 Southern Quechua

In this section I discuss the changes in what I call Southern Quechua, that is, Bolivian and Argentinean Quechua. Because these changes are highly comparable I present them in the same section.

6.3.1 Bolivian Quechua

Bolivian Quechua is based on Cuzco Quechua. It has roughly the same structure and expresses the same notions in the same order of affixes:

Verb - Der - Obj - Tense - Sub - Num.

However, there have been some minor changes which, nevertheless, have had wide repercussions for Bolivian Quechua inflection.

The Bolivian Quechua data given here are based on Van de Kerke (1996a, 1996b), Lakämper & Wunderlich (1998) and Muysken (fieldwork data). In Table 6.6 on next page I have shaded the cells where Bolivian Quechua (i.e. Cochabamba Quechua) differs from Cuzco Quechua, because of person-number fusion (cf. below), and I circumscribed the cells with bold where another change took place, i.e. reanalysis of *su*. The data are from Tarata, a small town near Cochabamba (Van de Kerke 1996a). In Table 6.6 I also provide data -if different- from Quechua varieties spoken in Potosí (P) (cf. Lakämper & Wunderlich 1998: 139), Norte de Potosí (N) (Plaza 1987, in Van de Kerke 1996a: 132) and Charazani north of La Paz, near the Peruvian border (C) (Muysken, fieldwork data). I added *nki* in 3.sub /g224 2.pl.obj. between brackets, because according to Bills, Troike en Vallejo (1969) this suffix would be found in Bolivian Quechua (Adelaar, pers.comm.).

In several aspects Bolivian Quechua has remained similar to Cuzco Quechua. It still has four tenses: present, simple past, narrative past and future. Because future 1PL.EXCL.SUB and OBJ forms have changed these are now also similar to their narrative past counterpart. In Cuzco Quechua forms with a 2nd person object and a 3rd person subject were similar in the present and future tense. In Cochabamba Bolivian Quechua, these are only similar with 2nd person plural objects, while there is some variation in the other Bolivian varieties. Forms with a future 2nd person subject are still identical to present tense forms.

Basically, Bolivian Quechua agreement is similar to Cuzco Quechua agreement. However, two small changes occurred which had far-reaching consequences; 1PL.EXCL.y-
Quechua

ku and 3PL n-ku fused to yku and nku, and su received a more independent status. I will analyse these changes together with parallel changes in Argentinean in 6.3.3.2.

Table 6.6 Bolivian Quechua verb inflection

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<td>*</td>
</tr>
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Past tense (with rqa)

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<td>-wa-rqa-yku</td>
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</tr>
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<td>*</td>
</tr>
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Future tense

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<td>*</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>3pl</td>
<td>-wa-nqa-nku</td>
<td>-su-nqa-nku</td>
<td>-wa-sunics</td>
<td>-wa-sqa-yku</td>
<td>su-nki-cis</td>
</tr>
</tbody>
</table>

6.3.2 Argentinean Quechua

In Table 6.7 on Argentinean Quechua the forms that differ from Cuzco Quechua and are similar to Cochabamba Quechua are lightly shaded, when y-ku or n-ku fusion is involved, and are outlined boldly when su-uniformity is involved. The forms that also differ structurally from Bolivian Quechua are more heavily shaded, and circumlined when su-
extension is involved. Data are based on Adelaar (1994), Alderetes (1994), Bravo (1956) and Lakämper and Wunderlich (1998).

### Table 6.7 Argentinean Quechua verb inflection

#### Present tense

<table>
<thead>
<tr>
<th></th>
<th>1sg.obj</th>
<th>2sg</th>
<th>1pl.inc</th>
<th>1pl.exc</th>
<th>2pl</th>
<th>3/ no obj.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1sg</td>
<td>*</td>
<td>su-ni/</td>
<td>*</td>
<td>*</td>
<td>-yki-cis</td>
<td>ni</td>
</tr>
<tr>
<td>2sg</td>
<td>a-nki</td>
<td>a-n</td>
<td>a-ncis</td>
<td>a-yku</td>
<td>*</td>
<td>-nki</td>
</tr>
<tr>
<td>3sg</td>
<td>a-n</td>
<td>su-n</td>
<td>a-ncis</td>
<td>a-yku</td>
<td>su-nki-cis</td>
<td>n</td>
</tr>
<tr>
<td>1pl.inc</td>
<td>*</td>
<td>su-n</td>
<td>a-ncis</td>
<td>a-yku</td>
<td>*</td>
<td>-n</td>
</tr>
<tr>
<td>1pl.exc</td>
<td>*</td>
<td>su-n</td>
<td>a-ncis</td>
<td>a-yku</td>
<td>su-nki-cis</td>
<td>-nki</td>
</tr>
<tr>
<td>2pl</td>
<td>a-nki-cis</td>
<td>*</td>
<td>a-ncis</td>
<td>a-yku</td>
<td>su-nki-cis</td>
<td>-nki-cis</td>
</tr>
<tr>
<td>3pl</td>
<td>a-nku</td>
<td>su-nku</td>
<td>a-ncis</td>
<td>a-yku</td>
<td>su-nki-cis</td>
<td>-nku</td>
</tr>
</tbody>
</table>

#### Past tense

<table>
<thead>
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<th>2sg</th>
<th>1pl.inc</th>
<th>1pl.exc</th>
<th>2pl</th>
<th>3/ no obj.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1sg</td>
<td>*</td>
<td>su-ra-ni/</td>
<td>*</td>
<td>ra-ncis</td>
<td>-yki-cis</td>
<td>-ra-ni</td>
</tr>
<tr>
<td>2sg</td>
<td>a-ra</td>
<td>su-nra</td>
<td>a-ra-ncis</td>
<td>a-ra-yku</td>
<td>su-ra-nki-cis</td>
<td>-ra</td>
</tr>
<tr>
<td>3sg</td>
<td>a-ra</td>
<td>su-nra</td>
<td>a-ra-ncis</td>
<td>a-ra-yku</td>
<td>-ra-nki-cis</td>
<td>ra-nku</td>
</tr>
<tr>
<td>1pl.inc</td>
<td>*</td>
<td>su-ra</td>
<td>a-ra-ncis</td>
<td>a-ra-yku</td>
<td>*</td>
<td>-ra-ncis</td>
</tr>
<tr>
<td>1pl.exc</td>
<td>*</td>
<td>su-ra</td>
<td>a-ra-ncis</td>
<td>a-ra-yku</td>
<td>*</td>
<td>-ra-ncis</td>
</tr>
<tr>
<td>2pl</td>
<td>a-ra-nki-cis</td>
<td>*</td>
<td>a-ra-ncis</td>
<td>a-ra-yku</td>
<td>-ra-nki-cis</td>
<td>-ra-nki-cis</td>
</tr>
<tr>
<td>3pl</td>
<td>a-ra-nku</td>
<td>su-ra-nku</td>
<td>a-ra-ncis</td>
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<td>-ra-nku</td>
</tr>
</tbody>
</table>

#### Future tense

<table>
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<th>2sg</th>
<th>1pl.inc</th>
<th>1pl.exc</th>
<th>2pl</th>
<th>3/ no obj.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1sg</td>
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<td>su-saq/</td>
<td>*</td>
<td>saq</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2sg</td>
<td>a-nki</td>
<td>su-nqa</td>
<td>a-suncis</td>
<td>a-saq-ku</td>
<td>*</td>
<td>-nki</td>
</tr>
<tr>
<td>3sg</td>
<td>a-nqa</td>
<td>su-nqa</td>
<td>a-suncis</td>
<td>a-saq-ku</td>
<td>su-nki-cis</td>
<td>nqa</td>
</tr>
<tr>
<td>1pl.inc</td>
<td>*</td>
<td>su-nqa</td>
<td>a-suncis</td>
<td>a-saq-ku</td>
<td>*</td>
<td>-nki-cis</td>
</tr>
<tr>
<td>1pl.exc</td>
<td>*</td>
<td>su-saq-ku</td>
<td>*</td>
<td>su-saq-ku</td>
<td>saq-ku</td>
<td></td>
</tr>
<tr>
<td>2pl</td>
<td>a-nki-cis</td>
<td>*</td>
<td>a-suncis</td>
<td>a-saq-ku</td>
<td>su-nki-cis</td>
<td>-nki-cis</td>
</tr>
<tr>
<td>3pl</td>
<td>a-nqa-nku</td>
<td>su-nqa-nku</td>
<td>a-suncis</td>
<td>a-saq-ku</td>
<td>su-nki-cis</td>
<td>-nqa-nku</td>
</tr>
</tbody>
</table>

As in Cuzco and Bolivian Quechua, there are three tense paradigms: present, past and future, with two past tense sub-paradigms. Allomorphy and homonymy is also roughly similar to Bolivian Quechua. Minor differences are that in Argentinean Quechua only singular 1SUB.→2OBJ forms, *sqa-yki*, are identical in the narrative past and the future.

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165 In the literature the 1OBJ affixes are given as *-a*. This results from a rule that deletes *w* between vowels, in combination with the condition on stems and derivational suffixes that they must end on a vowel.

166 According to Adelaar (pers.comm.) the 1SG→2SG forms with *su* are more common, and other forms possibly hypercorrections by the grammarians.
Furthermore, in Argentinean Quechua forms with a 2nd person object and a 3rd person subject are only similar in present and future tense with plural objects, cf. *su-nki-cis*, in the present and future tense paradigm.

As in Bolivian Quechua, Argentinean Quechua inflection is still based on the same underlying system of the order:

Verb - Obj - Tense - Sub - Num.

As in Bolivian Quechua, the fusion of person and number affixes, and the slightly different meaning of the -su-affix in Argentinean Quechua have caused the whole paradigmatic structure to be rearranged.

6.3.3 Analysis
6.3.3.1 Economy

The categories expressed in Bolivian and Argentinean Quechua are, as in Cuzco Quechua, tense, subject and object agreement, and number. The values these categories can take are also still the same. In the same way, Economy holds for number agreement in Cuzco Quechua. When both the subject and the object agreement are plural, this is only expressed once.

Economy also plays a role in the category of tense which basically remains the same in Bolivian and Argentinean Quechua as well as in Cuzco Quechua. In several forms the future tense is similar to the present tense, while some future forms are, by accident, also similar to the narrative past. There are some slight differences in the exact forms that are similar across tense. This is, however, not an independent change towards more Economy, but is a side-effect of the other changes which I will now discuss.

6.3.3.2 Transparency

Transparency has a different emphasis in Bolivian and Argentinean Quechua. It has been changed significantly through two broad developments that affected the whole inflectional system of Southern Quechua. These are, firstly, the fusion of the *ku* number marker with the person markers, and secondly, the greater transparency of the second person object suffix *su*.

Fusion of person and number

In Cuzco and Ayacucho Quechua, the number marker *ku* is a separate suffix placed after the person marker affixes. It can refer to the plurality of the subject or the object, irrespective of whether the subject or object markers are adjacent to this number marker (cf. 6.2.1.2).

In Bolivian and Argentinean Quechua the sequences *n-ku* and *y-ku* have been reinterpreted as inseparable affixes, and the affix *ku* itself has largely disappeared. In other words, *ku* has fused with the first person plural subject marker *y* and with the third person subject marker *n*, resulting in two new suffixes *yku* and *nku*. As first noted by Van de Kerke (1996a), it can no longer appear without these subject markers. The rationale behind this reinterpretation may be a form of Isomorphy, which demands that affixes only refer to other affixes that are adjacent. When Bolivian speakers had concluded that - *ku* always referred to the adjacent affix, it was only a small step to reanalyse these two affixes as one fused affix. An extra motivation behind this reanalysis may be the structure
of Aymara, which was spoken by many of the new Quechua learners. In Aymara there are only subject and object agreement slots and no number slot in the inflectional paradigm. In some cells in the future tense paradigm of Argentinean Quechua -ku is, however, still found without adjacent -n or -y. Perhaps -ku in Argentinean Quechua may only be used in future tense, which implies that with respect to plural number and the reanalysis of y-ku and n-ku Argentinean Quechua is a little hybrid. Another possibility suggested by Van de Kerke (pers.comm.) is that -ku in Argentinean is also fused with saq into saqku. This would explain the distribution of -ku without -n or -y, although the assumption of saqku as a fused affix would meet with the same criticism as the assumption of sunki as a fused affix in Cuzco Quechua. That is, such heavy affixes have a quite atypical form in Quechua morphology.

This fusion has no immediate consequences in the present tense intransitive paradigm, where ku in Cuzco Quechua is used for pluralising its adjacent first and third person subject suffixes. In the transitive paradigm and in the past and future tenses, however, problems arise. In those cells ku was used to pluralise: the non-adjacent 1st person object markers; the subject markers which are non-adjacent because of intervention of tense-affixes; and the first and third person subject markers, which are expressed in the fused forms yki, and sunki (cf. Table 6.6, where I shaded these problematic cases).

These problems led to different outcomes in different varieties of Bolivian Quechua. In the 1PL.EXCL.SUB-> 2SG/PL.OBJ forms yki-ku was no longer possible because ku no longer existed. In Potosi and Charazani, in the present 1PL.EXCL-> 2PL form, yki-ku has been replaced by yki-cis. This form expresses plurality of the object instead of the subject. However, since we still find yki-ku in Charazani Quechua, this variety may be analysed as still having a separate ku-affix, which has stronger restrictions of occurrence than in Cuzco Quechua. Muysken (pers.comm.) suggests that -ku is only disallowed when adjacent to the 2nd person affix, nki. Although this still leaves the past tense form rqa-yku instead of rqa-yki-ku unexplained, such a restriction represents the halfway solution between free distribution of ku, and fusion of ku with y and n. This looser bond of y and ku in north Bolivia may be due to more influence from and convergence towards nearby Cuzco Quechua. In other Bolivian varieties yki-ku has been replaced consistently by (su)-yku.

In some cases categories are omitted for the sake of other apparently more important categories. In forms with a first person plural exclusive object, the plurality of this object is expressed at the expense of the expression of the person and number of the subject. In the forms where a tense marker originally was fused with a subject marker, and where ku only added plurality, as in 3PL->3SG.PAST rqa-ku, the plural marker is replaced by its corresponding new markers yku and nku. The seemingly ‘innocent’ fusion of y-ku and n-ku has had quite far-reaching repercussions for the inflectional system. There is more homonymy between some forms (cf. the shaded column under 1PL.EXCL), but also more fusion (of -y/-n- and ku) and more fission (as in wa-rqa-yku, where first person is expressed twice, in wa and in yku).167

In most cases the fusion of ku in Argentinean and Cochabamba Quechua led to similar problems and similar solutions. In 1PL.EXCL->2PL forms, the expression of the plurality of the first person in the present tense is apparently less important than the expression of the

167 However, these instances of fission can also be analysed as cases of allomorphy.
plurality of the second person, resulting in yki-cis, as in Potosí and Charazani. However, the future tense paradigm, where we find forms ending with -ku (see above), is different from that which is found in Cochabamba Quechua.

The fusion of ku with subject affixes and perhaps even tense affixes (in Argentinean Quechua) led to new forms, where other categories were omitted. Perhaps the choice of categories that were omitted not only depended on a semantic prominence hierarchy but also on paradigmatic effects (Van de Kerke, pers.comm.). That is, new forms in Bolivian and Argentinean could be built in analogy with other forms in the paradigm, and not only on the basis of the computation of form-meaning relations. I discuss such paradigmatic forces in Southern Quechua in section 6.3.3.4.

The effects of this fusion in Southern Quechua with respect to Transparency are not straightforward. First of all, in Argentinean Quechua, and especially in Bolivian Quechua, there is obviously more fusion, since y-ku and n-ku have fused. This introduces two new affixes. In forms with a first person plural object, there is also more fission, since 1st person is marked twice in these forms. In these forms there is also more homonymy since the person and number of the subject are no longer expressed. Because of this change Bolivian Quechua has less homonymy than Cuzco Quechua, since a distinction has appeared between plural and singular of the 1st person object when the subject is third plural.

**Reinterpretation of -su-**

As I discussed in section 6.2.2.2, in Quechua II su, or sunki, is hard to analyse as a regular affix with consistent meaning. While in Ayacucho Quechua su appears as a separate affix, in Cuzco Quechua su seldom occurs by itself.

In Bolivian Quechua sunki has been (re)-interpreted as a combination of two separable suffixes su and nki. In contrast with earlier Quechua, su tends to be interpreted as a general 2OBJ marker. In Charazani, possibly owing to its close proximity to Cuzco Quechua, there are still several instances where sunki is not split or reanalysed. However, in Cochabamba Quechua, especially in 3SUB→2OBJ past and future tense forms, su has become the 2OBJ marker. In Potosí and Norte de Potosí su is also used as 2OBJ marker in some forms with a first person subject.

In Argentina this development has gone even further; the su-affix has been generalised to most 2OBJ forms, like 1→2, su-ni and su-yku, though less in 2PLOBJ forms, e.g. su-ra-nki-cis, 3→2PL.PAST. In Bolivian Quechua the more consistent form, su-ra-cis, 3→2PL.PAST, using su as the 2nd person object affix is also found.

This change towards a more uniform expression of 2nd person leads to less fusion in Bolivian Quechua, under the assumption that sunki was a fused form in Cuzco Quechua. In Argentina even more non-transparent forms, i.e. 1→2 forms, are replaced by transparent forms, composed with su as a second person object.

Several factors may have played a role in the reanalysis of su. The reinterpretation may have been triggered by the fusion of -n-/y- and ku, which prevented the use of the 3PL→2SG Cuzco Quechua form sunki-ku. This form could not be replaced by sunki-nku, because nku counts as a subject marker. Since sunki is already in subject position, sunki-nku would not be possible. The solution in Bolivian Quechua for the expression of 3PL→2SG may have been to reinterpret sunki, and to put su in the object position, while omitting nki in favour of the plural third subject marker nku. This may have resulted in
the replacement of the Cuzco form sunki-ku for su-nku. Consequently, this reanalysis may have spread to other cells of the paradigm.

This analysis, however, cannot explain the direction of su-spread. In Bolivian Quechua su spread especially in the past and future tense, while in Argentinean Quechua it spread mainly to 1SUB→2SG.OBJ forms.

Moreover, in Cajamarca Quechua, a Quechua IIa variety spoken in north Peru, a similar spread of su took place without reinterpretation of a ku-plural marker, which in fact does not exist in Cajamarca. The Cajamarca Quechua paradigm may have played a role in reanalysing su in the south as well, because there are indications that Quechua speakers from the Cajamarca area migrated to the south after the Spanish Conquest (cf. Adelaar 1994: 46). In Cajamarca Quechua we find forms like, rika-shu-rqa-q, 1→2PAST and rika-shu-nqa, 3→2FUT (Quesada 1976: 126). Moreover, just as in Bolivian Quechua, in Cajamarca Quechua the diffusion of su also took place primarily in the non-present tenses (cf. Adelaar 1994: 39).

When assuming spread from another Quechua variety, without the ku-marker, we still do not know why su changed the way it did in Cajamarca in the first place. Perhaps this pattern is caused by the possibility in the present tense of using sunki, while in the past and future tense, the tense marker separates the two parts into su and nki. This separation may have helped the reanalysis of su especially in the past and future tense. This motivation may have worked in Cajamarca and then been diffused to the south, or perhaps this reanalysis was worked out independently in several Quechua varieties.

The influence of Ayacucho Quechua in the south possibly played a role in separating su and nki. The same influence may have been exerted over Cajamarca Quechua, since this Quechua IIa variety probably does not stem from Cuzco Quechua, which has the strongest tendency to fuse su and nki. Finally, the major substrate language in the south, Aymara may also be important in the spread of su, since Aymara has an agreement system with extensive 2nd person object marking (cf. Cerron-Palomino 1994: 105). This last explanation, however, cannot explain why su, 2OBJ is also found in Cajamarca, where there is no Aymara substrate. Moreover, in Aymara the object agreement affixes are usually fused affixes.

Lakämper and Wunderlich (1998) analyse the changes with respect to su in Southern Quechua IIc varieties with the help of a formal constraint and three stages:

1) The so-called Object-Subject-Constraint is active. This constraint says that objects may only be separately marked if the person of the object is higher on the person hierarchy than the subject. If the person is lower there may only be a fused form or no form at all. The person hierarchy is in Quechua 1>2>3 (cf. also Lefebvre & Dubuisson 1977). In this phase the asymmetry between the fused form 1→2 yki, and the non-fused forms 2→1, wa-nki, 3→1 wa-n, and 3→2 su-nki is explained by this constraint. This is the stage of the older and more conservative Quechua varieties, like Q1 varieties and Ayacucho Quechua.

2) su is no longer a separate morpheme, because it has been fused with nki into sunki. Therefore there is no ‘danger’ anymore that 1→2 would be expressed as su-ni, because su simply does not exist anymore. In this phase the OSC is irrelevant, because it fulfils no new function. According to Lakämper and Wunderlich (1998) Cuzco Quechua is in this stage.
3) In the next stage sunki has been re-interpreted as su-nki but the OSC has not returned with this reinterpretation. Therefore, forms like su-ni and su-yku have become possible. Bolivian Quechua is in this phase, and Argentinean Quechua is one step further than Bolivian because it has implemented this possibility in more contexts. This explanation uses the OSC to explain why su only spreads in varieties based on Cuzco Quechua, and it also explains some other 2nd person asymmetries in nominal inflection. However, this constraint has no psychological or communicative plausibility. Moreover, it cannot explain why in Cajamarca Quechua, which is not based on Cuzco Quechua, su-ni is also possible. In addition, this analysis assumes that Bolivian and Argentinean Quechua are only based on Cuzco Quechua, while these varieties are also influenced by other Quechua varieties. Finally, even in Cuzco Quechua, su and nki are not always a unit (cf. Lefëbvre & Muysken 1988).

6.3.3.3 Isomorphy

These two broad developments in Southern Quechua have had some effects on Isomorphy as well. As I discussed in 6.2.2.3, Cuzco Quechua deviates from Isomorphy in two ways, by having fused subject/object affixes, and by allowing the number affix to refer to the object position. In Southern Quechua sunki is split, and yki is found in fewer contexts. This results in an affix order that complies better with the Isomorphy Principle; the object and subject agreement positions are more consistently filled with appropriate affixes. The fusion of yku and nku may be described as effects of strong locality demands. In other words, Isomorphy demands that affixes may only refer to adjacent affixes. At first sight Isomorphy is better complied with. However, these fused affixes are still used to pluralise non-adjacent affixes, and the initial strong locality demand is lost. However, Lefebvre & Dubuisson (1977: 69) write: “The Bolivian dialect follows the rule of the classical dialect (older Cuzco Quechua) in favouring number agreement with the subject instead of the object.”

6.3.3.4 Other principles

Some phenomena in Cuzco and Ayacucho Quechua may be manifestations of an animateness or person hierarchy. This is also plausible for Southern Quechua. Although I do not fully adopt Lakämper & Wunderlich’s (1998) analysis, their observations that the category of person behaves differently depending on whether it is 1st, 2nd or 3rd person remains valid. In addition, in the changes which were induced by the person-number fusion, 2nd and 3rd person categories are more easily dropped than 1st person categories, which is also an indication that there is a hierarchy where 1st person is ranked above 2nd and 3rd person. However, the selection of forms like wa-rqa-yku, above e.g. wa-rqa-nki may also be explained by paradigmatic motivations to which I now turn.

In Cuzco Quechua there are forms like wa+ncis whose interpretation is motivated by paradigmatic relations as discussed in section 6.2.2.4. As Van de Kerke (pers.comm.) notes, several changes in Southern Quechua may be motivated by such relations. First of all, the construction of wa-(rqa)-yku is facilitated by the following (paradigmatic)

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168 “Le dialecte Bolivien suit la règle du dialecte classique en favorisant l’accord en nombre avec le sujet plutôt qu’avec l’object.”
analogy: the (PAST) 1PL.INCL.SUB in Bolivian Quechua is (rqa)-ncis. The (PAST) 1PL.EXCL.SUB is (rqa)-yku. Now, the irregular (PAST) 1PL.INCL.OBJ is wa-(rqa)-ncis. When taking the analogy between these three forms into account, the form wa-(rqa)-yku for the (PAST) 1PL.EXCL.OBJ is not surprising. Similarly, the future 1PL.EXCL.OBJ, wa-sqa-yku in Bolivian Quechua (Herrero 1978: 324) is composed on the basis of the 1PL.EXCL.SUB.\textsuperscript{169} In Argentine Quechua the 1PL.INCL.SUB is -suncis, and the 1PL.EXCL.SUB is saq+ku.\textsuperscript{170} Thus, the irregular (FUT) 1PL.INCL.OBJ is wa-suncis, and the (FUT) 1PL.EXCL.OBJ is wa-saq+ku.

Another example of paradigmatic effects is the absence of $3 \rightarrow 2$ forms ending on su-n in varieties where the 1PL.FUT may also end on sun. This is a case where a homonymic form is avoided because a phonologically similar form already exists elsewhere in the paradigm. In Argentine Quechua there is a $3 \rightarrow 2$ su-n form, and in this variety Bravo (1956: 154ff.) indeed does not mention a 1PL.FUT sun form.

These paradigmatic inflectional changes differ from other changes that could be motivated on the basis of analogy. For instance, the replacement of yki, $1 \rightarrow 2$ by su-ni in Argentine Quechua is an analogous extension on the basis of other forms with su. However, the difference with the examples above is that in those forms an irregular form is composed on the basis of another irregular form without a straightforward modification of a feature specification of a particular morpheme, while in the latter example, only a feature specification has changed: the conditioning factors of su were minus 1st person subject, which have been removed.

6.3.4 Conclusion

Bolivian and Argentine Quechua differ from Cuzco Quechua in the fusion of ku with -y- and -n-. Furthermore in the history of Quechua IIC varieties there have been some changes in the status of su. In Ayacucho it was an independent suffix, though with a peculiar meaning, in Cuzco Quechua it does not occur as an independent affix, while in Bolivia and to an even larger extent in Argentina su has been reinterpreted as a general 2nd person object marker.

With respect to the various Principles, we conclude the following. In Bolivian Quechua there is both more fusion (y+ku and n+ku) and less fusion (su - nki). There is more homonymy, especially in 1PL.OBJ forms, and more fission, in these same forms. The order of affixes complies better with Isomorphy than in Cuzco Quechua, though not perfectly.

In Argentine Quechua there is also more homonymy and fission due to the fusion of y-ku and n-ku. In one aspect, Argentine Quechua is more transparent than Bolivian Quechua, that is, the fused sunki and yki affixes are more rigorously avoided, and replaced by more transparent affixes. Thus the order of affixes in Argentine Quechua is more closely linked to Isomorphy.

In conclusion, it depends on how we rank the loss of fusion, in comparison with an increase of fission, and an increase of Isomorphy. However, when no factor is ranked

\textsuperscript{169} Adelaar (pers.comm.) notes that instead of several analogical extensions we may also assume only one analogical extension in the present tense, while deriving the other forms from this present tense form.

\textsuperscript{170} In section 6.3.3.2 I discuss whether saq and ku are one or two affixes.
higher than another, we see that Argentinean Quechua displays a little more Transparency than Bolivian Quechua which has changed only slightly with respect to Transparency. Both varieties conform a little better to the Isomorphy Principle. Therefore, Argentinean Quechua has moved a little closer towards a ‘Type 2 language’ than Bolivian Quechua.

Van de Kerke (1996a: 130), however, draws a different conclusion:

“We have seen that Cuzco Quechua has a very transparent Agr/Tense system. Apart from the non-local character of the subject->object transitions -yki and -sunki and the non-local interpretation of the plural markers, it complies with the Mirror Principle in realising a good match between the order of morphemes and the morpho-syntactic categories expressed. However, this ideal transparency has become opaque by a minor reinterpretation of first and third plural marking in Bolivian Quechua, which not only led to a great number of underspecified and doubly specified surface realisations, but even to the realisation of subject markers as pluralisers in the case of -yku as in -wa-yku [unspecified sub-> 1Plob].”

Though Van de Kerke (1996a, b) acknowledges the non-ideal character of Cuzco Quechua’s non-locality and fused morphemes, he conceives the homonymy and fission, or, as he calls it, underspecification and double specification, as more threatening to ideal transparency. In addition, he does not take into account the somewhat smoother affix order of Obj-Tense-Sub in Bolivian Quechua, which results from the more transparent su affix in Bolivian.

This different view may be related to the different question posed. Van de Kerke (1996a, b) uses the Bolivian data to examine whether Baker’s (1985) Mirror Principle holds. Since the Bolivian data are more problematic for the Mirror Principle than the Cuzco data, Bolivian Quechua may be called less transparent. My notion of transparency and isomorphy is, however, a different one (cf. section 2.1), in which e.g. homonymy is not a more severe violation of Transparency than fusion.

Lakämper and Wunderlich (1998: 147) say about Quechua complexity:

“So one may argue that dialects like that of Ancash and Ayacucho are defective from the very beginning: OSC [Object-Subject Constraint, cf. above, WK] restricts the generative capacity of the individual morphemes but forces complex morphemes that encode information about both object and subject. Only when we come to the post-Cuzco stages (like Potosí or Santiago del Estero), in which the individual morpheme -su for 2person is reinvented, has this kind of deficiency been overcome and an affix-oriented system is produced. However, there can only be small changes, and the new system has to work with the affix material inherited from the former stages. As we have seen, the potentially symmetric system that emerges in the most recent stages of Quechua is not ideal either.”

In this last sentence they refer to the relatively large number of affixes, and allomorphy, in ‘post-Cuzco’ varieties. In contrast with Van de Kerke, Lakämper and Wunderlich suggest in this quote that Quechua varieties like Cuzco and Ayacucho Quechua are ‘deficient’; they need ‘complex morphemes’, that is, fused morphemes, to comply with the OSC. In ‘post-Cuzco’ varieties, this deficiency is essentially removed, were it not that Bolivian and Argentinean have to ‘work with the affix material inherited from the former stages’.

Although I do not use the OSC, this concurs roughly with my view; in ‘pre-Cuzco’ varieties there is quite some fusion and non-isomorphy, which is absent in Bolivia and Argentina. In these latter varieties, instead, new complications have arisen.
Lakämper and Wunderlich (1998: 146) give a somewhat simplified picture of the violation of Transparency by these new complications. They only count the number of allomorphs, and conclude that the reduction in fusion in pre-Cuzco varieties is counterbalanced by the increase in allomorphy. However, when taking all violations of Transparency, Economy, and especially Isomorphy into account in Quechua IIC varieties, we have the impression that Bolivian and certainly Argentinean Quechua have been changed in the direction of a Type 2 language.

### 6.4 Ecuadorian Quechua

#### 6.4.1 Data

The data on Ecuadorian Quechua come from Cole (1982) and Muysken (1977, 1999, 2000). Cole’s grammar is on Imbabura Quechua, while Muysken’s (1977) data are from more central dialects. These varieties differ with respect to plural marking on verbs, Imbabura having no 3.PL.SUB marking on verbs, while the central dialects have a plural marker for the third person subject, which I marked with parentheses in Table 6.8.

#### Table 6.8 Ecuadorian Quechua verb inflection

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</table>
6.4.2 Analysis

6.4.2.1 Economy

All categories that exist in Cuzco Quechua also exist in Ecuadorian Quechua. However, within these categories, some notions are no longer expressed. First person objects are marked only in the singular. Object agreement with a second person is no longer marked at all. The reason for the loss of these notions does not lie in the difficulty of these notions themselves, but in the complex way they were expressed. That is, the increase in Economy is a consequence of that in Transparency or Isomorphy. If, instead, we surmised that Economy rose independently from Transparency, we could not explain how 1SG.OBJ forms were retained.

In many varieties of modern Ecuadorian Quechua, the 1OBJ marker is disappearing. This would entail that the whole category of object agreement would be lost.

A second increase in Economy lies in the loss of the exclusive plural marker. As a result, the inclusive 1st person plural marker now expresses the first person exclusive plural as well. In central Ecuadorian Quechua, there is a separate marker for the third person, kuna, which optionally replaces ku.

6.4.2.2 Transparency

In Ecuadorian Quechua there are no forms like yki and sunki, common in other varieties. In Cuzco Quechua these are port-manteau morphemes expressing subject and object properties. There are no attestations of sunki after the introduction of Quechua into Ecuador. The form yki has been attested in earlier sources, but is not longer observed after 1900 (cf. Muysken 1999).

We argued above that yki and sunki are both fused forms in Cuzco Quechua. In comparison with Cuzco Quechua Transparency has increased in Ecuadorian Quechua, through the loss of these fused forms. When we compare Ecuadorian Quechua with other historically related Quechua II varieties, the difference lies not in the loss of fusion, but in the loss of allomorphy or fission, present in the su - nki combination. In forms like Ayacucho riku-su-rqa-nki-cik, see-’SU’-PAST -2-PL.INCL, ‘he saw you all’, su-nki is either a fissioned form in which 2nd person is expressed twice, or nki is an allomorph of a 3rd person affix. Another possibility is that the latter form is non-isomorphic, in which the 2nd person object is expressed in subject position. No matter how we analyse su-nki, the loss of this form means the promotion of Transparency. The loss of these two non-transparent forms led to the partial increase in Economy discussed above.

6.4.2.3 Isomorphy

In Cuzco Quechua and other Quechua II varieties, plural markers can refer either to the subject or the object, irrespective of the form and position of the pluralised affix in the word. In Ecuadorian Quechua, however, the plural marker cis can only refer to an adjacent affix, and not to the non-adjacent object marker wa. This condition blocks the expression of plural objects, and leads to more Economy as discussed above.

Due to this latter condition, and the loss of non-transparent forms, Ecuadorian Quechua inflection is much more isomorphic than all other Quechua varieties. The following order has no exceptions in Ecuadorian Quechua:

Verb - Der - Obj - Tense - Sub - Num(Sub).
6.4.2.4 Conclusion

All changes in Ecuadorian Quechua are in the direction of more Economy, Transparency, and Isomorphy. Non-transparent forms disappeared, complex orders are blocked, and fewer semantic notions are expressed. In sharp contrast with Bolivian and Argentinean Quechua, there are no changes in the other direction.

6.5 Linguistic and social changes in Quechua

The Quechua area has a core and a periphery. Its core lies in central and southern Peru, where Quechua I and Quechua IIc varieties are spoken. More peripheral are Quechua IIa varieties and Bolivian Quechua. Still more peripheral are Argentinean Quechua, Ecuadorian Quechua, and Amazonian Quechua varieties.

In the core there have been relatively few second language learners in recent times, while the second language learners that learned Quechua in Cuzco had as their first language an Aymaran language which had a similar inflectional structure. In Peru Quechua was transmitted in relatively unbroken generational changes. When we move to the periphery the Quechua varieties were learned by more L2 learners in Bolivia, Ecuador and Argentina. Moreover, the kind of substrate languages begin to differ from Quechua when we move from Peru and Bolivia to Argentina and Ecuador. The learning conditions were also more fragmented in regions on the periphery; in Bolivia access to L1 varieties was more restricted than in Cuzco, but in Argentina and especially in Ecuador speakers of L1 varieties were even more scarce. Finally the amount of prestige negatively correlates with the distance from the former centre of Inca culture, Cuzco. This correlation only fails with respect to Ecuador, where Quechua gained a higher status as an expression of Andean identity - although perhaps not directly from the start. It fits, however, with the observation that Quechua in Argentina is not associated with the cultural values of Andean or Inca identity.

On the basis of this general sketch, we would expect Cuzco Quechua to be more like a Type 1 language than Bolivian Quechua and Argentinean Quechua and Ecuadorian Quechua to be more like a Type 2 language. In addition, we might conclude that all Quechua varieties should, to some extent, display Type 2 language characteristics because of the turbulent Andean history both under the Inca’s and after the Spanish Conquest. I will now examine to what extent verbal inflectional structure was influenced by social factors in each variety.

In the 16th and 17th century the Andean population shrank dramatically. Moreover, large groups of Quechua speakers were moved across the Andes region because of forced labour and pressures of starvation. In such a situation we would expect that survivors from various varieties, and new learners from other language backgrounds would assimilate to each other’s way of speech, and that koineisation processes would occur. Moreover, since complete social and cultural structures were ravaged, we would also expect that norms for ‘correct Quechua’ would be less stable. When Indians from smaller groups would learn Quechua in this situation, more interference from their languages would be expected. Nevertheless, the influence of this period on the general level of complexity in the verbal morphology has been quite small. The simplifications in inflection took place in Ecuador and Argentina for different reasons, and not in Peru itself.
How can this be explained? Perhaps the social disturbances were after all not serious enough to disturb language transmission. Perhaps the new learners of Quechua from other Indian communities could not exert their influence on Quechua, because of the prestige of Quechua or because of the possibly relatively low numbers of learners. Furthermore, perhaps the ayllus were maintained after all. The whole Quechua society may have been threatened, but its basic network structure and its system of language transmission may have remained unaltered.

The Andean catastrophe may be compared to a similar time of crisis in Norway when the Plague struck in the 14th century, decimating the population. It was in this period that Norwegian fundamentally changed its inflectional structure. There was a lack of central linguistic norms, and a high-prestige influence from High German traders, which led to loss of irregularities and categories in Norwegian. Perhaps the difference between Scandinavian and Quechua simplification does not lie in social circumstances but in the agglutinative structure of Quechua which may be more stable than Old Norse structure. Although there are quite a few categories in Quechua, the structure is relatively transparent in comparison with Old Norse structure.

Ecuadorian Quechua is much more Transparent and Economic than Bolivian and Peruvian varieties. Adelaar (1979: 483) says: “The general picture [of the Quechua morphology, WK] displays a great complexity together with great regularity. Except for the dialects of Ecuador and Columbia, where it has largely been lost, we see this morphological complexity in all modern dialects of Quechua.”171 This can be explained by two general differences between Ecuadorian and other varieties. First of all, the L2 learners of Quechua in Cuzco, and later in Bolivia were native speakers of Aymaran languages, which have an inflectional structure quite similar to Quechua (Cerrón-Palomino 1994: 103ff.). L2 learners in Cuzco and in Cochabamba were therefore already accustomed to a number of Quechua categories, fused morphemes, and unexpected affix ordering. The substrate languages of Quechua learners in Ecuador are hardly known, but it is quite conceivable that these languages did not have a similar structure.172 Therefore, the distance to Quechua structure may have been larger, and these learners may have reduced the complex affix structure of Quechua. In Swahili L1 similarity also determined the extent of simplification in Katanga Swahili. As in Swahili, it is not only substrate influence that modified language structure in Ecuador.

The changes in Ecuadorian Quechua do not only lie in verbal inflection. Simplifications can also be found in the nominal inflection, in derivation, and in the phonology. If these changes were all due to substrate influence, we would expect to find some positive evidence of interference as well, which has not been apparent so far. Moreover, the new Ecuadorian system is not just old Quechua in a more analytic form. Instead, we find in Ecuador that relatively complex forms have been filtered out. Therefore, it is likely that Ecuadorian Quechua was heavily influenced by the Chinchay traders who came to Ecuador and used Quechua as a lingua franca. During its use as a communication tool between merchants on the coast and in the highlands, Quechua became simplified. Complex forms were avoided to make communication as smooth as possible. Quechua

171 “Het algehele beeld is er echter een van grote complexiteit, naast grote regelmatigheid. Behalve in de dialecten van Ecuador en Columbia, waar zij voor een groot deel verloren is gegaan, vinden we deze morfologische complexiteit in alle moderne Quechua-dialecten terug.”

172 They may include Barbacoan languages (Adelaar, pers.comm.).
was acquired as a second language mainly by adults who were not corrected by a strong Quechua norm. When other Quechua varieties spread over Ecuador during the Inca period, the basis of Ecuadorian Quechua was already strong enough to block the introduction of more complex forms, like su-nki.

Muysken (1999) discusses the development of Ecuadorian Quechua after the Spanish Conquest. Some of the complex inflectional forms, like the fused morpheme yki, are still found in early Spanish sources. This might indicate that the Spanish source was influenced by Cuzco Quechua. However, it could also be a delayed effect of the simplifications started during the early spread of Quechua in Ecuador. Perhaps the loss of su-nki and the loss of plural objects in early Ecuadorian Quechua set a chain reaction in motion, which ultimately affected the whole person-number agreement system. By analogy yki was lost, and the only possible object marker left, wa, 1SG, was less frequently used (as is the case today), and completely lost in some varieties.

We could rephrase this by saying that early Ecuadorian Quechua object inflection had become unstable, when some aspects were not transmitted to Ecuador. When later Quechua was still used as a communication tool between different ethnic groups in Ecuador, the instability caused further changes. This picture corresponds to what happened in early Scandinavian. Because of several changes in metrical and phonological structure Old Norse had become an unstable language. Only a few social changes were needed, as on the Faroe Isles, to further destabilise the situation. The difference with Ecuadorian Quechua is that Ecuadorian Quechua was already halfway between a ‘complete’ system and a renewed reduced inflectional system, while Old Norse was at its height of inflectional complexity. That is, Old Norse was out of balance because of its total amount of complexity, while Ecuadorian Quechua was prone to change because there were inconsistencies in the inflectional paradigm.

The more limited simplification that occurred in Bolivian Quechua in comparison with Ecuadorian Quechua is in line with my hypotheses. The modified inflectional structure can be correlated to the way Quechua was transmitted to Bolivia. Spanish missionaries played a part and thus the new Quechua learners did not always have native speakers as their role models. Quechua spread slowly through Bolivia, and was mainly acquired by both adults and children who spoke Aymara as their first language. As a result Bolivian Quechua is hardly more Transparent or Economic than Cuzco Quechua. The changes that occurred in Bolivian inflections were not the result of Quechua being used as a lingua franca, or a trade language. Instead, the changes resulted from minor reanalyses of Quechua IIc structures, which had major ramifications (see above). These minor reanalyses which may have resulted from the particular Quechua varieties spoken in Bolivia, were also influenced by substrate languages. The loss of a separate ku-affix may be attributed to the lack of a separate number slot in Aymara.

In Southern Quechua, su is on its way to becoming a transparent object marker. This extension and regularisation of object agreement may be an autonomous change. Nevertheless, the occurrence of this change in Southern Quechua may be boosted by migrants from Cajamarca, because, as we saw above, in Cajamarca Quechua there has been a similar change in the status of su. This change is especially apparent in Argentinean Quechua, which suggests that influence from non-Cuzco varieties was higher in Argentina than in Bolivia. Although there are differences in the intensity of the changes, the similar direction of change in Bolivian and Argentinean Quechua suggests
that these two varieties have influenced each other as well, which is not remarkable, in
the light of their location and history (cf. section 6.1).

The greater diversity found in Quechua varieties may have caused Argentinean Quechua
to develop stronger simplification than Bolivian Quechua. In addition, the L1 learners
had more diverse backgrounds in Argentina. There were speakers of various unrelated
Indian languages, as well as Spanish learners of Quechua. Moreover, Argentina had less
contact with the Quechua heartland than Bolivia. Finally, Quechua was a lingua franca
between various groups in Argentina. It served communicative purposes, and there was a
weak connection with Andean identity. Thus we can confidently assume that Argentinean
Quechua would display more Type 2 characteristics than Bolivian Quechua, and indeed
it does. Cerrón-Palomino (1987: 347) says:

"After all, Argentinean [Quechua], like Ecuadorian [Quechua], displays a process of
reduction in the derivative mechanisms of the language, a fact that is best explained as the
effect of imperfect learning. When the links with Cuzco were cut, the mestizos and creoles
would have learned Quechua in the same way as those who tried to learn the Cuzco
variety. As a result, they spoke the Ayacucho variety, that is, without aspiration or
glottalisation.”

However, Argentinean Quechua is far less Transparent and Economical than Ecuadorian
Quechua, although when examined on a superficial level, both countries display similar
social patterns. This may be explained by substrate differences; perhaps the original
Argentinean languages had more in common with Quechua than the Ecuadorian
languages. A more plausible explanation is that Ecuadorian Quechua spread over a
region where all speakers of Quechua were basically second language learners, while in
Argentina there was a core of Quechua ‘mita’ speakers, who functioned as a norm of
‘correct’ Quechua. In other words, Ecuadorian Quechua became less complex because it
was brought to the region by second language speakers and it was used there almost
exclusively as a second language. By contrast, Argentinean Quechua had always been
valued, since its introduction, as a means of inter-ethnic communication and was not used
exclusively for trading purposes or only by foreign language learners.

I will now turn to a few general linguistic observations on Quechua simplification
processes. When we compare what happened in Quechua with our predictions in 2.6, we
find that Economy is not as important as predicted. The number of categories has only
been substantially reduced in Ecuadorian Quechua. This high retention of categories may
either be due to the Quechua agglutinative structure, or to social factors, that might not
have been extreme enough to invoke more radical simplification. With respect to
Transparency Ecuadorian Quechua substantiates the theory that allomorphy and fusion
are avoided. In some cases, accidental homonymy has also been reduced (cf. section
6.3.3.4). The fusion of n-ku and y-ku and its consequences for Southern Quechua show
that changes in the extent of Transparency also has its own dynamics. Although the

173 “Después de todo, el argentino muestra, como el ecuatoriano, un proceso de reducción de los
mecanismos derivativos de lengua, hecho que se aviene mejor como efecto de un aprendizaje
imperfecto. Cortados los vínculos con el Cuzco, los mestizos y criollos habrían aprendido el
quechua como actualmente lo hacen quienes procuran aprender la variedad cuzqueña: a la larga se
termina hablando ayacuchano, es decir sin aspiración ni glotalización.”

174 That is, at least during its introduction in Ecuador. Later, when Quechua spread over wider
areas in Ecuador, it gained, of course, more native speakers.
predictions on Isomorphy are diffuse, we have found that both in Southern Quechua, and especially in Ecuadorian Quechua, Isomorphy has preference.

We saw in the chapters on Arabic and Scandinavian that the morphological simplification processes could also be analysed as incidental effects of other language-internal changes. For Scandinavian, and Germanic in general, it has been argued that early stress shift would explain later loss of inflection. For Arabic the argument is that a combination of universal laws of change and incidental phonological changes would be the basis for morphological simplification. Such language-internal explanations are implausible for Quechua.

First of all, the Quechua affixes vanished quite abruptly, and there were no intermediate stages in which there was a phonologically reduced form. Other parallels with processes of affix loss in Indo-European also fail, because the kind of affixes that disappeared in Quechua were not word-final, and they disappeared without any other stress shift, as in Germanic languages.

Moreover, two Quechua varieties contain a shift in metrical structure which is similar to those found in Germanic. In both Cuzco and Bolivian Quechua conditions on syllable structure have changed. Mannheim (1991) shows that the paradigmatic possibilities in the syllable onset have increased in these varieties, while at the same time the number of possible consonants in final positions has been reduced. We could expect that, as in Scandinavian, an enrichment of the beginning of a unit, such as the syllable in Quechua, might lead to erosion at the end of the syllable and the word. This is not the case, either in Cuzco Quechua itself or in any of the varieties based on it. Of course, this points to a quite different phonetic and prosodic structure in Quechua. However, it also suggests that the correlation between loss of erosion and shift in syllable peaks is less straightforward than our studies of Scandinavian imply.

Another common explanation for simplification suggests that historical laws could forbid certain categories, like the dual in Arabic, and uphold the removal of suffixes from the language (cf. Hodge 1970). However, except for Ecuadorian Quechua, we do not see any tendency in Quechua to reduce and erode affixes or to avoid certain categories. On the contrary, long strings of affixes are viable in all Quechua varieties, under circumstances of language contact, migration and demographic and social changes.

When reviewing the simplifications in Argentinean and Ecuadorian Quechua, we note that no affixal positions have been lost. Length of suffixal strings appear to be of no consequence to simplification in Quechua. When we compare this finding with what happens to prefixal strings in Swahili we may tentatively conjecture that suffixal strings are more stable in language change. This complies with acquisitional and typological findings that show easier processing of suffixes (cf. section 2.4.4.2). However, other social factors may account for this difference between Quechua and Swahili simplification.

The number of inflectional allomorphic affixes increase in Bolivian and Argentinean Quechua (cf. Lakämper & Wunderlich 1998). This apparent tolerance for allomorphy in languages that are moving towards a Type 2 kind of structure, is shared with Norwegian and Katanga Swahili.

Another observation is that Quechua simplification not only involves Economy but also Transparency and Isomorphy. In contrast, in both Arabic and Scandinavian
simplification, specific categories are more prone to simplification than a specific string of affixes or a specific expression. In Quechua, however, categories, like ‘plural object’ are also lost as a result of earlier promotions of Isomorphy or Transparency. In the next section on OT I will further elaborate on this.

6.6 Quechua changes from the perspective of Optimality Theory

6.6.1 Introduction

Three aspects of Quechua inflectional change are of crucial importance to this study. They are: the loss of all complex inflection in Ecuadorean Quechua; the fusion of plural and subject marking in Southern Quechua; and the rise of *su as a 2nd person object marker in Southern Quechua. The constraints playing a major role in these discussions are:

LEX, the highest ranked constraint in all languages (cf. section 3.3.1) says: “A complex sign is well-formed if and only if it consists only of morphemes.”

Several constraints belong to the family of faithfulness constraints: the Max-constraints, namely Max(Sub), Max(Obj), Max(Num), Max(1Sg,Obj), Max(1Plur), Max(2), and Max(Pl), which require expression of features like subject agreement, plural and 2nd person to be as complete as possible. Often these features are not expressed in one separate affix, but in a fused affix. I count expression of features in fused affixes as one violation of the corresponding Max-constraint, and complete absence of the feature as a double violation of the constraint. As in other languages with fused and fissioned affixes, Max(Cat) also plays a role. Max(Cat) prefers a candidate with an affix that expresses features a and b above a candidate expressing only b.

In interaction with the faithfulness constraints, markedness constraints play an important role in Quechua. For example, constraints such as *[Num, Obj] and *[Obj] forbid specific features and feature combinations and *Disc forbids discontinuous affixes. *[X, Y]disc forbids X and Y in discontinuous affixes, and *[X, Y]aff in affixes in general.

Max(Order) is the counterpart in OT terms of the Isomorphy Principle. It consists of subconstraints like Adjac, which demands that a feature that relates to another feature must be expressed adjacent to the affix that expresses the other feature. The precise content of Max(Order) depends on our view of the Isomorphy Principle. Max(Order) may demand that the order in the morphology follows the order in syntax. Max(Order) may also demand that the order in the morphology complies with a universal order of categories, based on relevance of the category for the verb stem (cf. section 3.3.2). In this section I understand Max(Order) as stating that the order of affixes should be: OBJ - Tense - SUB - NUM, where NUM may only refer to the adjacent SUB marker.

6.6.2 Simplification in Ecuadorean Quechua

Essentially the changes in Ecuadorean Quechua result from the loss of complex expressions with object agreement, involving the affixes, *yki, *su-nki, and *wa-ncis. In addition the combination of the object marker *wa with the number marker *ku referring to this object has become impossible. In informal terms this last change can be phrased as the loss of the possibility of *wa to be combined with the rest of the inflectional complex. In other varieties of Quechua this affix had a more thematic instead of inflectional role; it
expressed that the action described by the verb moved in the direction of, or was directed at the speaker. This earlier function of *wa* seems to return in Ecuadorian Quechua.

We can model these changes from Ayacucho to Ecuadorian Quechua by a demotion of the faithfulness constraint Max(Obj). The choice of constraints that are promoted above Max(Obj) lead to three different formulations in OT terms of the changes in Ecuadorian Quechua.

In the first proposal the loss of complex object marking may be related to the demotion of a constraint that forced the use of fused affixes: Max(Cat). The lowering of this constraint under Max(Sub) entails that the optimal expression for subject agreement is without fused affixes. Since 2nd person object markers are fused with subject markers in Quechua, the demotion of Max(Cat) automatically leads to partial loss of object agreement. The promotion of Max(Sub) above Max(Cat) corresponds to an explanation for Ecuadorian simplification in terms of increasing Transparency. However, with this solution we cannot explain why *ku* no longer pluralises the object marker. Therefore, the promotion of another constraint is also needed, like *[Num, Obj], or Adjac, which forbids the plural marker *ku* to refer to the object affix. In this scenario, the Ayacucho Quechua constraint ranking is as in Figure 6.3.

\[
\text{Max(Cat)} \quad \text{Max(Sub)} \quad \text{Max(Obj)} \quad \text{Max(Num)} \quad \text{Adjac/*[Num, Obj]}
\]

Figure 6.3 Constraint dominance relations in Ayacucho Quechua (Proposal 1)

<table>
<thead>
<tr>
<th>Tableau 6.1 Input: Ayacucho Quechua <em>riku-</em>?-<em>ra</em>-? see+PAST+2OBJ+3SUB</th>
<th>Max(Cat)</th>
<th>Max(Sub)</th>
<th>Max(Obj)</th>
<th>Adjac/*[Num, Obj]</th>
</tr>
</thead>
<tbody>
<tr>
<td>*riku-su-<em>ra</em>-nki</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>PAST+2OBJ+3SUB</td>
<td>**</td>
<td>**</td>
<td>**</td>
<td>**</td>
</tr>
<tr>
<td>*riku-<em>ra</em>-ø PAST+3SUB</td>
<td>**</td>
<td>**</td>
<td>**</td>
<td>**</td>
</tr>
</tbody>
</table>

The winning candidate in Tableau 6.1 is *riku-su-*ra*-nki*, because it is most specific in its expression of categories. In other words, it complies with Max(Cat), which ranked highest in Ayacucho Quechua.\(^{175}\) This candidate has one violation mark under Max(Sub) and Max(Obj) since it expresses subject and object agreement with a fused, and even discontinuous affix (*su-nki* is a discontinuous port-manteau morpheme, cf. section 6.2.2.2). The other candidate, however, does not express the maximal number of features, and is therefore a violation of high-ranked Max(Cat). In the next tableaux we see that the ranking in Ecuadorian Quechua is as in Figure 6.4, where Max(Sub) and Adjac/*[Num, Obj] have risen (phonological shapes are given as in Ayacucho Quechua).

\(^{175}\) The position of Max(Num) above Adjac follows from winning candidates like *riku-wa-*ra*-nki-ku*, where *ku* pluralises the non-adjacent object marker.
Tableau 6.2 Input: Ecuadorian Quechua riku-*rqa-* see+PAST+2OBJ+1SUB

<table>
<thead>
<tr>
<th></th>
<th>Max(Sub)</th>
<th>Max(Cat)</th>
<th>Max(Obj)</th>
</tr>
</thead>
<tbody>
<tr>
<td>riku-rqa-yki PAST+2OBJ+1SUB</td>
<td>*!</td>
<td>;</td>
<td>*</td>
</tr>
<tr>
<td>riku-rqa-ni PAST+1SUB ⋐</td>
<td>;</td>
<td>* ;</td>
<td>**</td>
</tr>
</tbody>
</table>

Tableau 6.2 shows that Max(Cat) has been demoted.

Tableau 6.3 Input: Ecuadorian Quechua riku-*rqa-* see+PAST+1OBJ+3SUB

<table>
<thead>
<tr>
<th></th>
<th>Max(Sub)</th>
<th>Max(Cat)</th>
<th>Max(Obj)</th>
</tr>
</thead>
<tbody>
<tr>
<td>riku-wa-rqa-ø PAST+1OBJ+3SUB ⋐</td>
<td>;</td>
<td>;</td>
<td>;</td>
</tr>
<tr>
<td>riku-rqa-ø PAST+3SUB</td>
<td>;</td>
<td>*! ;</td>
<td>;</td>
</tr>
</tbody>
</table>

Tableau 6.3 shows that the analysis with Max(Cat) explains the maintenance of riku-wa-rqa-ø, while an alternative analysis with the promotion of a filter constraint like *[Obj] would not suffice, because in that case riku-rqa would win. Instead, it is only a fused object agreement that is impossible in Ecuadorian Quechua.

Tableau 6.4 Input: Ecuadorian Quechua riku-*rqa-* see+PAST+1OBJ-PL+3SUB

<table>
<thead>
<tr>
<th></th>
<th>Max(Sub)</th>
<th>Adjac</th>
<th>Max(Cat)</th>
<th>Max(Obj)</th>
<th>Max(Num)</th>
</tr>
</thead>
<tbody>
<tr>
<td>riku-wa-rqa-n-ku PAST+1OBJ-PL+3SUB ⋐</td>
<td>;</td>
<td>;</td>
<td>*!</td>
<td>;</td>
<td>;</td>
</tr>
<tr>
<td>riku-rqa-ø PAST+3SUB ⋐</td>
<td>;</td>
<td>;</td>
<td>**!</td>
<td>**</td>
<td>**</td>
</tr>
<tr>
<td>riku-wa-rqa-ø PAST+1OBJ(-SG)+3SUB ⋐</td>
<td>;</td>
<td>;</td>
<td>*!</td>
<td>;</td>
<td>;</td>
</tr>
</tbody>
</table>

Tableau 6.4 shows that the promotion of Max(Sub) cannot explain the impossibility of riku-wa-rqa-n-ku. In addition the promotion of a constraint like Adjac, or *[Num, Obj], is needed. In this tableau riku-wa-rqa-ø appears to be the optimal candidate for the Input see+PAST+1OBJ-PL+3SUB, but this, however, does not correspond to the data. Instead, riku-rqa-ø should be the optimal candidate (cf. the question marks). We may solve this by claiming that riku-wa-rqa-ø crashes, because the absence of a plural marker would be interpreted as singular number. Therefore, riku-rqa-ø is the optimal candidate. This is, however, a rather ad hoc solution.176

Apart from this problem, the disadvantage of this approach is that the promotion of Adjac and demotion of Max(Cat) accidentally take place at the same time. That is, we do not know of any instances where these two changes are unrelated, that is, where only ku is forbidden to refer to the object marker, with the affixes yki and sunki intact, or where

---

176 Another solution for the impossibility of riku-wa-rqa with a plural meaning is to analyse 1st person and plurality as a unit, which must be expressed as a whole or not at all. In such an analysis, wa-ku would disappear, either because it is a discontinuous affix (in proposal 1), because it is a violation of *[Num, Obj] (in proposal 2), or because it does not comply with Max(Order) (in proposal 3).
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the complex affixes have disappeared while ku still refers to the object. The advantage of this approach is that it underscores the notion that Ecuadorian Quechua prefers transparent marking.

A more uniform explanation for the Ecuadorian changes lies in the promotion of more general Economy constraints above Max(Obj). In this proposal all markedness constraints that concern a non-1st person singular object are promoted. We can phrase this differently by proposing a specific faithfulness constraint, Max(1Sg.Obj) above a general markedness constraint, *[Obj]. The ranking of Max(Cat), which I will not show here, remains stable in this proposal. The constraint ranking in Ecuadorian Quechua with respect to object agreement would have changed as follows:

Ayacucho Quechua Max(Obj) >> *[Obj].

Ecuadorian Quechua: Max(1Sg.Obj)>> *[Obj] >> Max(Obj).

In this ranking Max(1Sg.Obj) is the only part of Max(Obj) that remains ranked above *[Obj]. This constraint reranking explains Ecuadorian simplification as an increase of general Economy. In this proposal the Ayacucho order is as in Tableau 6.5.

Tableau 6.5 Input: Ayacucho Quechua riku-?-rqa-? see+PAST+2OBJ+3SUB

<table>
<thead>
<tr>
<th></th>
<th>Max(Obj)</th>
<th>*[Obj]</th>
</tr>
</thead>
<tbody>
<tr>
<td>riku-su-rqa-nki see+PAST+2OBJ+3SUB</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>riku-rqa-ø see+PAST+3SUB</td>
<td>**!</td>
<td></td>
</tr>
</tbody>
</table>

In Ecuadorian Quechua, Output like riku-su-rqa-nki see+PAST+2OBJ+3SUB and riku-wa-rqa-n-ku see+PAST+1OBJ-PL+3SUB are evaluated as non-optimal since they violate *[Obj], cf. Tableau 6.6 and Tableau 6.7.

Tableau 6.6 Input: Ecuadorian Quechua riku-?-rqa-? see+PAST+2OBJ+3SUB

<table>
<thead>
<tr>
<th></th>
<th>Max(1Sg.Obj)</th>
<th>*[Obj]</th>
<th>Max(Obj)</th>
</tr>
</thead>
<tbody>
<tr>
<td>riku-su-rqa-nki see+PAST+2OBJ+3SUB</td>
<td></td>
<td>*</td>
<td></td>
</tr>
<tr>
<td>riku-rqa-ø see+PAST+3SUB</td>
<td></td>
<td></td>
<td>**!</td>
</tr>
</tbody>
</table>

Tableau 6.7 Input: Ecuadorian Quechua riku-?-rqa-? see+PAST+1OBJ-PL+3SUB

<table>
<thead>
<tr>
<th></th>
<th>Max(1Sg.Obj)</th>
<th>*[Obj]</th>
<th>Max(Obj)</th>
</tr>
</thead>
<tbody>
<tr>
<td>riku-wa-rqa-n-ku see+PAST+1OBJ+3SUB+PL</td>
<td></td>
<td>*</td>
<td></td>
</tr>
<tr>
<td>riku-rqa-ø see+PAST+3SUB</td>
<td></td>
<td></td>
<td>**</td>
</tr>
</tbody>
</table>

The only object agreement forms that are still optimal are candidates with an object marker for the first singular.

Tableau 6.8 Input: Ecuadorian Quechua riku-?-rqa-? see+PAST+1OBJ+2SUB

<table>
<thead>
<tr>
<th></th>
<th>Max(1Sg.Obj)</th>
<th>*[Obj]</th>
<th>Max(Obj)</th>
</tr>
</thead>
<tbody>
<tr>
<td>riku-wa-rqa-nki see+PAST+1OBJ+2SUB</td>
<td></td>
<td>*</td>
<td></td>
</tr>
<tr>
<td>riku-rqa-nki see+PAST+1OBJ+2SUB</td>
<td></td>
<td></td>
<td>**!</td>
</tr>
</tbody>
</table>

I abstract away from the constraint *[3Obj], that is ordered above Faith(Obj) in all Quechua varieties.
In this solution the restriction on ku to refer only to adjacent affixes follows from the order Max(1Sg.Obj) >> *[Obj] >> Max(Obj). These constraints simply forbid plural objects. The downfall of this argument lies in the fact that it is by sheer accident that both the specific constraint Max(1Sg.Obj) ranks high, and that the corresponding wa affix is a lexically uniform affix, in contrast with e.g. yki.

The third solution is the promotion of a constraint based on the Principle of Isomorphy, which demands that the affix order strictly obeys the order OBJ - Tense - SUB - NUM(SUB). That is, suffixes in OBJ-position may only have features that refer to the object, suffixes in SUB may only have subject features, and in the final position number may only refer to the subject marker, its adjacent affix. This constraint, Max(Order), forbids deviant orderings of categories, and it also forbids non-adjacent references. The promotion of such a constraint entails the loss of the forms that were lost in Ecuadorian Quechua. The earlier Ayacucho Quechua order versus the later Ecuadorian Quechua order would be:

Ayacucho Quechua: Max(Num) // Max(Obj) >> *[Obj] // Max(Order).
Ecuadorian Quechua: Max(Order) >> Max(Num) // Max(Obj) >> *[Obj].

Tableau 6.9 Input: Ayacucho Quechua riku-? - rqa-? see+PAST+2OBJ+3SUB

<table>
<thead>
<tr>
<th></th>
<th>Max(Num)</th>
<th>Max(Obj)</th>
<th>*[Obj]</th>
<th>Max(Order)</th>
</tr>
</thead>
<tbody>
<tr>
<td>riku-su-rqa-nki see+PAST+2OBJ+3SUB</td>
<td></td>
<td>*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>riku-rqa-ø see+PAST+3SUB</td>
<td>**</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Tableau 6.10 Input: Ayacucho Quechua riku-? - rqa-? see+PAST+1OBJ-PL+3SUB

<table>
<thead>
<tr>
<th></th>
<th>Max(Num)</th>
<th>Max(Obj)</th>
<th>*[Obj]</th>
<th>Max(Order)</th>
</tr>
</thead>
<tbody>
<tr>
<td>riku-wa-rqa-n-ku see+PAST+1OBJ-PL+3SUB</td>
<td></td>
<td></td>
<td>*</td>
<td></td>
</tr>
<tr>
<td>riku-rqa-ø see+PAST+3SUB</td>
<td>**</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>riku-wa-rqa-n see+PAST+3SUB</td>
<td>**</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Tableau 6.11 Input: Ecuadorian Quechua riku-? - rqa-? see+PAST+2OBJ+3SUB

<table>
<thead>
<tr>
<th></th>
<th>Max(Order)</th>
<th>Max(Num)</th>
<th>Max(Obj)</th>
<th>*[Obj]</th>
</tr>
</thead>
<tbody>
<tr>
<td>riku-su-rqa-nki see+PAST+2OBJ+3SUB</td>
<td>*</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>riku-rqa-ø see+PAST+3SUB</td>
<td></td>
<td>**</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Tableau 6.12 Input: Ecuadorian Quechua riku-? - rqa-? see+PAST+1OBJ-PL+3SUB

<table>
<thead>
<tr>
<th></th>
<th>Max(Order)</th>
<th>Max(Num)</th>
<th>Max(Obj)</th>
<th>*[Obj]</th>
</tr>
</thead>
<tbody>
<tr>
<td>riku-wa-rqa-n-ku see+PAST+1OBJ-PL+3SUB</td>
<td>*</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>riku-rqa-ø see+PAST+3SUB</td>
<td></td>
<td>**</td>
<td>**</td>
<td></td>
</tr>
<tr>
<td>riku-wa-rqa-ø see+PAST+1OBJ (-SG) +3SUB</td>
<td></td>
<td>**</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
In Tableau 6.9 and Tableau 6.10 Max(Order) is ranked low, and all orderings are possible as long as the material stems from the lexicon. In Tableau 6.11 and Tableau 6.12 everything that does not conform to the template OBJ- Tense- SUB- NUM(SUB) is weeded out. This analysis, however, has the same problems with riku-wa-rqa-ø, (cf. Tableau 6.12) as the first proposal.

When comparing these three proposals, the first proposal looks the worst, since it has the problem of letting riku-wa-rqa-ø slip through, when it should not (cf. Tableau 6.4), and moreover, it uses more rerankings than the other two proposals. The third proposal has the same problem with riku-wa-rqa-ø but, in contrast with the second proposal, it explains why one particular object agreement form, wa, is still possible.

In addition, Ecuadorian Quechua history gives added insight into the workings of the various constraint rerankings. When we look at the history of Ecuadorian Quechua in more detail we find that sunki has not been attested in Ecuador, yki was attested until 1900, and wa is now disappearing. There are no data about how the plural object function of ku disappeared. These historical facts are problematic for the first proposal. The demotion of Max(Cat) below Max(Sub) needs an extra stipulation for the stage where su-nki disappeared while yki was still present in the language. This could be an initial promotion of a filter like *Disc, which forbids discontinuous affixes. This constraint only forbids -su-nki-, and -wa-ncis. In the next stage Max(Cat) may have been demoted. The loss of wa in some contemporary varieties of Quechua is an extra problem for this proposal. The third proposal also fails to justify the earlier disappearance of sunki. This could be resolved by splitting Max(order) into two constraints that behave differently with respect to yki and sunki. However, it is not clear what form these sub-constraints might take. In addition, the rise of Max(order) cannot explain the loss of wa. The second proposal can deal with all historical facts, when we assume that markedness constraints of an increasingly more general nature are promoted above the faithfulness constraint. However, this proposal cannot explain the path of loss of object agreement marking, though it can explain why wa finally disappeared. In this perspective, the loss of wa is the final completion of the gradual promotion of the markedness constraint *[Obj] above all parts of the Max(Obj) constraint.

The three kinds of constraints involved in the three proposals do not oppose each other, but actually reinforce each other. That is, when one of the constraints is promoted, the other constraints may be promoted as well, since they become floating. For example, when Max(Order) is ranked high, the markedness constraint *[Obj] floats with the Max(Obj) constraint, except for the Max(1Sg.Obj). This is shown when we replace the order of the third proposal Max(Order) >> Max(Obj) >> *[Obj], by the empirically equivalent order, Max(Order) >> Max(1Sg.Obj) >> *[Obj] // Max(Obj). In the third proposal *[Obj] and Max(Obj) are floating while their order is relevant in the second proposal. In other words, the rise of the Isomorphy constraint facilitates partial rising of Economy and Transparency constraints. Therefore, the constraints may have risen through mutual interaction.

Moreover, since each of the three reranking proposals has weak and strong aspects, we can outline a plausible scenario in which we relate the several reranking possibilities to the historical periods. In this scenario, simplification started with the loss of wa-ncis and su-nki which is explained by the promotion of a constraint that forbids discontinuous affixes: *Disc. This constraint caused Max(Sub) and Max(Cat) to float for most of the
cases, except with respect to \( yki \), which compelled Max(Cat) to rank higher than Max(Sub). In the next stage the only fused affix, \( yki \), disappeared as well and Max(Sub) no longer contained any exceptions, which implied that Max(Sub) was promoted. This promotion in turn made Max(Order) float for most of the cases with Max(Num), since only the pluralisation of the object by \( ku \) still violated Max(Order). Again, after complete generalisation of Max(Order) this function of \( ku \) was lost, and Max(Order) was promoted above Max(Num). Thus, Max(Order) was given a higher ranking, while *[Obj] and Max(Obj) were floating for most forms, with the exception of those forms containing the affix \( wa \). This affix compelled Max(1Sg.Obj) to be ranked higher than *[Obj]. Now, if *[Obj] is also generalised, \( wa \) may disappear, as happens in some contemporary varieties. Finally, after lexicon reordering, that is, after the removal of non-used affixes, both *Disc, Max(Cat), Max(Num), and *[Obj] are floating in the sense that they are never violated by any possible candidate that complies with LEX. This removal of all lexically licensed candidates that would violate high-ranking faithfulness constraints is called lexicon optimisation (cf. section 3.4). The order of simplification is as in Figure 6.5. At each step, the promotion of a constraint implies the loss of a complex aspect of Quechua inflection. Each promotion reorders the grammar and the lexicon with the effect that the promotion of the next constraint is facilitated.

<table>
<thead>
<tr>
<th>Ay.Quechua</th>
<th>*Disc ( \rightarrow ) Max(Order) ( \rightarrow ) *Obj</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>*Disc ( \rightarrow ) Max(Cat) ( \rightarrow ) Max(Sub) ( \rightarrow ) Max(Obj) ( \rightarrow ) Max(Num) ( \rightarrow ) Max(Order) ( \rightarrow ) *Obj</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Ec.Quechua</th>
<th>*Disc ( \rightarrow ) Max(Order) ( \rightarrow ) *Obj</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>*Disc ( \rightarrow ) Max(Sub) ( \rightarrow ) Max(Order) ( \rightarrow ) *Obj</td>
</tr>
</tbody>
</table>

**Figure 6.5 Constraint reranking from Ayacucho to Ecuadorian Quechua**

The change from Ayacucho to Ecuadorian Quechua consisted mainly in constraint reranking. The lexicon did not change fundamentally, except for the affixes that could not surface anymore. These disappeared from speech and the lexicon was optimised. Table 6.9 shows the affixes in Ayacucho. The crossed affixes indicate the affixes that disappeared from Ecuadorian Quechua. In section 6.6.3 we will see that change in Southern Quechua had a much larger lexical component.
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Table 6.9 Inflectional affixes in Ayacucho and Ecuadorian Quechua

<table>
<thead>
<tr>
<th>Form</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>-ni</td>
<td>+1</td>
</tr>
<tr>
<td>-nki</td>
<td>+2</td>
</tr>
<tr>
<td>-n/o</td>
<td>+3</td>
</tr>
<tr>
<td>-ncis</td>
<td>1.incl</td>
</tr>
</tbody>
</table>
| -ku   | pl.excl.
| -cis  | pl.incl.
| -wa   | 1.obj   |
| -yki  | 1/2     |
| -su   | 3/2     |
| -rqa  | +past   |

6.6.3 Changes in Southern Quechua

In the Southern Quechua varieties inflectional changes did not only concern affix loss as in Ecuador. Affix content was reinterpreted, affixes were fused, but also separated, and their distribution was modified. In section 6.3.3.2 I discussed the changes in the south under two headings: the fusion of the plural marker ku with the subject markers y and n, and the tendency of su to express only 2nd person object.

The fusion of subject markers and the plural marker as a lexical change may be attributed to a reinterpretation of Cuzco Quechua by Bolivian speakers (cf. Van de Kerke 1996a, b).178 Because of this fusion, combinations of categories where a plural marker was added to an affix other than y or n could no longer be expressed. Instead of the earlier Cuzco forms other affix combinations were used and some categories were chosen at the expense of others, cf. Table 6.10 for the past tense in Bolivian Quechua.

In OT terms we rephrase this as follows: due to the new fused affixes, in several instances faithfulness constraints conflict with each other. For instance, in the first row in Table 6.10, in Bolivian Quechua either Max(1), Max(1Pl), or Max(2) must be violated in order to comply with Lex. In Cuzco Quechua, owing to the non-fused y-ku and n-ku affixes, the optimal candidate is able to comply with all three faithfulness constraints. In this respect, there is less lexicon optimisation in Bolivian Quechua. That is, in Cuzco Quechua the lexicon provides (non-fused) morphemes that result in fewer violations of faithfulness constraints than in Bolivian Quechua.

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178 This fusion could be the result of an earlier stage in which all instances where ku was not adjacent to y or n were wiped out, which resulted into the reinterpretation of y-ku and n-ku.
On the basis of Table 6.10 it appears that the first person, and plurality of the first person are most important in Bolivian, cf. the column under ‘Output meaning’. When these are involved, other persons and other numbers, irrespective of whether they are subject or object, are less important. In OT terms the ranking in Bolivian Quechua is Max(1Plur) // Max(1) >> Max(2) // Max(3) // Max(Pl), cf. Tableau 6.13. In Argentinean there is one exception: 1 PL // 2PL is reduced to ra-yki-cis, 1 // 2PL, while it is reduced to rqa-yku, 1PL in Bolivian. Therefore, the ranking of Max(1Pl) and Max(2) is less strict in Argentinean Quechua.

Table 6.10 Cuzco and Bolivian Quechua expressions of complex feature combinations

<table>
<thead>
<tr>
<th>Input</th>
<th>Cuzco Output form</th>
<th>Output meaning</th>
<th>Bolivian Output form</th>
<th>Output meaning</th>
<th>Comments (A=Alternative)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1pl→2sg</td>
<td>rqa-yyi-ku</td>
<td>1pl→2</td>
<td>rqa-yku</td>
<td>1pl</td>
<td>A: omit number in rqa-yyi. In Argentinean su has extended to 1pl→2sg: su-ra-yyi</td>
</tr>
<tr>
<td>1pl→2pl</td>
<td>rqa-yyi-ku</td>
<td>1pl→2</td>
<td>rqa-yku</td>
<td>1pl</td>
<td>A: omit object number in rqa-yyi-cis, which is the Argentinean form.</td>
</tr>
<tr>
<td>3pl→2sg</td>
<td>rqa-sunki-ku</td>
<td>3pl→2</td>
<td>su-rqa-nku</td>
<td>3pl→2</td>
<td>This form forces a reanalysis of su. Alternatives: rqa-nku, 3pl or su-rqa-nki, 3→2</td>
</tr>
<tr>
<td>2sg→1plex</td>
<td>wa-rqa-nki-ku</td>
<td>2→1plex</td>
<td>wa-rqa-yku</td>
<td>1pl</td>
<td>A: omit number in wa-rqa-nki</td>
</tr>
<tr>
<td>3sg→1plex</td>
<td>wa-rqa-n-ku</td>
<td>3→1plex</td>
<td>wa-rqa-yku</td>
<td>1pl</td>
<td>A: omit number in wa-rqa-n</td>
</tr>
<tr>
<td>2pl→1plex</td>
<td>wa-rqa-nki-ku</td>
<td>2→1plex</td>
<td>wa-rqa-yku</td>
<td>1pl</td>
<td>A: omit subject number instead of subject person and number in wa-rqa-nki-cis</td>
</tr>
<tr>
<td>3pl→1plex</td>
<td>wa-rqa-n-ku</td>
<td>3→1plex</td>
<td>wa-rqa-yku</td>
<td>1pl</td>
<td>A: omit subject number instead of subject person and number in wa-rqa-nku</td>
</tr>
</tbody>
</table>

On the basis of Table 6.10 it appears that the first person, and plurality of the first person are most important in Bolivian, cf. the column under ‘Output meaning’. When these are involved, other persons and other numbers, irrespective of whether they are subject or object, are less important. In OT terms the ranking in Bolivian Quechua is Max(1Plur) // Max(1) >> Max(2) // Max(3) // Max(Pl), cf. Tableau 6.13. In Argentinean there is one exception: 1 PL // 2PL is reduced to ra-yki-cis, 1 // 2PL, while it is reduced to rqa-yku, 1PL in Bolivian. Therefore, the ranking of Max(1Pl) and Max(2) is less strict in Argentinean Quechua.

Tableau 6.13 Input: Bolivian Quechua riku-?-rqa-?-? see+PAST+1OBJ-PL+2SUB-PL

<table>
<thead>
<tr>
<th></th>
<th>LEX</th>
<th>Max(1Plur)</th>
<th>Max(2)</th>
<th>Max(Pl)</th>
</tr>
</thead>
<tbody>
<tr>
<td>riku-wa-rqa-yku</td>
<td>*</td>
<td>*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>see+PAST+1OBJ-PL+?SUB ←</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>riku-wa-rqa-yki-cis</td>
<td>*!</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>see+PAST+1OBJ+2SUB-PL</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>riku-wa-rqa-nki-ku</td>
<td>*!</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>see+PAST+1OBJ-PL+2SUB</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

179 In Cuzco Quechua, there is also a person hierarchy apparent from expressions with a double plural meaning. In most Cuzco Quechua varieties plurality is expressed only once. When there is both a plural subject and object, plurality of one of these must be omitted. Third person plurality is omitted when there is a second person involved, and second person when a first person is involved, cf. Cuzco Quechua: 2pl→1plx, wa-rqa-nki-ku, instead of wa-rqa-nki-cis; 1plx→2pl, rqa-yki-ku instead of rqa-yki-cis 3pl→2pl, rqa-sunki-cis instead of rqa-sunki-ku. Therefore, the Cuzco Quechua hierarchy is 1 >> 2 >> 3, which corresponds to an OT constraint ranking Max(Num1) >> Max(Num2) >> Max(Num3).

180 In Argentinean there is one exception: 1pl→2pl is reduced to ra-yki-cis, 1→2pl, while it is reduced to rqa-yku, 1pl in Bolivian. Therefore, the ranking of Max(1Pl) and Max(2) is less strict in Argentinean Quechua.
So far I have assumed that the selection of solutions to the fusion of –yku and –nku in Southern Quechua (Bolivian and Argentinean Quechua) is motivated by the ranking of various Input-Output Faithfulness constraints. However, Output-Output (OO) relations may play a role as well. As discussed in 6.3.3.4, the choice of plural first object forms like wa-(rqa)-yku may be motivated by the analogy of (PAST) 1PL.INCL.SUB, (rqa)-ncis :: (PAST) 1PL.EXCL.SUB, (rqa)-yku. Analogously this would yield the following object agreement form: 1PL.EXCL.OBJ, wa-(rqa)-yku on the basis of (PAST) 1PL.INCL.OBJ, wa-(rqa)-ncis. In an OT account the OO relations as suggested by Benua (1995) will not work. Output-Output correspondences as conceived by Benua (1995) make use of a base form, on the basis of which other Output forms are computed. In Southern Quechua, however, the bases for analogy are 1PL.INCL forms, which are unlikely candidates upon which to base the whole paradigmatic structure. Instead, McCarthy’s (2001) Optimal Paradigm model is more appropriate (cf. also section 3.3.3.3). Loosely speaking, this model would operate as follows: 1PL.EXCL.OBJ, wa-rqa-yku may violate faithfulness constraints like Max(2) and Max(Pl). However, this violation is not forced by a higher ranking Max(1Plur) as suggested above, but by a high-ranking OP-constraint that prefers the structure of 1PL.EXCL.OBJ, wa-rqa-yku, because of its paradigmatic motivation by the form 1PL.INCL.OBJ, wa-rqa-ncis. In other words, such forms are composed not only through a computation from Input to Output, but by a computation in which the whole paradigm is involved. Candidates that fit better within the whole paradigm are preferred. I will not discuss the details of this proposal further. The important aspect here is that although these forms violate several Transparency constraints, there may be other underlying paradigmatic correspondence constraints that explain their occurrence. Thus the preference that one semantic category may have over another is not a result of I-O Faithfulness constraint ranking, or some idiosyncratic decisions taken in the lexicon, but a result of another type of constraint, namely O-O Faithfulness constraints. Although in some cases such paradigmatic constraints reduce allomorphy and homonymy, this is not the case here (cf. also section 3.3.3.3). In Southern Quechua the irregular alternation nciis :: wa-ncis is in fact taken as the basis for other forms in the paradigm. Since these forms are irregular, the other forms become also irregular with respect to Transparency.

Now I turn to the extension of su, which, in contrast with yku and nku fusion, resulted in more lexicon optimisation in Southern Quechua. In section 6.3.3.2 I discussed the factors that led to the reinterpretation of the first element of su-nki, 2 → 3 into su, 2081. I suggested that influence from other Quechua varieties, like Cajamarca and Ayacucho Quechua was likely and that the replacement of su-nki-ku by su-nku may also have motivated reanalysis. Finally, I conjectured that an autonomous development towards uniform expression of 2081 was possible.

All these developments led to an optimised lexicon in Bolivian and Argentinean Quechua. The adoption of su leads to less violations of constraints that deal with fusion, faithfulness and isomorphy. In Table 6.11 I show how many constraints are violated by the optimal candidates in the three southern varieties. Behind each form I give first the violation of “No Fusion”-constraints, for which I count a violation of *[X, Y]_{bosc} as 2, and a violation of *[X, Y]_{af} as 1 (see 6.6.1). The next number refers to the violation of Max(Order): anything that does not comply with OBJ-Tense-SUB-NUM(SUB) receives a 1. The third and last number refers to the violation of Max(Obj): 1 when object agreement is expressed in a fused affix, and 2 when it is not expressed at all.
Irrespective of the order of constraints in the various varieties, the lexical material of Cuzco Quechua results in most violations of constraints (21) for the optimal candidates. The reinterpretation of *su* leads to 14 violations of the same constraints by the optimal candidates in Bolivian Quechua, and to 12 violations in Argentinean Quechua. That is, the wider the distributional possibilities for *su*, the fewer violations of constraints occur. Although the exact number of violations depends on the specific constraints and Input forms we examine and how we weigh the violations in the comparison, it is clear that the Bolivian and Argentinean *su* affix gives rise to fewer violations of constraints. In the last column I have provided an ‘ideal’ reanalysis of *su*, that would lead to a minimal number of violations of Transparency and Isomorphy constraints.

In this analysis I have assumed that the main difference between Cuzco, Bolivian and Argentinean Quechua with respect to 2nd object marking resides in the lexical specification of the distributional possibilities of *su*. Instead, it could be argued that the affix specification of *su* has remained the same, and that a reranking of constraints has led to the wider occurrence of *su*. In fact, this is Lakämper & Wunderlich’s (1998) view. They assume that in earlier Quechua there was a constraint, the Object-Subject-Constraint, that demanded fused affixes for some subject-object combinations, and non-fused affixes for other combinations. The disappearance, or in OT terms, the demotion of this constraint would have led to the extension of *su* to other forms. In section 6.3.3.2 I have argued that for several reasons this is an unlikely explanation for the Southern Quechua change. Instead of an explanation of the Southern Quechua change by constraint reranking, I assume a conspiracy of both internal and external factors that led to *su*-extension. What Lakämper and Wunderlich (1998) call a ‘potentially symmetric system’ in Southern Quechua, I call an optimised lexicon.

### 6.6.4 Conclusion

There are three factors that lead to change in inflection in OT: changes in the lexical content, reranking of morphological constraints, and reranking of phonological constraints. While in Scandinavian and Arabic phonological rerankings have played an important role, the changes in Quechua inflection are brought about by morphological rerankings. In addition, as discussed in the last section, changes in the lexicon, owing to autonomous development and dialect contact, have played an important role in changes in southern varieties.

In Ecuadorian Quechua constraints have been reranked with the result that complex affixes and complex affix order have been lost. Several kinds of constraints may be
Quechua changes from the perspective of Optimality Theory

responsible for the change in Ecuadorian Quechua. From a synchronic point of view it is
difficult to decide what reranking is the best explanation for the inflectional changes. An
examination of historical data seems to suggest that a combination of these constraints
may best explain the diachronic path of Ecuadorian Quechua. More data on historical
stages, especially with respect to the loss of plural object marking may change this
scenario. In Moroccan Arabic there is a similar indeterminacy about what kind of
constraint would be responsible for deflection (cf. section 4.7.3.2). However, no matter
how exactly we analyse the constraint reranking, it is clear that in Ecuadorian Quechua
the changes are due to morphological constraints that are better suited to a Type 2 speech
community. The promotion of these constraints led to a removal of complex affixes from
the Ecuadorian lexicon. This means that candidates that obey LEX in Ecuadorian
Quechua also comply with other constraints that were violated in other Quechua
varieties. In other words, in Ecuadorian Quechua the lexicon has been optimised. When
we take a look at the five points in the second part of Table 3.2, which predict what
would happen if a speech community changed from a Type 1 to a Type 2, we find that
four of the five predictions come out in Ecuadorian Quechua: 1) the lexicon is optimised,
2) Max(Cat) is demoted while other Max constraints are promoted, 3) Max(Order) rises,
and 4) filter constraints like *[ObjAgr] are promoted.

In Bolivian Quechua fusion of person and number and its consequences may be
indicative of the mutual ordering of some constraints that are not in opposition in other
Quechua varieties, that is, Max(1), Max(Pl). When we assume the Optimal Paradigm
model of McCarthy (2001), however, a special kind of faithfulness constraints may be
responsible for Southern Quechua irregularities. In Southern Quechua the changes in the
lexical content of su lead to other optimal candidates that violate fewer constraints than
their Cuzco counterparts. The question remains whether this lexicon optimisation (cf.
section 3.4) in Southern Quechua is an extra motivation behind the change in the content of
su, or whether this change is just a consequence of dialect contact. An argument for a
drive towards lexicon optimisation in the extension of su is that su became a general 2nd
person object marker in several locations in the Quechua speaking area. However, the
same argument can be used contra an intrinsic drive; the areas where su was generalised
have had contact with each other, and in other areas there is no such change in su status.
Nevertheless, the possibility of su as a 2nd person object marker may stem from
Cajamarca Quechua, while the actual implementation and extension, especially in
Argentinean Quechua, may well be due to the different sociolinguistic circumstances in
the south. On the other hand, the fusion of person and number has led to more violations
of faithfulness constraints in Bolivian Quechua, and the direction of change with respect
to yku and nk is away from lexicon optimisation. In Argentina the amount of
optimisation has increased, while in Bolivian the optimisation with respect to both su and
nk and yku is lower than in Argentinean Quechua. The predictions of Table 3.2,
therefore, only partly hold true. Max(Order) and other Max constraints have become a
little more important and in some respects the lexicon has been optimised to a greater
extent. This slight shift towards linguistic Type 2 phenomena corresponds roughly with
the lower degree of restructuring of the Quechua speech communities in the south in
comparison with Ecuador.

A final observation is that the lexicon is less rapidly simplified than the grammar. In
Ecuadorian Quechua, as well as in Katanga Swahili and Moroccan and Nubi Arabic,
constraints may be reranked and occasion a simple morphology with no or only highly transparent inflection. As a consequence the lexicon in these instances is also optimised. In such cases simplification of the lexicon follows reranking of constraints. However, when language changes stem from the lexicon itself, as in Bolivian fusion of \( n \) and \( y \) with \( ku \), then the lexicon is reorganised only locally, and the constraints are slower in following the lexical changes. That is, while the lexicon in Southern Quechua moved in the direction of lexicon optimisation, we could imagine a much more optimal lexicon fitting an easier grammar. In the column under “ideal lexicon” in Table 6.11 above, I show how an ideal transparent inflection could be made by a replacement of a few features and conditions on affixes in Quechua. This “ideal lexicon” would violate less constraints and the constraint ordering could be more suited to Type 2 circumstances. There is a similar development in Scandinavian: although in Norwegian constraint reranking led to a highly economic and transparent inflection, the lexicon with its many irregular strong verbs still prevents full simplification.
7. Swahili

In this chapter I examine developments in Swahili from the perspective of my model. Swahili is a Bantu language from the Niger-Kordofanian language family. From about 800 CE until the 19th century Swahili was spoken in several dialects on a 1,000-mile long strip along the East African coast between northern Mozambique and southern Somalia. For centuries the Swahili speech community has been the intermediary in the trade of goods from Arabia, India and east Asia and the resources that could be found in the inland of Africa. These trading contacts, especially with the Arabs, influenced the Swahili speech community in its religion, culture, and language. In the 19th century the island of Zanzibar became the most important trade centre on the east African coast, from where larger expeditions were undertaken into the interior. On these expeditions Swahili was spoken as a lingua franca, and small pockets of Swahili speakers emerged inland. Later, in the 20th century, during the occupation by the German and British colonial powers, the Unguja variety of Swahili spoken on Zanzibar became firmly rooted in Tanzania, and forms of Swahili were further spread as a lingua franca over Kenya, Uganda, Burundi, the Congo, Mozambique and as far as South Africa.181 Like all Swahili varieties, the Zanzibar variety had undergone much language contact before the 19th century, especially with Arabic. Varieties that split off later underwent a more rapid form of language contact during the Swahili expansion, leading to heavily pidginised forms of Swahili.

In the cases of Scandinavian, Arabic and Quechua I compare three modern varieties that developed from one older variety over hundreds of years. The three modern varieties discussed in this chapter have, however, only developed from their mother language during the last 150 years. Two of these varieties have undergone considerable changes, but the third variety, Standard Swahili, has remained stable in its inflectional morphology. Therefore, I compare the other two varieties of Swahili with this third modern Swahili variety, and not with an older stage of the language.

Standard Swahili is the result of standardisation in the first half of the 20th century and it is learned in Tanzania and surrounding countries as the official variety of Swahili. The two varieties that I discuss here, and that are derived from the immediate predecessor of Standard Swahili, are Katanga Swahili and Kenyan Pidgin Swahili. Katanga Swahili is spoken in the south eastern Congo in the Katanga region and is also called Shaba Swahili, Congo Swahili or Zairan Swahili.182 Katanga Swahili was brought to the Congo during the developing pre-colonial trade in the 19th century and took root there during Belgian colonisation. Kenyan Pidgin Swahili refers to the pidginised varieties of Swahili that are spoken in the larger towns in the interior of Kenya. These were brought to Kenya in the 19th century, but never became a native language. Other names for Kenyan Pidgin Swahili are pidgin Swahili, Kisetla, etc. (cf. section 7.1.4).183

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181 I use the term ‘the Congo’ for the area in west Africa that was dominated by the Belgians, as well as for the nation that has been called (Belgian) Congo, Zaire, the Democratic Republic of Congo and Congo-Kinshasa.

182 These two latter names are confusing since they do not distinguish between Katanga Swahili and the Swahili variety spoken in more northern parts of the Congo, in the province of Kivu.

183 One caveat is appropriate here; my choice to compare Kenyan Pidgin Swahili with Tanzanian Standard Swahili does not mean that in Tanzania only Standard Swahili is spoken and in Kenya
I first outline the history of the Swahili speech community from 800 CE until the 19th century, before the rapid expansion of Swahili over east and Central Africa. Next I discuss the subsequent history of Swahili and its standardisation, before going on to examine what happened in the areas where Swahili was brought as a trade language, i.e. the Congo and Kenya. The language structures of the Swahili varieties are then considered in 7.2, 7.3 and 7.4. In 7.5 a comparison is made between Standard Swahili and other varieties with the typology of speech communities as defined in 2.3. Finally I explain Swahili inflectional changes with the help of OT (7.6).

7.1 Social history of Swahili

7.1.1 Early Swahili history

In this section early Swahili history is described in conjunction with the consequent changes in the Swahili language.

7.1.1.1 Swahili on the coast

It is estimated that around 1000 BCE Niger-Kordonofonian languages began to spread from western Africa eastwards and southwards, giving rise to hundreds of so-called Bantu languages. These continued to spread and as a result, most languages spoken on or south of the equator in Africa are Bantu languages. About 100 CE the coast of Kenya was reached, and from then on Bantu spread further southwards. The Bantu speakers were successful in introducing new methods of agriculture and iron working into central Africa (cf. Davidson 1984; Maxon 1986: 28ff.). Although the data on east African history are rather scarce, around 800 CE a form of Swahili must have split off from a Bantu subgroup called Sabaki, to which languages such as Mijikenda and Pokomo also belong. The Sabaki subgroup belongs with other subgroups to the larger group of North East Coast Bantu languages, which in turn belong to East African Bantu (cf. Nurse and Hinnebusch 1993: 19ff). The Niger-Kordonofonian family tree containing Sabaki is highly complex. In Figure 7.1 I depict the Sabaki sub-tree (cf. Nurse and Hinnebusch 1993).

Reconstructions of Proto-Swahili have shown influences from several related Bantu and Cushitic languages. In combination with archaeological evidence Nurse (1996: 289) supposes that the first Swahili communities were groups of mixed descent consisting of farmers, fishermen, cattle keepers, and traders. Slowly trade became more important in the Swahili coastal communities, and more and larger communities were founded. Soon Swahili communities were located all along the coast for a thousand miles from south Somalia to northern Mozambique. These Swahili dialect communities became culturally distinct from other Bantu speaking groups by holding relations with overseas traders from Arabia, India, and later, Europe (cf. Maxon 1986: 40). The Swahili communities became the meeting point between Arabia, India and the Far East at the one hand, and inland Africa on the other hand.

only Pidgin. Both varieties are found in both countries. However, since I compare varieties that differ most in their social-cultural history, I have chosen the typical situation of Pidgin in Kenyan cities and the typical locus of Standard Swahili in Tanzanian society as examples of the two extremes on the social factor scale.
The most prosperous period of Swahili society was between 1200 CE and 1500 CE, during the time when Islam rose in importance. In this period several city-states like Mombasa, Mogadishu and Kilwa prospered, and the communities were socially stratified (cf. Maxon 1986: 41ff.). In commercial contacts probably a variety of Swahili was used. Nurse (1996: 290) says: “A possible outcome -though not necessarily the only one- of this multilateral trading situation might have been an expanded pidgin, or pidgins.” In the 16th century the Portuguese, in the name of religion and strategic considerations, succeeded in brutalising the area with their superior weapons and their divide-and-conquer policy (cf. Maxon 1986: 44ff.). As a result, trade in the coastal cities dwindled and levels of prosperity declined. In the 17th century Portuguese power weakened globally, and by the end of the century Arabs from Oman had extended their power to east Africa and pushed out the Portuguese. Despite their two hundred year long presence in east Africa, the Portuguese had very little influence on the Swahili language, except for a few lexical items. The new Omani rulers were unable to conquer the east African coast, because they were not powerful enough, and the Swahili towns resisted overseas rulers, in spite of their common religion. Nevertheless, after 1700, their architecture, religious practices and language (which displayed numerous loans from Arabic) showed considerable Omani influence. In this period the city-state of Mombasa in present-day Kenya flourished.

In the first half of the 19th century the power of the Omani Arabs, led by Seyyid Said, increased with the support of the British, and in 1837 Mombasa came under his rule. In 1840 he established himself at Zanzibar, and started clove plantations. By introducing Indian financiers, and creating a single customs unit, he promoted caravan trade inland on a much larger scale than before. These expeditions involved Arabs, Swahili’s, and many Africans, such as the Nyamwezi. Ivory and slaves were wanted goods, which were exchanged for items such as beads and textiles. The massive scale of the trade expeditions restructured the communal economies of east Africa into market economies, integrated within larger patterns of trade. Within these larger networks Swahili came in use as a general lingua franca. Before, exchanges took place through local

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**Figure 7.1 Tree diagram of Sabaki languages**

In the 1st century CE Bantu was probably spoken on the east African coast.

In the 6th century a proto-Sabaki language must have emerged.

Around 800 CE differences arose between proto-Swahili and other Sabaki languages.

Swahili was soon spoken in scattered communities along the coast where different Swahili varieties developed over more than a millennium.

In the 19th and 20th century the Unguja variety of Swahili as spoken on Zanzibar rapidly spread over mainland east Africa.
multilingualism, that is, people knew the languages of their immediate neighbours. In this new modern period Swahili emerged as a lingua franca that was used over a wider area, although it is unknown to what extent Swahili was used inland (Schadeberg, pers.comm.). This pre-colonial spread of Swahili took place along trade routes in settlements where the Swahili traders stayed the longest (Polomé 1967: 11).

In the 19th century, “increasing numbers of European adventurers or travellers made their way into the east African interior.” (Maxon 1986: 124). They had diverse motives, like financial gain, acquiring fame, scientific curiosity, or religious or humanitarian zeal. At that period the British imperial power grew, and their grip on Zanzibar tightened towards the end of that century. Meanwhile, Germany became a strong modern nation in Europe, and under Bismarck they also developed colonial aspirations. In 1886 Germany and Britain divided east Africa into two spheres, which eventually led to the modern nations of Kenya and Tanzania (cf. Figure 7.2).

![Figure 7.2 Map of the area in Africa where Swahili is spoken](image)

Initially, Germany and Britain did not take direct control over their colonies, but exerted power through their trading companies. Gradually, however, with the help of Africans, British and German armed forces took control of the whole area of modern Kenya and Tanzania. Before the First World War the Europeans abolished the ivory and slave trades, and they introduced new export crops in East Africa. Meanwhile, missionary activities became much stronger under colonial rule, and these were accompanied by the
introduction of schools. At the beginning of the 20th century, the Zanzibar variety of Swahili was, to a certain extent, spoken as a lingua franca in Kenya, Tanzania, and parts of the Congo, due to the intensification of trade and contacts. In subsequent sections the history of each region will be discussed in more detail, but first the earlier history of the Swahili language and the Swahili speech community will be examined.

7.1.1.2 Simplifications in early Swahili

I first summarise what social factors played a role in the early Swahili history, and next I discuss their influence on linguistic changes.

I. During the period before modern colonialism the Swahili communities along the coast always kept close contact with each other as well as with inland and overseas visitors.

II. Before the rise of Zanzibar there had never been one stable central power. Instead, there were a succession of small city-states whose power rose and fell, only to be replaced by others elsewhere on the coast (cf. Maxon 1986: 41ff.). These Swahili towns attracted people of non-Swahili origin.

III. Swahili was used as a lingua franca by coastal communities, and during the 19th century it was used as a trade language on expeditions inland. There were probably some pidgins and other contact varieties of Swahili in use at that time. Nurse (1996: 291) says: “It is LIKELY that conditions on the northern Kenyan coast from 800 CE onwards were conducive to the emergence of pidgin forms of Swahili adjacent to the Swahili communities…”

IV. Links among Swahili communities were strong, owing to network ties of intermarriage, politics, trade, and shared identity.

Many simplified Swahili varieties probably emerged even before 1900 because of the extensive, well-established trading contacts which had been built up amongst the Swahili and neighbouring groups in Africa and overseas. Perhaps mother-tongue speakers of Swahili were also influenced by these circumstances. Since there is little information prior to 1900 and no data at all from before 1700 to indicate what Swahili sounded like, modern Swahili needs to be compared with Cushitic, Arabic and other Bantu languages.

Swahili has absorbed a substantial amount of borrowings. According to Nurse (1996: 276) 15% of the core lexicon is of foreign origin.184 However, most of these are borrowed from closely related Sabaki languages. According to Schadeberg (pers.comm.), 5% is a more reasonable count when we restrict ourselves to non-Sabaki languages. Outside the core vocabulary loan-words have entered to a much larger scale. Assessments of the Arabic component range from 20 to 50% of the vocabulary in areas like religion, law, administration, etc. These borrowings stem largely from recent centuries (Nurse 1996: 276ff.).

After the emergence of Swahili as a distinct language around 800 CE, several phonological changes occurred. Loans from Arabic introduced new phonemes and phoneme clusters into Swahili, such as thelūji, ‘snow’, in which th is a voiceless fricative dental, not native to Bantu languages, and in e.g. ku-ṣtaafu, ‘to retire’, which has a

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184 Unfortunately, Nurse (1996: 276) does not mention how he defines the ‘core lexicon’, apart from stating: “as evidenced by use of variants of Swadesh’s 100- and 200-word list.”
Swahili has reduced its noun class system (cf. section 7.2.1.4) in comparison with many other Bantu languages (cf. Nurse 1996: 281ff.). In the last two millennia three of the eighteen noun classes have disappeared in Swahili, while three other, locative, noun classes are no longer visible in the nominal construction itself. Most of these losses are also found in related languages and must have taken place before the rise of Swahili, but two of the losses occurred only in Swahili. One of these is the result of a phonological change. The loss in flexibility of expression with the noun class system has partly been replaced by a larger set of adjectives. The set of tense/aspect (TMA) affixes has been greatly reduced in Swahili in comparison with other Bantu languages, but not in comparison with related languages from the North Eastern Coast Bantu group. Swahili is typical in having several grammaticalised auxiliaries in the tense/mood/aspect (TMA) system, which replaced earlier losses in the suffix cluster (cf. section 7.2.1.1).

These different phenomena have been produced as evidence that Swahili was a contact language. However, these features are also found in other Bantu languages which were not contact languages. Nurse (1996: 291) concludes that Swahili itself has not been pidginised in the strict sense of the term, although there have probably always been pidginised varieties around. However, he adds that “it is possible that certain morphological replacements and losses in early Swahili itself resulted from the assimilation of speakers whose first language was not Swahili (i.e. speakers of Cushitic) into Swahili society.” Lack of data on early social history prevents further conclusions. I now turn to the comparison of three more recent varieties.

7.1.2 Swahili in Tanzania

In Tanzania Swahili rapidly changed its status from a language spoken only by a small ethnic group at the east African coast to a national super-ethnic language, spoken with high proficiency by most Tanzanians. When we want to understand this, some general facts should be kept in mind.

First of all, there are about a hundred ethno-linguistic groups in Tanzania, of which even the largest, who speak Sukuma, does not comprise more than a sixth of the population, and is economically marginal. On the other hand, the economically more active group, the Chaga, is linguistically not united (Mous, pers.comm.). Another point in favour of Swahili is that ninety percent of the population speak some Bantu language closely related to Swahili (Polomé 1980c: 4). Furthermore, the different ethnic groups do not have anything else in common, such as religion

185 Tanzania has neither a majority of Moslems, nor of Christians or of other religious groups.
pre-colonial growth of local empires, and increase of trade, colonial urbanisation and economic and political integration of previously separate spheres, super-ethnic national resistance against the coloniser, and post-colonial elaboration of a common language and national identity. In short, larger super-ethnic group identities were forged and inter-ethnic communications increased, and in this process a lingua franca was needed. I now describe in more detail how Swahili became the national language of Tanzania.

On mainland Tanzania political and economic centralisation made surplus production possible in the 19th century (Maxon 1986: 106ff.). In the same period, before 1850, Zanzibar became the centre of trade in east Africa. In the second half of the 19th century, trade from Zanzibar increased when large expeditions into the interior were undertaken by Swahili, Arab, and later, also European traders. In the context of this trade Swahili was spread along the trade routes (Whiteley 1969: 46), and from circa 1890 Swahili was also spread by missionary activities inland. When colonial powers took control in east Africa, Swahili already had the status of most important lingua franca in the region that is Tanzania today (Nurse 1996: 271). This does not imply, however, that the number of Swahili speakers was high at the time. It only implies that Swahili was the most practical language for communication in larger networks. The spread of Swahili was independent of schools and other kinds of education. Before, Swahili was associated with the typical coastal commerce culture of the Islamic Swahili’s. Now it changed its character since it was used for commerce in a wider context and for Christian missionary activities. In 1886 Germany and Britain decided that Germany should also receive its colonial part in the world arena, and Tanzania was assigned to German colonial authority (see above, section 7.1.1.1). Germany ruled with the help of local chiefs, and sometimes with Arabs and Swahili’s. Agriculture was reformed, and the Germans tried to make their colony profitable with the help of experts in agriculture from Germany and by semi-forced labour and promotion of certain production techniques. In this period missionary activities became much stronger, and these were accompanied by the introduction of schools. In the mission schools Swahili was used, because in Swahili another monotheistic religion had also found expression, namely Islam, which was considered to be relatively close to the Christian religion. However, the use of local languages was also encouraged, since it was thought that the people would more readily understand the Christian religion if it was expressed in their own language, the language of their souls. Later German administration interfered with missionary education by laying more stress on education in Swahili. Although they feared that Swahili through its connection to Islam might be used to oppose colonial power (Mazrui & Mazrui 1999: 56), they wanted to teach a widely used language to make further integration and progress possible in Tanzania. They preferred Swahili above German, because they defined Africans as intrinsically non-Germans. Swahili was propagated by the colonial administration, and some Swahili newspapers were founded. Swahili now found its way in the early urbanisation of Dar Es Salaam as the language of the markets and public life.

\[186\] Essentially, there were two types of attitudes in colonialist language policy: the lingua franca in inter-ethnic communication was either the language of the coloniser, since this language would represent progress and higher culture, or it was one of the languages of the colonised, because the colonised could and should not learn the high-standing language of the coloniser. The French employed the first policy, the Germans the second. The English policy fell between these two poles.
In 1905 a massive uprising in Tanzania, the so-called Maji Maji rebellion failed, with the effect that many Africans became convinced that it was more profitable to accept colonial government and to develop through education (Maxon 1986: 169). Swahili, which had been the lingua franca of the Maji Maji rebellion, had now been used for the first time as a means of super-ethnic organisation, dissociated from the colonial power (Mazrui & Mazrui 1999: 54). In this period the Germans, still afraid of Islamic rebellion, moulded Swahili in a Roman script, instead of the Arabic writing, which was in use before. The Germans further propagated Swahili, and an early ‘Report on the Territory’ of 1921 states: “the late German system has made it possible to communicate in writing with every Akida leader and village headman and, in turn, to receive from him reports written in Swahili” (cited in Whiteley 1969: 60). In east Africa WW1 led, as everywhere, to famine, destruction, and decrease of economic production. In this war Swahili became also the language of the army. Another result of the war was that Tanzania fell into British hands. After WW1 the British initially kept the same administrative and political structure as the Germans. Under British rule Swahili continued to be used in the army, although in the higher functions English came into use as well. Swahili remained also the language of primary education and of communication between the colonial power and east Africans, and between east Africans of different ethnic backgrounds. WW2 was less devastating in Tanzania than WW1. After WW2 the Tanzanian economy prospered, and through better planning agricultural production, education and health care were improved. Colonial rule in Tanzania was more relaxed, since it was ruled by a UN mandate, and there were far fewer white settlers than in neighbouring Kenya. In this period local African leaders and chiefs became more self-conscious and gathered support for their striving towards self-government (Maxon 1986: 211ff.). Later these sentiments were expressed through organised political parties such as TANU, the Tanganyika African National Union, which was led by Nyerere. After some struggles this led to complete independence in 1961.

Under British rule English became the language of communication in higher levels of society. English was used for Higher Education, for all business involving international relations and even in the High Court itself. Well laid-out magazines were in English, while daily newspapers were in Swahili. However, Swahili spread steadily throughout the country as a result of economic and political integration, the rise of national self-consciousness and the increased importance of commerce. This was in contrast to the neighbouring British colony of Kenya (see below). Abdulaziz (1980: 143) says: “By the middle decades of this century, all educated Tanganyikans, as well as a very large proportion of those who had never gone to school, had become bilinguals with great facility in the use of Swahili.” This extension of domains and elaboration of functions was officially guided by language committees. In 1930 it was decided that only Unguja Swahili, the variety from Zanzibar, would be the basis for Standard Swahili. Before 1930 the Mvita dialect of Mombasa was also sporadically used. The standard was codified in vocabularies and orthography, and new forms were introduced. The language planners also gave language advice, guarded grammar and spelling, edited books, translated, and generally promoted Swahili. These committees gave rise to language departments at the university and a considerable number of Swahili experts.

During the first years after independence Tanzania was still dependent on the colonial structure left by the British. To achieve further independence from colonial structures
agriculture manufacturing and medical services on a communal level were improved and influenced by a socialist doctrine. Rapid expansion of education was also set in motion. However, the improvement of education in Swahili was initially hampered because of a shortage of Swahili teachers (Polomé 1980b: 104). In comparison with a century ago, Tanzania today has become a modern nation-state in which there is much structure and organisation on a national level, instead of on a more regional ethnic level. Although there are still huge economic and political problems, nation-wide communication, national infrastructure, literacy and medical care have all radically changed and improved. In this process of national integration Swahili played a key role. AbdulAziz (1971: 55) says:

“Swahili has played a very significant role in the development of political values and attitudes in Tanzania. Its integrative qualities have influenced the style of Tanzanian politics, especially its non-tribal and egalitarian characteristics. All movements of national focus have used Swahili as an instrument for achieving inter-tribal unity and integration.”

In independent Tanzania Swahili is used widely in education and the mass media. Only in the High Court is English still employed. In most everyday inter-ethnic situations Swahili is commonly used. Surprisingly however, English is also becoming more important today, as Tanzania needs to handle international relations and trans-national culture. The growth of Swahili and English is at the expense of smaller languages. Before, Swahili was associated with Zanzibar, the coast and Islam, cf. Goyvaerts (1986: 209): “It [criteria of measure of belonging to Swahili culture, WK] is about religion (Islam) and language (Swahili), two major factors of acculturation and assimilation which each Swahili speaker is considered to integrate, according to his capacities.”

Today Swahili is considered a detribalised language, and has a new national Tanzanian and African identity, cf. Mazrui & Mazrui (1999: 118): “Tanzania’s national identity came to be increasingly defined as Swahili in its cultural character.” While for many groups in east-African society Swahili is no longer associated with the older language tradition of Moslems at the coast, for this latter group itself Swahili remains connected to their tradition of language and culture. This has caused some antagonism between Swahili speakers from the coast, especially in Kenyan Mombasa, and attitudes of speakers from other backgrounds. These groups differ in what they consider the source and norms of ‘proper’ Swahili (Schadeberg, pers.comm.). The attitudes of these groups towards Swahili are positive, and Swahili has become a prestige language (cf. Mazrui & Mazrui 1999: 161). People are proud to speak Swahili properly. Whiteley (1969: 100) says: “Ability to operate Swahili, however, is now a mark of national pride…” (cf. also Mazrui & Mazrui 1999: 162). This pride corresponds with a tendency to use native words, not loans. Polomé (1980b: 92) says: “…the main source of loans is English, not only in the field of technical development, but also in all aspects of social and cultural life, though a conscious effort appears to have been made in recent years to limit the borrowing of lexical items as much as possible and to encourage Swahilisation.”

With respect to the social parameters under question here, we conclude that Swahili in Tanzania, or Standard Swahili, has developed in a history of considerable language
contact. That is, it has always been used by second language speakers, initially as a trade language, and in the 20th century also in the broader context of detribalisation and modernisation. It was first used loosely by a broad network of people simply as a trade language, but more recently Standard Swahili has become the emblem of a more integrated society. The attitudes towards Swahili have been pragmatic for a long period, but more recently Standard Swahili has become the object of national pride. In this latter period there are two points of view concerning the source of ‘correct’ Swahili.

At first sight we would expect from these social parameters that some simplification would result. As discussed in section 7.1.1.2, it is indeed possible that some aspects of Swahili resulted from its earlier status as a trade language, and from the many contacts of the Swahili speech community with speakers from other language backgrounds. During the last two centuries the scale of second language acquisition intensified, and its use as a lingua franca accelerated inland, where Swahili was used by large groups of second language learners in a loose super-ethnic network with a pragmatic attitude towards Swahili. I discuss this process and its effects on two other varieties in subsequent sections. In comparison with these latter Swahili varieties, however, Standard Swahili itself has remained relatively unaltered and complex for the last century. Standard Swahili can be considered as a modernisation, and not a simplification of the Zanzibar dialect, because its basis is a Swahili variety spoken by native speakers, not subject to conditions in which simplifications flourish. Standard Swahili was shaped and learned at schools in addition to markets or trade. Moreover, Standard Swahili has a cultural identity, and is an object of pride and prestige. Therefore, Standard Swahili, of all the varieties under examination, is expected to be most clearly aligned to a kind of language fostered by a Type 1 community. Now I turn to the other two varieties of Swahili that have been spoken in more intense contact situations and which are more similar to Type 2 communities.

### 7.1.3 Swahili in the Congo

In the context of the trade carried on from Zanzibar, Swahili was brought westward from Lake Tanganyika in the second half of the 19th century. In the 1870s the Nyamwezi trading chief, Msiri, had control over trade in ivory, slaves and copper in the region, on the basis of political patronage (cf. Atmore 1985: 75), and in his eastern Congo kingdom Swahili was in use as one of several lingua francas (cf. Schicho 1980: 3ff.). At the end of the 19th century small groups of Muslim Swahili speakers who had remained faithful to their language, culture and religion settled in the area (cf. Goyvaerts 1986: 197ff.). In the late 1880s Belgian and other foreign companies, under the personal direction of the Belgian king Leopold, started to colonise the area, particularly the eastern Congo, which had been known for its copper for centuries (Vellut 1983: 126). In the early 1890s most Swahili and Arab traders from eastern Africa were ousted from the Congo in a massive war (cf. Stengers 1985: 331), and in the first years of the 20th century more expeditions were undertaken southward to the Katanga region. Later further plans were developed to exploit the more southern area, where in 1906 the Union Minière du Haut-Katanga was established. In 1906 the actual building of copper mines started in the southern part of Katanga, and the city of Elisabethville was founded, today called Lubumbashi. In 1908 the Congo became part of Belgium, instead of being a private state owned by the Belgian king. Economic colonial activities were further expanded and the
Belgians needed many workers for the young mining industry. Since the region was sparsely populated the Belgians employed labourers from Angola, Zambia and Mozambique. Lubumbashi also attracted European and Asian farmers and traders. Educational activities increased in the region as a corollary to the rise of the Catholic mission. In the first years of the mining industry there were few workers employed on a permanent basis, and Lubumbashi was an international city, more English and South African in outlook than Belgian and Congolese (Jewsiewicki 1986: 470). Most of the labourers had temporary contracts, and many deserted or died, since the working conditions were miserable. Although Swahili was used in churches, in missionary schools, and in the army, it was not yet the most important language in Lubumbashi. Among the workers, in addition to their ethnic languages, English and Fanagalo, a lingua franca used in southern Africa at that time, were at least equally important.

After WW1 Belgian interference with the Congo intensified, which resulted in an improvement of infrastructure and an increase of industrial activity and communication. In the 1920s the UMHK was the world’s largest copper-producing company, and tin, gold, radium, and uranium were also exploited. In the 1920s less Europeans were involved in the mining industry, and most duties were handed over to African personnel (cf. Vellut 1983: 141). More workers were needed, but workers from British Africa or abroad were considered to be too expensive, and recruitment from the Congo was reaching its limits. Therefore, the Congolese labourers were recruited for longer periods and they were disciplined more. Jewsiewicki (1986: 479) says: “The UHMK began to place all black workers on three-year contracts and encouraged greater efficiency both through differential pay-scales and by making more provision for workers’ wives and children.” As a consequence, Lubumbashi expanded to 22,000 inhabitants in 1933, and 47,000 in 1940 (Jewsiewicki 1986: 492). Many of them were permanent settlers. In the 1930s the world-wide economic depression affected the mining industry, and farmers suffered from malnutrition. Nevertheless, due to more intense control over the Africans, infrastructure further grew, and the mining industry became an even more Congolese activity, that is, fewer non-Congolese and non-Belgians were involved (Jewsiewicki 1986: 484). In 1938 the population of the Congo was estimated to be around 10.2 million. Missionary activities also increased; in 1930 there were as many missionaries as colonial functionaries in the Congo. Health care and rudimentary education were delegated to the Catholic mission. Newspapers and work organisations were censored. Until 1933 18 tribal associations had existed in Lubumbashi and these were now brought under colonial control.

The Belgian missionaries and colonisers tried to mould the African miners into labourers with “good health, good spirits and high productivity” through education and punishment (Vellut 1983: 153). The authorities did not stress ethnic differences between Africans but tried to establish a new social class of industrious workers. The Africans themselves, however, rapidly developed their own new sense of urban identity, which did not correspond to the ideal of the humble, industrious Christian desired by the coloniser. Vellut (1983: 160) says: “An important strand in the social history of the Congo is the history of a new urban, African culture, over which the coloniser never gained complete control... an urban culture developed with its leisure occupations, its games and customs.” In the 1920s and 30s education remained rudimentary in order to prevent competition from Africans for occupations which were meant to be filled by the
Swahili

numerous Belgians in the colony. In missionary activities and education French was not appreciated, because most missionaries were Flemish, and because French was considered to ‘detribalise’ the Africans. Instead, Luba, Lingala, Kongo and, especially in Katanga, Swahili were used and partially standardised. Nevertheless, ‘detribalisation’ could not be prevented since many Africans had lived in the larger industrial cities for years, far away from their villages and families. Moreover, the Belgians themselves tried to make the traditional African life-style conform to a more colonial way of life.

In the 1920s and 1930s Swahili became the most important lingua franca in Lubumbashi for several reasons. Before, workers stemmed from areas where English and Fanagalo were more common. In the 1920s and 30s many workers came from northern Katanga and Kivu (cf. Goyvaerts 1986) where Swahili had been spoken since the pre-colonial era. Second, these labourers remained in Lubumbashi longer. Third, in the new colonial situation the need for a common language was felt. Both Belgians and Africans selected Swahili for this purpose because of its ethnic neutrality. In contrast with English and Fanagalo, it was not associated with the British Empire (Fabian 1986: 71, 101). Swahili was adopted as a language on the work-floor, in education, and in churches. In contrast with Kenya, the danger of an association between Swahili and Islam was not feared in the Congo. French was kept separate from the work-force, and was used only in the higher echelons of Congolese society in the first half of the 20th century. In this period Swahili became the most important second language for the numerous immigrant workers, and the first language for many of the younger generation. Swahili was learned from the employers’ commands in Swahili, from church and formal schooling by the missionaries, but primarily from other immigrant workers (cf. De Rooij 1997: 313).

WW2 led to an even more intense exploitation and oppression of the African population in the Belgian colony, against which protests rose world-wide. After the war the Belgians wanted to lead the Congo to independence, but actual events surpassed their long-term policy. After sudden and violent protests in 1959 independence was introduced in 1960. By the end of 1960, with support from Belgium and the US, Mobutu founded a military dictatorship. In the early 1960s conflicts remained, and several uprisings took place. In 1960 Katanga became independent for a while. Katanga had always had a somewhat different status from the rest of the country because of its industrial mining character and its exclusive relation both to the central Congolese government and the Belgian coloniser. Katanga remained independent until it was conquered again in 1963. In the late 60s and 70s Mobutu extended his power over the Congo, and introduced a strong dictatorship (cf. Fillet 1991). Owing to its rich minerals the Congolese economy prospered, but corruption increased. In the late 70s and 80s the economy, and especially agriculture deteriorated. In the late 80s the Cold War ended and the US showed less interest in supporting Mobutu, which finally led to the fall of Mobutu’s absolutist regime. In 1997 Kabila gained control, and since then even more violence and atrocities have shaken the foundations of Congolese society.

After 1940, the population of Lubumbashi kept growing. Many newcomers from the provinces of Kasai spoke Tshiluba and other Bantu languages like Songe, Kete, and Kanyok. In 1945 Lumbumbashi had a population of 70,000, in 1965 it had increased to 250,000, and today it stands at about 1,750,000 people. With this population increase, Swahili continued to spread throughout Lubumbashi and Katanga society; in the mid-fifties already 23% of the children spoke Swahili at home with their parents, and it was
the language of most public domains, schools, and churches, although after WW2 French became more important in education. French remained the language for more official purposes, and literacy in Swahili was scarce. Swahili was neither identified with the ruling class, nor with a particular ethnic background. Mazrui & Mazrui (1999: 116) says: “There is some evidence that Kiswahili in the 50s and 60s, though spoken mainly as a second language, may have briefly served as a symbol of ethno-nationalism in the Katanga/Shaba area of Congo.” It became the living language of popular culture, and it was the language of highly popular pop songs in the seventies. Fabian (1986: 110) says: “Swahili became the common means of expression for a shared experience of an urban life-style.” Today it is the first language in Lubumbashi and other urban centers of Katanga, and the second language for the rural communities. Moreover, it is one of the four national languages of the Congo, in addition to French and Kikongo. Lingala is the national language which was used by Mobutu and in the army, and Luba-Kasai is the lingua franca of the more populous central and eastern parts of the Congo. More recently, the use of Swahili has increased, since it is the language of the new leader of the Congo, Kabila.

There is wide variation in the Swahili of Katanga. On the one hand educated preachers and white-collar workers use a Swahili rather close to Standard Swahili, especially in writing, while on the other hand recent immigrants to the city depend on a kind of basic pidgin Swahili similar to a type used in Kenya. However, in spite of the radio and television programmes in Standard Swahili, there is no decreolisation process at the moment that does away with Katanga Swahili’s own character. Katanga Swahili has grown from a diffuse lingua franca with lots of variation caused by differences in proficiency and in language background, to a focused language (cf. De Rooij 1997; LePage & Tabouret-Keller 1985: 181-186). There is a norm for what counts as proper Katanga Swahili, as distinct from Standard Swahili and pidgin Swahili. Probably the main grammatical foundations for this norm were laid in the so-called formative period between 1920-1940 (cf. De Rooij 1997: 315).

The history of Swahili in the Congo may be summarised as follows:

Swahili was brought by traders from the African east Coast to the east and south east Congo. After the expulsion of these Arab and Swahili traders, Swahili’s importance in the region diminished at the beginning of the 20th century. However, in the 1920s and 1930s use of Swahili was reinforced by Congolese second language speakers and Swahili was learned as a second language in Lubumbashi and surroundings. In the 20s and 30s a new social urban class developed in Lubumbashi. Swahili was adopted as its vehicle of expression, and also took root among first language learners.

The establishment of Swahili was promoted because of its use by the colonisers in the work-place, in the mining industry, in education, and in the church. It was also adopted by the urban community because of its ethnic neutrality and because of its expression of both urban and Katangese identity in contrast with general Congolese identity.

While Swahili became the first language in Lubumbashi and other urban centers in Katanga, it remained the second language of large groups of immigrants to the area in later years. When later there was more access to Standard Swahili, Katanga Swahili was already a focussed variety that did not ‘melt’ away in the presence of more literate and wide-spread Standard Swahili. Katanga Swahili became identified with urban culture.
Nevertheless, today Katanga Swahili is not the bearer of literate culture. To that purpose, Standard Swahili and French are used (cf. Polomé 1986: 391ff.).

In terms of the three social parameters in this study this means that:

I. Katanga Swahili was learned first -from 1870 until 1920- only as a second language but a little later -from 1920 until today- as a first language.

II. Initially its function was only communicative, while later it attracted symbolic value as well.

III. The network in which it was used was loose at first, but after 1920 it became more and more focussed.

In comparison with Swahili as it was shaped on the coast, Katanga Swahili has more characteristics of a Type 2 speech community, while it later developed into a speech community with more Type 1 characteristics.

7.1.4 Swahili in Kenya

Kenya and Tanzania are neighbouring countries with a partially similar history. They were both occupied by the British, and in both countries Swahili spread in the context of trade and modernisation. However, in Kenya, apart from the coast, Swahili never reached the status it reached in Tanzania. I will explain now why this was so, before turning to the history of Swahili in Kenya in more detail.

Many different languages are spoken in Kenya. However, in comparison with Tanzania, the number of languages is smaller while their diversity is greater. While in Tanzania about 90% speak a Bantu language, in Kenya only about 65% speak Bantu languages, 30% Nilotic, and 3% Cushitic languages. Moreover, some of these languages are quite large. Kikuyu, a Bantu language, counts for 20% of the Kenyan population, and Luo, a Nilotic language, counts for 14% (Rhoades 1977: 8). In addition, the larger ethnic groups have been more reluctant to switch to another language than the numerous small groups in Tanzania (cf. Polomé 1967: 4). Furthermore, English has always had a stronger position in Kenya than in Tanzania. Nevertheless, as in Tanzania, Swahili is the main African language that accompanied the process of modernisation, detribalisation and urbanisation in Kenya.

In both Tanzania and Kenya Swahili speakers had been living along a narrow strip of the coast for centuries. On the coast the Mvita Swahili dialect of Mombasa became an important prestige variety in the 18th and 19th century, and it was used in literary culture. However, this variety did not enter the rest of Kenya (cf. Wald 1981: 12). Instead, as in the Congo, and Tanzania (see above) in the second half of the 19th century a variety of Swahili based on Zanzibar Swahili was introduced into inland Kenya by traders, who must have spoken quite fluent Swahili, since they had been living in Zanzibar for years. Maxon (1986: 100) says: “By the 1860s, however, Arab and Swahili traders who had previously shown little interest in trade routes through Kenya now came into commerce with the Kenya interior in a much greater way.” Trade in Kenya was, however, more hampered by the strong resistance of the Maasai than it had been in other parts of East Africa. Nevertheless, British traders soon followed, and after 1886 Britain considered

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189 That is, not of written literature. In oral culture Katanga Swahili plays an important role (De Rooij, pers.comm.).
Social history of Swahili

itself the ruler of Kenya. British troops invaded Kenya, and a British administration gained more intensive control of the land. With the advent of British influence, more missionaries came to Kenya and introduced rudimentary education. The British abolished the slave trade, reformed the crops production, and built a railway through Kenya to Uganda. This formed the pretext for tighter administrative and military control over Kenya (Maxon 1986: 155ff.). Subsequently, in the first years of the 20th century the various peoples of Kenya were brought under British administration and control. The British employed local officers whose main task was to maintain order and collect taxes. They also had to select workers for European settlers, who claimed large stretches of land and cheap labourers. In this period many Asians from Pakistan and India came to Kenya, and filled a kind of middle class position in clerical jobs and skilled crafts and trades. After WW1, which had led to destruction and poverty, Kenya, in contrast with Tanzania and other east African countries, absorbed relatively high numbers of British settlers. These settlers nearly succeeded in turning Kenya into a South-African-style plain racist society. In the 1930s there emerged an African movement that was concerned with reclaiming lands and preservation of traditional cultural practices (Maxon 1986: 196ff.). In the context of this movement independent churches and schools were established among the Kikuyu, the largest ethnic group in Kenya. After WW2 the economy prospered though the profits flew mainly to the large group of British settlers. Africans who had served in the British army became more conscious of their position in society after having served abroad. Land policies condoned the driving of the Kikuyu from the lands where their cattle grazed, and racial segregation, which contrasted with previous British opposition against racism in Germany, remained a fact of daily life. This led to growing tensions between Africans, especially the Kikuyu, and settlers. In the 1950s the struggle became more violent, with the so-called Mau-Mau rebellion of the Kikuyu against British repression. Subsequently, in addition to military measures, the British also reformed the laws of land ownership and they started to encourage more African economic development and political participation (Maxon 1986: 233). Independence was, however, unavoidable and was finally reached in 1963. After independence, in spite of all previous ethnic contrasts, Kenya was quite successful politically and economically, while remaining connected to the British sphere of influence. The land of the settlers was redistributed, agriculture was further improved, and some factories were built. In this process of modernisation new class distinctions emerged between rich urban and rural elites and the poor majority.

Under the colonial regime Swahili became the language of the army, and was also used at the middle levels of political and social organisations. At the higher levels English was more common. In comparison with Tanzania, at the lower levels, there was a relatively frequent use of ethnic languages. After independence English remained strong (Mazrui & Mazrui 1999: 112). President Kenyatta decreed in 1974 that in parliament Swahili should be spoken, but in 1979 English was allowed again in parliament. Nevertheless, Swahili is extending its domain in politics and on official occasions, and also in the courtroom, although the constitution remains in English. Urbanisation gave Swahili the chance to grow in Kenya as well. Especially in the booming town of Mombasa, where there was already a large group of native Swahili speakers, it became an important lingua franca. Nairobi attracted less long-term migrants, but Swahili could grow there as well, since the largest ethnic group, the Kikuyu, had a low status, and for inter-ethnic communication an additional language was required. In addition to Swahili English was and still is the
language of urbanisation and modernisation. The difference is that, while English is the career-oriented urban language (Scotto 1979: 113), Swahili is the language of horizontal communication and of work organisations. Mazrui & Mazrui (1999: 124) says: “As for cultural nationalism in relation to class, Kiswahili is clearly much more of a language of the common man than English.”

In both Kenya and Tanzania the same ambivalence surrounded Swahili as the language of education. On the one hand, missionaries considered Swahili to be a good vehicle for their message since it was associated with another monotheistic religion, namely Islam. On the other hand, the people would gain a deeper understanding of the message if it was presented in their mother tongue. After independence local ethnic languages were used in missionary activities (Whiteley 1969: 66). Secular authorities feared the Islamic associations of Swahili, and, unlike Tanzania, they showed no reluctance to use the colonial language, English, in African education. On the other side, ethnic languages like Kikuyu had a stronger position and more speakers than ethnic languages in Tanzania, and these ethnic languages became vehicles of education as well. Therefore, Swahili was less frequently used in the Kenyan educational system than it was in the Tanzanian system. Later, in the 1950s, Swahili was associated with the Mau Mau rebels, and ousted even more from formal education (Mazrui & Mazrui 1999: 81). Only after independence did Swahili slowly return to the schools. In 1985 it was re-introduced into the curricula of primary and secondary schools as a compulsory subject. However, even today it occupies a weak position. Often it is only a subject for instruction, and not a medium for teaching itself.

As in Tanzania, Standard Swahili was also officially accepted in Kenya as the norm for Swahili in the Interbellum. In comparison with Tanzania, however, this norm penetrated Kenyan education and society on a far smaller scale. As a result, while more than 95% of the people in Tanzania speak Swahili, only 65% of the people in Kenya are familiar with some form of Swahili. Furthermore, in Tanzania, during and after colonisation people tried to use the Standard language, while in Kenya, in spite of the existence of the Standard, settlers continued to use a pidgin variety of Swahili, or English. Therefore, in Kenya a wide range of Swahili varieties are spoken. There are speakers who have mastered Swahili in its Standard form, as it is used in the mass media. However, there is a substantial group of native Swahili speakers on the coast, whose dialect has slightly different norms from those found in Standard Swahili. There is also a group of mostly older, poorer, and less educated speakers who use the most pidginised forms (cf. Duran 1979: 135, 150). The continuum between these two ends can be described along two dimensions: firstly by the ethnicity and the first language of the speakers, which leads to different kinds of interference, secondly by their level of education, and urbanisation, which leads to different degrees of pidginisation. The first dimension is less important in this study, since it becomes mainly apparent in the phonology (Duran 1979: 140). Today, because of the increasing contacts through education and mass media with the Standard Swahili variety, the most extreme pidginised forms tend to yield to varieties closer to the Standard (Duran 1979: 146). During the last hundred years there have been several situations in which a form of pidginised Swahili served as the lingua franca (cf. Vitale 1980). During and after WWII a pidgin form, called Kivita (war language), was spoken in the British army. This variety disappeared after Independence. On the plantations where people from different ethnic backgrounds worked in east Africa, a form of
pidginised Swahili developed, called Kishamba. Kihindi was spoken by Asians in communication with Africans who spoke little English. Kisetla was used by Europeans in speaking to African servants. In the literature other varieties are mentioned like Kigavamenti, and Kizungu (European language). These different names refer to different social contexts in which a form of Swahili was spoken. These names do not imply a number of linguistically different varieties which all complied with general characteristics of pidginisation. I concentrate here on the modern pidginised Swahili spoken in the larger cities like Nairobi, since this is best described (Duran 1979; Scotton 1979; Wald 1981).

In comparison with Katanga Swahili, Swahili did not develop norms specific to Kenya. First of all, Kenya and Tanzania belonged to the same coloniser, and to the same cultural and political area (Duran 1979: 132). Therefore Kenya always had more access to the Standard variety of Swahili than the Congo. Moreover, there had never been a substantial group of first language speakers where new norms could be rooted. However, the lack of norms for a distinct variety does not entail that there is only one form of Standard Swahili, and that all pidginised forms are imperfect attempts to master the Standard. Imperfect 'broken' Swahili must be considered to be distinct from pidgin Swahili, since in imperfect Swahili we would expect inter-individual variation and change in speakers’ command over time. However, there are speakers who are fully fluent in a shared form of Swahili pidgin variety while not striving towards mastering the Standard (cf. Duran 1979: 141). The identity and attitude of Kenyans with respect to Swahili is also different from Tanzanians’ attitudes. Rhoades (1977: 3) says: “At independence the only identity that mattered for the large majority of Kenyans beyond immediate family and kin group, was a localised ethnicity.” Swahili was not connected to such a localised ethnicity for most Swahilis, except for the native Swahili speakers on the coast. On the coast Swahili was associated with a tradition of poetry, embedded in Swahili culture, but inland Swahili only served as a vehicle for communication. Mazrui & Mazrui (1999: 170) says: “Kenya has a narrow geographical area of concentrated aesthetic achievement in Kiswahili, but elsewhere in the country it is the Swahili language as a neutral medium of communication rather than the Swahili culture as a rich vessel of heritage which has spread.” However, Swahili is weakly associated with Kenyan identity, when Mazrui & Mazrui (1999: 120) says: “It seems accepted in principle that a person cannot be a bona fide national of Kenya without some knowledge of Kiswahili.” But still ‘some knowledge of Swahili’ is far away from demanding perfect command. Therefore, the value of Swahili in Kenya lies in its easy use in inter-ethnic communication and in its neutrality. This led to its spread and success. Whiteley says (1969: 12): “what was loved by none could be tolerated by all.”

In conclusion, English and ethnic languages were too strong to give Standard Swahili the chance to fully expand and to become fully linked to a national identity in Kenya. Apart from the coast, it remained mostly in use in informal inter-ethnic contact situations, and less in political, religious or literary contexts. With respect to the social factors of section 2.2 and 2.3 we conclude the following:

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190 However, even in the pidgin Swahili variety in Kenya, there are some peculiarities irreducible to imperfect second language learning, and proper to specific norms of the pidgin, cf. section 7.4.
1. Like Swahili in the Congo, Swahili in Kenya was initially dispersed from the Tanzanian coast to Kenya by first and second language speakers of Swahili. In contrast with the Congo, and with the exception of the coastal strip, Swahili in Kenya is mainly spoken as a second language. This second language acquisition process takes place partly in schools but mainly in more natural contexts.

2. Because the Standard form of Swahili did not penetrate Kenya fully, there are several kinds of Swahili, varying from strongly pidginised to the full standard language. Swahili is still extending its domain in Kenya, and today the most pidginised varieties have become rare, while varieties closer to Standard Swahili are used more frequently.

3. The Swahili speech community, apart from the coastal community, forms a loose network. Its speakers stem from different backgrounds, both ethnically, and socio-economically. Swahili is used for communicative reasons in Kenya; Scotton (1979: 111) says: “…Swahili’s value is mainly functional and the way it is spoken is not important as long as communication is accomplished.”

7.1.5 Summary and conclusion

When we compare the histories of the three Swahili communities, we find that none of them fully corresponds to a Type 1 community, since a Type 1 community is small, has no second language learners, and a strong language tradition. However, the Standard Swahili speech community is among the three Swahili varieties most similar to a Type 1 community. In Tanzania the influence of second language learners on the -official-development of Standard Swahili is limited, and Standard Swahili has a high status, when we compare it to the other two Swahili varieties.

In the earliest period of Katanga Swahili, its speech community resembled a Type 2 community. Until 1920 there were mainly second language learners of Swahili in the Congo, for whom Swahili was a pragmatic means of communication. Their network was rather loose, since the ethnic ties with their background communities were still rather strong. Later, Katanga Swahili became a more focused language on a specific location; it acquired more first language learners; and it became an expression of the urban culture of the south eastern Congo. Owing to the earlier formative period, we expect Katanga Swahili to display more Type 2 characteristics than Standard Swahili.

The variety of Swahili spoken in Kenya is an even more typical Type 2 community. It has never had any first language learners and it always served as an intermediary lingua franca between different ethnic groups, who, because of their other ethnic ties, formed a very loose network. Moreover, the substrate languages in Kenya were not as related to Swahili as the Bantu languages in the Congo.

In Table 7.1 I have summarised what happened in the various Swahili varieties.
Table 7.1 Social factors distinguishing Swahili speech communities

<table>
<thead>
<tr>
<th>Source language</th>
<th>Standard Swahili</th>
<th>Katanga Swahili</th>
<th>Kenyan Pidgin Swahili</th>
</tr>
</thead>
<tbody>
<tr>
<td>Split from the original language since</td>
<td>Unguja Swahili</td>
<td>No split</td>
<td>Unguja Swahili 19th century</td>
</tr>
<tr>
<td>Amount of contact between Swahili and other languages (after the split)= % of multilingualism</td>
<td>Much</td>
<td>Very much</td>
<td>Very much</td>
</tr>
<tr>
<td>Reason of this contact</td>
<td>Education, modernisation, urbanisation</td>
<td>Work, mining, colonisation, education, religion</td>
<td>Work, trade, colonisation, education, religion</td>
</tr>
<tr>
<td>Time scale of this contact</td>
<td>Since the late 19th century</td>
<td>Since the late 19th century</td>
<td>Since the late 19th century</td>
</tr>
<tr>
<td>Adjacent to the region of the source language?</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Kind of learners of the language in question during the contact period</td>
<td>First and second language learners</td>
<td>Originally second language learners and later first language learners</td>
<td>Only second language learners</td>
</tr>
<tr>
<td>Substrates/ adstrates</td>
<td>Bantu languages, English</td>
<td>Bantu languages, Fanagalo, French</td>
<td>Bantu, Nilotic, Cushitic, English</td>
</tr>
<tr>
<td>Status of ad/substrate</td>
<td>Bantu: Low, English, equal to Swahili</td>
<td>Bantu: Low, French: High</td>
<td>English: High, other languages varying</td>
</tr>
<tr>
<td>Nature of the influence of second language learners</td>
<td>Low</td>
<td>High, transfer of L1 structures</td>
<td>Very high, imperfect learning</td>
</tr>
<tr>
<td>Evaluation of Swahili by the Swahili speakers during the period of change</td>
<td>High</td>
<td>Low overt prestige, high covert prestige</td>
<td>Low</td>
</tr>
<tr>
<td>Evaluation of other languages by the Swahili speakers during the period of change</td>
<td>Bantu: Low, English: High</td>
<td>Bantu: Moderate, French: High</td>
<td>Ethnic languages: Moderate/ High, English: High</td>
</tr>
<tr>
<td>Kind of network structure for the language</td>
<td>Tight</td>
<td>Loose, later more tight</td>
<td>Very loose</td>
</tr>
</tbody>
</table>

7.2 Standard Swahili

7.2.1 Data

In Swahili four levels can be distinguished in the verb. The first two levels are the root and the stem. The root can be extended with derivational affixes to form the stem:

Stem: Root + Affix(es).

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191 This label may seem artificial. However, I have introduced it to indicate roughly how much time has passed since the change has begun.
In Swahili there are about sixteen derivational suffixes that change the meaning of a root. The effects of these suffixes are restricted to the lexical meaning of the verb, and these suffixes are close to the root of the verb, and not entirely predictable in their meaning. I shall label these suffixes, following Ashton (1944), Polomé (1967) and Schadeberg (1973), derivational. Some of the derivational suffixes express meanings, like passive voice, that are expressed in inflection in other languages. When there are no derivational suffixes, the stem is formed with the final suffix -a-. Forms with one or several derivational suffixes also end on a final -a-. Examples are (cf. Ashton 1944: 214ff., 237):


Most stems end on -a- in Swahili. Borrowed verbs, however, may end in other vowels, e.g. safiri, ‘travel’, or fahamu, ‘understand’.

On the basis of the extended root and stem, a third level can be built, where notions like negation, tense, mood and aspect (I abbreviate these latter three notions as TMA) are expressed. These notions are expressed in maximally three positions, which are: the TMA slot in front of the verb,192 the negation slot before the TMA slot –and possibly before the subject marker-, and a Mood slot, after the stem. In the Mood slot the final stem vowel may be replaced by suffixes that, in combination with the TMA and Neg prefixes, express mood and negation. I shall call this third level the ‘tensed stem’:

Tensed stem: Neg + TMA + Stem + Mood.

There are two negative prefixes, more than ten TMA prefixes, and two Mood suffixes. When the choice of affixes are independent from each other we might expect at least 99 different combinations.193 However, there are no more than about 30 possibilities (Schadeberg 1973: 38). In some instances the relation between affix combinations and semantic notions is well motivated. In other instances we must consider the sequence of Neg + TMA + Stem + Mood as a whole to determine the meaning. Therefore, the meaning of these tenses is only partially determined by its parts. On the other hand the meaning of the tenses is largely independent both from the build-up of the second level of the Stem and from the agreement affixes that are added on the fourth level. That is why I take the tensed stem as an autonomous level for description in Swahili. Thus, on the fourth level the tensed stem receives agreement features. Closest to the verb object agreement markers are placed, while in the second slot –possibly preceded by a negative prefix- the subject agreement marker is placed. A relative agreement marker is placed after the stem. However, when there is a TMA marker or the negative prefix, -si-, the relative agreement marker is found after this latter prefix.

In summary, the semantic notions expressed inflectionally are: subject, object, and relative agreement on the fourth level, and different aspectual, modal, and temporal meanings on the third level. When describing Swahili in terms of abstract positions or slots, we see the following order in the finite verb:

Neg + Sub + Neg + TMA + Rel + Obj + Stem + Mood + Rel.

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192 To be exact; in front of the verb which is possibly extended with an object marker or the -ku- element.
193 That is, assuming that all three affixes are optional, which leads to 3x11x3=99 possibilities.
Neg means ‘negation’, Sub is ‘subject agreement’, TMA is ‘tense/mood/aspect’, Rel is ‘agreement with a relative’ and Obj is ‘object agreement. This is only an abstract representation. In fact, not all slots can be filled simultaneously; Neg slot 1 and 3, and, Rel slot 5 and 9 are in complementary distribution. In addition, there are some other interdependencies between affixes in different slots that cannot be represented in this schema, but which I discuss below. Moreover, some apparent complexities like the two positions for Rel are less complex once we know more about the status of the verb stem and the TMA affix. I discuss this below.

Since with respect to agreement affixes, positions are bound to specific forms, I do not add in the glosses whether, for instance, a class 1 affix serves subject, object or relative agreement, except when confusion could arise. I refer to class affixes with only their number, and to person agreement affixes with 1SG, 2SG, 1PL and 2PL. Examples of Swahili verbs are (Polomé 1967: 110, 111):

(1) U- si- mw- ambi- e.
   (SUB- NEG-OBJ- stem- MOOD)
   2SG- NEG-1- tell- SUBJ
   ‘don’t tell him/her.’

(2) Tu- na- yo- i- tafuta.
   SUB-TMA-REL-OBJ- stem
   1PL-PRES- 9- 9- look_for
   ‘which we are looking for.’

In addition, there are compound verbal constructions.

I will now describe the level of the tensed stem, and then the agreement level. My description is mainly based on data from Ashton (1944), Hinnebusch & Mirza (1979), Nurse & Hinnebusch (1993), Polomé (1967) and Schadeberg (1973).

7.2.1.1 Tense, aspect and mood

Between 11 and 15 prefixes are found in the TMA position, depending on the kind of analysis (cf. the affixes in Hinnebusch & Mirza 1979: 238 vs. those in Schadeberg 1973: 23, or Ashton 1944: 139). These prefixes, which I call TMA-markers, mark temporal, aspectual and modal aspects of the verb, and their distribution and meaning is related to the Mood suffix and the Neg prefixes.

The unmarked TMA marker, in the formal and semantic sense of markedness - that is, with least formal means, and with most general meaning - is -a-, used for the indicative present, or “present indefinite” as Ashton (1944: 37) calls it. Two other TMA markers distinguish temporality: -li- is used for the past tense, and -ta-, or -taka- in relative constructions (cf. Polomé 1967: 124), for the future tense. For instance: ni-li-soma, ni-ta-soma, ‘I studied’, ‘I will study’. Four other TMA markers have a more aspectual or discourse function, that is, they refer to the relations between different events.194 The affix -na- indicates a progressive meaning (cf. Nurse and Hinnebusch 1993: 380ff.), and is usually used in the present tense, e.g. ni-na-soma, ‘I am studying’. Ashton (1944: 37)

194 Swahili does not neatly fit the schemes of e.g., Comrie (1976). Instead, on the level of tense notions are found that contest traditional divisions of mood, aspect, negation, and discourse markers (Schadeberg, pers.comm.).
Swahili

considers the -na- and -a-tenses as opposites, -na- being the present definite. This shows that they cannot be pigeonholed under different categories, such as aspect versus tense. However, they cannot be in the same category of tense or aspect, since they express both aspectual and temporal notions. In the Standard Swahili of today, -na- is far more frequent than -a- (Schadeberg, pers.comm.). The morpheme -ka- is a so-called subsecutive. It refers to an event that follows the event referred to by a preceding verb. -me- is the perfect morpheme, and refers to an event in the past that has consequences for the present, e.g. ni-me-soma, ‘I have studied’. According to Ashton (1944: 138), “-ki- expresses imperfect, continuous or incomplete action.” It stresses simultaneity with another event, is used in conditional clauses and corresponds often to a present participle in English. Two other markers are only used in combination with the negative marker: -ku- refers to a negation of an event in the past or perfect, e.g. si-ku-soma, ‘I have not studied’. Ashton (1944: 71) and Hinnebusch & Mirza (1979: 88) consider this to be the negative form of the affirmative tense with the past tense prefix, -li-, but cf. below, section 7.2.2.1. The occurrence of an event is also negated by -ja-, though this implies that the event may take place in the future, e.g. si-ja-soma, ‘I have not studied yet’. A negative future tense uses the same prefix -ta- as in the affirmative future, while a negative present has no TMA affix at all, though it has a special Mood suffix, cf. below. There are four kinds of modal meanings expressed with a TMA-marker: -japo- which expresses the possibility of realisation, though ineffective; -nga-, plain concession, -nge-, a conditional; and -ngali-, counterfactuality (cf. Polomé 1967: 117). Finally, -hu- is an atypical TMA-marker. It expresses habituality, and it is the only TMA marker that blocks subject agreement marking. In a template analysis it can be considered as filling the position which is usually reserved for subject agreement marking.

7.2.1.2 Stem-final mood

In addition to modal markers in the TMA position before the verb stem, mood is also expressed by changing the final vowel in the Mood slot into -e. This e-mood is used in optatives, hortatives, certain imperatives, prohibitions, questions that ask for permission or express suggestions and in several subjunctive contexts (cf. Ashton 1944: 118ff.). Like Ashton (1944: 31) and Hinnebusch & Mizra (1979: 147) I use the term subjunctive for this mood, although strictly spoken, this affix is not restricted to verbs in subordinate positions in the sentence, cf. example (1). In the subjunctive mood only the TMA marker -ka- is used.

When we assume that mood is a category which always has a value, we may suppose that, by default, the final -a, or, in borrowed verbs, other vowels, would express indicative mood. However, this -a is part of the stem, and it is used to build up verbal stems from unspecified roots. Moreover, with respect to e.g. vowel harmony, it behaves like other parts of the stem, that is, derivational affixes, and the verb root. When still assuming that subjunctive mood must have a counterpart, we may assume that in the mood paradigm the bare stem without mood suffix expresses indicative, by default. A second suffix that appears in the Mood-slot, and which casts doubts on the value of the label ‘Mood’, is the -i-suffix. This suffix is only used in the negative present when there are no TMA markers, cf. for instance, ha-va-imbi, NEG-2-sing, ‘they do not sing’ and ha-

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195 Modality is also expressed with a suffix in the Mood position, cf. section 7.2.1.2.
wa-ta-imba, NEG-2-FUT-sing, ‘they will not sing’. Stems that do not end on an -a, do not change their final vowel in the subjunctive or in the negative present.

7.2.1.3 Negation

In Standard Swahili negation is expressed with help of two verbal prefixes. The ‘pre-initial’ marker is *ha*- which is placed before the Sub-slot. The post-initial marker is *si*, which is placed after the Sub-slot. The choice between these two markers correlates with mood. In modern Swahili the *-e*-suffix, and also the modal TMA prefixes I discussed above, co-occur with *si*, cf. example (1). When there is no TMA prefix, the negation marker *ha*- co-occurs with a modification of the mood suffix from -a to -i. Under negation there is a smaller and different set of TMA markers than in the affirmative. Only the TMA prefixes *-ku*, *-ja*, and *-ta*, and the modal TMA markers, *-nge* and *-ngali*, appear in negative tenses (Hinnebusch & Mirza 1979: 238). Negation not only correlates with other features on what I call the third level, that is, the tensed stem, but is even more complex since the affix, *si*, also occurs as a fusion of a third and a fourth level prefix, *-ha*- NEG, and *-ni*, 1SG.

7.2.1.4 Agreement

In Swahili and other Bantu languages extensive agreement systems are found. To understand these, two aspects should be clearly distinguished. First of all, nouns themselves are divided into classes on the basis of partly semantic, partly formal and partly idiosyncratic properties. Nouns in these classes are often, but not always, prefixed by a nominal class marker. Examples of such prefixed nouns are in the left column in Table 7.2. Schadeberg (2001) considers these nominal prefixes to be derivational. Secondly, these noun classes agree with adjectives, verbs, and so on. This agreement is, however, not fully based on the nominal prefix of the noun. In Swahili agreement takes place, first of all, on the basis of the animacy of the referent of the noun. Independent of the class marker by which the noun is prefixed, nouns that are +animate fall into agreement class 1, when singular, and class 2, when plural. For instance, *kipofu*, ‘deaf person’, and all other nouns that refer to persons with a disability, belong to the *ki*- noun class. Still, these nouns trigger concord affixes of agreement class 1, because the *+/−* animate distinction overrules other considerations. We will see that in Katanga and Kenyan Pidgin Swahili this distinction of animacy has become more important. In the second instance, when the noun is -animate verbs (and other categories) agree with the class in which the noun is subsumed. A verb can have maximally three agreement, or, also called, concord affixes, one that refers to the subject noun, one to the object noun, and one that refers to a noun that is relativised. In the schema above, I named their positions Sub, Obj, and Rel. Examples are (Polomé 1967: 110; Schadeberg 1973: 28):

(3) Ni- li   ki- leta.
   1SG-PAST-7-bring
   ‘I brought it.’

(4) (Maneno) ni- li- yo- ku- ambia.
   (words) 1SG-PAST-6REL-2SGOBJ-tell
   ‘(the words) that I told you.’

In comparative Bantu studies 18 noun classes are distinguished. Since some noun classes (12 and 13) do not exist in Swahili, and other noun classes use the same affixes in verbal
Swahili

Concord, there are only twelve different affixes that agree with the subject. In addition to these 12 affixes, four more affixes agree with first and second person, in the singular and in the plural. However, when we consider similarity between class and person prefixes, we see that -u- and -m- are identical to other class prefixes. This brings the total number of different subject agreement affixes to 14 (cf. Table 7.2). Most of the subject agreement affixes have phonologically conditioned allomorphy, while the variation in class 1 between -a- and -yu- is morphologically conditioned.

The object agreement affix immediately precedes the verb stem. These affixes are similar to the subject markers, except for noun class 1, and for the second person singular and plural. There are 14 different affixes used for object agreement, cf. Table 7.2.

Table 7.2 Noun classes in Standard Swahili

<table>
<thead>
<tr>
<th>Class examples</th>
<th>Subject agreement</th>
<th>Object agreement</th>
<th>Relative agreement</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 mtu, person</td>
<td>a-/yu-</td>
<td>-m/-mw-</td>
<td>-ye</td>
</tr>
<tr>
<td>2 watu, persons</td>
<td>wa/-w-</td>
<td>-wa-</td>
<td>o</td>
</tr>
<tr>
<td>3 miti, tree</td>
<td>u/-w-</td>
<td>-u-</td>
<td>o</td>
</tr>
<tr>
<td>4 miti, trees</td>
<td>i/-y-</td>
<td>-i-</td>
<td>yo</td>
</tr>
<tr>
<td>5 tawi, branch</td>
<td>li/-l-</td>
<td>-li-</td>
<td>lo</td>
</tr>
<tr>
<td>6 matavi, branches</td>
<td>ya/-y-</td>
<td>-ya-</td>
<td>yo</td>
</tr>
<tr>
<td>7 kiti, chair</td>
<td>ki/-ch-</td>
<td>-ki-</td>
<td>cho</td>
</tr>
<tr>
<td>8 viti, chairs</td>
<td>vi/-vy-</td>
<td>-vi-</td>
<td>vyo</td>
</tr>
<tr>
<td>9 ndizi, banana</td>
<td>i/-y-</td>
<td>-i-</td>
<td>yo</td>
</tr>
<tr>
<td>10 ndimi, tongues</td>
<td>zi/-z-</td>
<td>-zi-</td>
<td>zo</td>
</tr>
<tr>
<td>11 ulimi, tongue</td>
<td>u/-w-</td>
<td>-u-</td>
<td>o</td>
</tr>
<tr>
<td>12 uhu, freedom</td>
<td>u/-w-</td>
<td>-u-</td>
<td>o</td>
</tr>
<tr>
<td>13 kutaka, to want</td>
<td>ku/-kw-</td>
<td>-ku-</td>
<td>ko</td>
</tr>
<tr>
<td>14 locative</td>
<td>pa/-p-</td>
<td>-pa-</td>
<td>po</td>
</tr>
<tr>
<td>15 locative</td>
<td>ku/-kw-</td>
<td>-ku-</td>
<td>ko</td>
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<tr>
<td>16 locative</td>
<td>m(u)-/mw-</td>
<td>-(m(u))-</td>
<td>mo</td>
</tr>
<tr>
<td>17 locative</td>
<td>m(u)-/mw-</td>
<td>-(m(u))-</td>
<td>mo</td>
</tr>
<tr>
<td>18 locative</td>
<td>m(u)-/mw-</td>
<td>-(m(u))-</td>
<td>mo</td>
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</tbody>
</table>

The allomorphy in the subject concord affixes is conditioned by following vowels. Since in Swahili verb object agreement affixes are always followed by consonants they do not display this kind of allomorphy. The agreement affixes refer to a subject or object. These subjects and objects may consist of nouns, e.g. class 7 chakula, food, pronouns, or proper names, e.g. class 1, Hamisi, for instance (Ashton 1944: 45):

| 1st sg. I | ni- | -ni- | ye |
| 2nd sg you | u/-w- | -ku- | ye |
| 1st pl we | tu/-tw- | -tu- | o  |
| 2nd pl you | m(u)-/mw- | -wa- | o  |

196 Third persons are referred to by the noun class markers.
197 The affix -yu- occurs with the same stems as with which -ku- occurs.
(5) Hamisi a-me- ki-leta chakula.
Hamisi 1-PERF-7-bring food
‘Hamisi has brought the food.’

In Swahili locative adverbial constructions can also be the subject or object of a sentence. These belong to class 16, 17 and 18, e.g. (Ashton 1944: 127):

(6) Mwitu-ni m-me- lala wa-nyama.
wood-in (18) 18-PERF-sleep animals
‘Animals are asleep in the wood.’

Infinitives can also be the subject of a sentence. These fall into class 15, e.g. (Ashton 1944: 123):

(7) Kuimba ku-me- kw-isha.
singing (15) 15-PERF-KU-finish
‘The singing is finished.’

This last agreement marker may be confusing. It has the same form as the negative past tense TMA marker, -ku-, the 2SG.OBJ affix, and moreover, the infinitive marker, -ku-, may also appear in a finite verb. Infinitival -ku- occurs, as in example (7) in allomorphic -kw-, between an unstressed prefix and before monosyllabic stems and the verbs, isha, ‘finish’, and enda, ‘go’. In that position it prevents, in the penultimate stress system of Swahili, unstressed particles, like -me- in example (7), from being stressed before monosyllabic stems. The unstressed particles that trigger -ku- are the TMA prefixes, -na-, -me-, -li-, -ta-, -nge-, -ngali-, and all relative prefixes, see below. Historically, all these -ku- functions are related (Hinnebusch & Mirza 1979: 88). The affix -ku- was an infinitive marker, which in negative tenses came to refer to the past tense, and which was used in monosyllabic finite verbs for metrical reasons. When infinitives are used as subject or objects they form a class and trigger concord affixes on the verb, which were again -ku-.

In Swahili verbs agree with the subject, the object, and with the element that is relativised in relative constructions. This relative marker is formed by merging the concord marker with a final -o, except in class 1, where there is an allomorphic -ye, cf. Table 7.2 above. There are 10 relative affixes with different shapes. When 1st and 2nd persons are relativised, they trigger relative concord affixes belonging to noun classes 1 and 2, the classes of living beings, cf. above. Relative agreement occurs with only three TMA markers; -li-, -na-, and -taka-. There is only one relative construction with negation, without further tense marking. In these cases the relative marker is placed between the TMA prefix, or negative prefix -si- and the object agreement marker, -ku- morpheme, or verb stem, e.g. (Schadeberg 1973: 27, 28):

(8) Kitabu ni- li- cho- ki- nunua.
book 1SG-PAST-7REL-7OBJ-buy
‘The book that I bought.’

When there is no negation or tense marker, the relative marker is placed after the verbal stem, as in:

(9) Nyimbo ni- mw-andikia-zo.
songs 1SG-1- write-10REL
‘The songs I write for her.’
In example (9) the relative marker refers to the head noun, while the object marker refers to the indirect object. The variation in position of the relative concord affix can be explained historically. The relative marker attached verb-finally to main and auxiliary verbs, and, since most TMA markers are grammaticalised earlier auxiliary verbs, later compounding took the relative agreement markers inside the verb.

### 7.2.1.5 Complex verbal constructions

There is a wealth of auxiliaries, and other constructions with more than one verb in a Swahili sentence. While combinations of different TMA markers within one word are not possible, two TMA markers can be employed in these constructions. For instance, -*ta* and -*me*- combine in (Ashton 1944: 251):

(10) *(Usipokuja mapema), ni*-*ta*-ku-*wa* ni-*me*-lala. 
    *(unless you come early), 1SG-FUT-KU-be 1SG-PERF-sleep*
    ‘Unless you come early, I shall be asleep.’

I do not discuss the numerous possibilities of such constructions (cf. Ashton 1944: 247ff.), but only mention this phenomenon here. We will see that in the Congo the decreased possibility of expressing Swahili inflectional notions morphologically is compensated by a higher reliance on these more analytic means.

### 7.2.2 Analysis

#### 7.2.2.1 Economy

In Standard Swahili inflectional categories are: agreement with the subject, the object, and with a relativised object. The agreement features are noun class (or gender), person and number. On the level of the tensed stem negation and temporal, aspectual, modal and discourse functional notions are expressed. Agreement categories are clearly distinguished: there are separate slots for subject, object, and relative agreement, and the functions of the affixes are clearly distinct. In the tensed stem the numerous combinations of affixes that fill the template, Neg + TMA + Stem + Mood, are harder to divide into basic notions that could act as classical morpheme building blocks.

To describe the tensed stem we could simply enumerate all 30 tensed stem combinations with their meanings. This is, however, not very satisfying because these meanings do not correspond to unitary affixes. Secondly, and more importantly, there are clear correspondences between meanings and parts of the tensed stem. The ‘Neg’ prefixes occur only in negative tenses, and the Mood-suffix, -*e* is sensitive to the modal distinction which I called ‘subjunctive’. The TMA prefixes can also be grouped depending on whether they are more involved in temporal, aspectual, modal, or discourse reference (cf. Ashton 1944: 247). That is, -*li*-, and -*ta*- have a clear temporal meaning, -*nge*-, -*nga*-, -*ngali*-, and -*japo*- are used primarily in modal contexts. Other TMA prefixes, like -*a*-, -*na*-, -*ki*-, -*ka*- and -*me*- present more problems. These TMA prefixes have both temporal, aspectual and discourse functions.

My approach to the description of the tensed stem is a pragmatic one: the purpose of my division of the Standard Swahili verb is to make a comparison with Katanga Swahili and Kenyan Pidgin Swahili possible, and I do not intend to examine the validity of universalistic semantic assumptions. To a certain extent, it does not make much difference how I analyse the Swahili verb; even if I assumed only a few semantic notions,
only a complex structure with lots of allomorphy, fusion and fission could account for the Swahili tensed stem. The difference with simplified varieties like Katanga Swahili would then lie in the loss of allomorphy, fusion and fission. When, on the other hand, I assign each tensed stem to a different semantic category, the changes in Katanga Swahili are phrased in terms of loss of semantic categories. Whether ‘Economy’ increases or ‘Transparency’, both tendencies correlate with Type 2 characteristics.

However, when I compare simplification in Swahili with simplification in other languages, my analysis of Swahili must be compatible with the framework I use for those other case-studies. In addition, in section 2.4 I argue that in different types of language processing Economy and Transparency are valued differently. Therefore, although some arbitrariness in my choice for an analysis is not devastating for the broad outline of this dissertation, it prevents more fine-grained conclusions with respect to the preferences of language users for Economy versus Transparency. I prefer, following Ashton (1944), Polomé (1967) to treat negation and mood as semantic categories that are expressed in Neg and Mood, while I assume that TMA is a complex conglomerate of aspect, tense and mood. This choice implies the following for a description of Economy in Standard Swahili:

I. In constructions with relative agreement markers, only the TMA markers -na-, -li- and -taka-, which is the allomorph of -ta-, are allowed.

II. Negation in relative verbs does not combine with TMA markers.

III. Negative constructions are possible with five TMA markers: with -ku- and -ja-, which are only used with negation, and with -ta-, -nge-, and -ngali- which are also used in the affirmative.

IV. In the subjunctive mood, expressed in the final suffix, -e-, only the TMA prefix -ka- is allowed.

V. Negation in the subjunctive mood, expressed with final -e- does not combine with TMA prefixes.

### 7.2.2.2 Transparency

#### Allomorphy

The only clear-cut case of allomorphy in TMA prefixes is -taka-, which is the allomorph of the future tense TMA prefix -ta- in relative constructions. In addition it could be argued that the TMA marker -ku- is an allomorph of -li- (cf. Hinnebusch & Mirza 1979: 88) and -ja- an allomorph of -me-. However, there is not a one-to-one-relationship between -ku- and -li- and between -ja- and -me-. That is, negation of affirmative sentences with -li- or -me- does not uniquely correspond to the supposed allomorphs. Therefore, we conclude that under negation TMA notions are just differently distributed over the TMA markers in comparison with affirmation. We cannot speak of allomorphs. Instead there is just a wide range of TMA markers, with different conditions of occurrence.

The agreement affixes display several kinds of allomorphy: first of all some of these affixes, that is, the 2nd person prefixes, and the class 1 prefix, vary depending on whether they refer to subject or object agreement (cf. Table 7.2 above). The affixes that mark relative agreement are all followed by and merged with an o, yielding some
phonologically conditioned allomorphy, while the class 1 concord affix has a morphologically conditioned allomorph in the relative tense. Secondly, within each of the subject agreement markers, assimilation to a following vowel occurs. This assimilation is in several cases, however, sensitive to the morphological environment (cf. Polomé 1967: 59ff.). Were we to adopt a more abstract notion of morpheme, we could suppose that the negative prefix has two allomorphs, in two slots. The loss of one of the negation markers would then count as a reduction in allomorphy. We could also suppose that the negative markers express negation and mood, or tense. In that case, if there was loss of one of the negation markers, it would count as a reduction in fusion. However, such an abstract notion of a morpheme would only be introduced here to keep the notion of negation uniform. In fact, there are just two negation patterns, without any reason to subsume them further under an abstract morpheme of negation with two allomorphs.

**Fusion**

We could assume that number is part of the noun class composition. This would increase the instances of fusion, but reduce the number of noun classes, by dividing them into singular versus plural noun classes. However, whether a noun class is a so-called singular or plural noun class has no effects on the rest of the grammar, and therefore, we must conclude that number does not constitute an inflectional category in the noun class, but only a derivational category (cf. Schadeberg 2001). Moreover, Bantu noun prefixes are easily learned by children (cf. Demuth 1992: 594); there is no rule overgeneralisation in the acquisition of complex plural agreement in Sesotho, in contrast with e.g. German (cf. Mills 1985: 245). This indicates that the categories of singular and plural are derivational and not inflectional, at least in Sesotho, which implies that there is not one ‘plural’ category, but several ways to derive plural nouns in Sesotho.

Nevertheless, when a noun has an animate referent, number plays a role. In that case, agreement is sensitive to the number of the animate noun, while noun class is irrelevant. Therefore, in pronominal 1st and 2nd person concord and in class 1 concord (which comprises, in fact, +animate 3rd person), gender is fused with number.

There are fused forms for combinations of the pre-initial ha-, NEG, with singular participants: NEG and 1 SG (ha-ni) fuses into -si-⁴⁹⁸ NEG and 2 SG (ha-u) fuses into -hu-. NEG and class1 (ha-a) fuses into ha-. Another apparent case of fusion is -ka- for the class 1 marker -a- and the perfect TMA marker -me- (cf. Schadeberg 1973: 24). However, for reasons of a historical, comparative and stylistic nature, this -ka- is better considered as an alternative SUB.1SG marker, referring without further TMA marker to a perfect tense.

**Homonymy**

Apart from the homonymies that arise as results from Economy, there are some other accidental homonymies in the concord affixes. These are in the shaded cells in Table 7.2.

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⁴⁹⁸ It is striking that -si- has no resemblance to the fused elements at all, and, moreover, that it is similar to the post-initial negation marker (cf. Bonet 1994, for similar phenomena in cliticisation in Romance languages).
Fission
Fission is the distribution of one semantic category over more than one position. It could be argued that mood is fissioned over the TMA slot and the Mood slot. However, I assume that the precise semantics of suffixal -e is different from the semantics of the modal meanings in the TMA markers.

The other candidate for fission is negation. On the one hand, the Swahili verb may be analysed as having primary negation elements, which are, _ha_- and _si_- . In this analysis other effects of negation are only allomorphic. The TMA markers _ku_- and _ja_- and the mood suffix _i_- would be only allomorphs of other morphemes. Above I rejected this analysis for the TMA markers. This entails that negation is fissioned over two positions, and when we assume that _i_- is not an allomorphic mood affix, even over three positions. A similar analysis is made by Carstairs-McCarthy (1987: 14) for the negation element in the Bantu verb in Zulu.

This analysis conflicts with the position of Noyer (1992), who claims that fission may only occur i) when languages have templatic constraints on verbs, and ii) when the semantic element that is fissioned is a fused element, because each semantic notion that is expressed once, is no longer available to be expressed again on another position in the verb. Therefore, according to Noyer (1992), both cases of fission here, would not be real cases of fission, but must be explained as, for example, allomorphy.

Conclusion
Some aspects of Swahili verbs cannot be described in a model in which each morpheme expresses one semantic notion, and each semantic notion is expressed in one morpheme. This can be described in terms of number of categories, or in terms of allomorphy, fusion or fission. I have already discussed which of these labels are less appropriate. Now I repeat the complex phenomena which give rise to different analyses, and which we expect to disappear in a Swahili variety that is more Transparent and Economic:
1. Negative tenses influence slots Neg, TMA and Mood.
2. There is a wealth of TMA markers, which express negation, temporality, aspectuality and modality. They also have discourse functions.
3. There are two negative prefixes in different slots.

7.2.2.3 Isomorphy
According to the Isomorphy Principle, there is an order of semantic notions universally preferred, cf. section 2.1.3.2, which is (”>” means ‘is ordered closer to the verb root than’, and does not implicate any left or right ordering):
Stem > Valency > Voice > ObjAgr > Aspect > Tense > Mood > SubAgr.
Standard Swahili has the following affix order:
Neg + Sub + Neg + TMA + Rel + Obj + Stem + Mood + Rel.
When we decompose this affixal order into a prefixal and a suffixal order we arrive at two hierarchies (in terms of distance to the verb, irrespective of left/ right branching):
Stem >> Obj >> Rel >> TMA >> Neg >> Sub >> Neg.
Stem >> Mood >> Rel.
Notwithstanding Neg and Rel, whose position in the ideal order is not entirely clear, this order complies with the Isomorphy Principle. However, in one respect Swahili deviates from the Isomorphy Principle. This Principle says that the affix order must be invariant. In the Swahili affix order, however, both Rel and Neg have different positions in the word under different conditions, cf. example (11) (Ashton 1944: 113):

\[(11) \text{ Vitabu a-si- vyo- vi- taka Hamisi.} \]
books 1-NEG-REL8-OBJ8- want Hamisi

‘The books that Hamisi doesn’t want.’

In example (11) the affix order is Sub-Neg-Rel-Obj-Stem, while in examples (12) and (13) (Ashton 1944: 112, 71) the order is Sub-Obj-Stem-Rel, and Neg-Sub-TMA-Stem.

\[(12) \text{ Kitabu a-ki-taka-cho Hamisi.} \]
books 1-7-want-REL7 Hamisi

‘The book which Hamisi wants.’

\[(13) \text{ Ha- tu- ku- taka.} \]
NEG-1PL-PAST-want

‘We did not want.’

### 7.2.4 Other Principles

For Swahili several templatic order constraints must be assumed to account for the various possible Swahili affix orderings examined above.

Rules of assimilation influence the amount of allomorphy in the concord affixes. In addition, stress assignment in Swahili influences morphological structure. As I described above, in section 7.2.1.4, the occurrence of the affix infinitive affix -\(k\)u- is largely determined by the metrical considerations.

#### 7.3 Katanga Swahili

##### 7.3.1 Data

The semantic notions that are expressed inflectionally in Katanga Swahili are less diverse than in Standard Swahili, while the range of semantic values within each notion has notably decreased. The order of affixes in Katanga Swahili is as follows:

Neg + Sub + Neg + TMA + Obj + Stem + Mood,
in which Neg in first position and Neg in third position are in complementary distribution, as in Standard Swahili.

I will now describe each semantic category and its expression in Katanga Swahili. I base this description on data from Bostoen (1999), De Rooij (1997 and pers.comm.), Gilman (1979), Kapanga (1993), Polomé (1986) and Schicho (1982).

##### 7.3.1.1 Tense, aspect and mood

The position of the TMA marker in Katanga Swahili is still the same in the affix string as in Standard Swahili. The number of TMA markers has, however, decreased. The -\(a\)-marker, which Ashton called a ‘present indefinite’, and which was already rather infrequent in Coastal Swahili no longer exists in Katanga Swahili. Instead, the former ‘present definite’ marker -\(na\)- is used, and, according to Schicho (1982), it functions
today as a general morphosyntactic dummy element. The TMA marker, -me-, has also become redundant, and its function has been taken over by auxiliaries. The modal TMA markers, -nge-, -ngali-, -nga- and -japo- have also disappeared, and, instead, periphrastic means are used to express conditionality, and counterfactuality. Compare, for example, Standard Swahili conditional (14) with Katanga Swahili conditional (15), where the conditional element kama, ‘if’ is used (De Rooij 1997: 327):

(14) Mti huu u-ngu-anguka u-nge-ni-ua.
    tree DEM 3-COND-fall 3-COND-1SG-kill
    ‘If this tree were to fall, it would kill me.’

(15) Kama Mungu a-na- tu-achiria (h)ivi mateswa i-na-pita.
    if God 1-PRES-1PL-forgive DEM sufferings 6-PRES-pass
    ‘If God forgives us these things, the sufferings will pass.’

The TMA marker -ka- still exists, but is less frequently used (Schicho 1982: 71). It can, however, still be used in the subjunctive mood with the suffix -e.

Apart from reductions in inflectional morphology, there is also one replacement. The habitual TMA-marker -hu-, that blocked subject agreement marking in Standard Swahili, has disappeared. Instead, we find a pre-final habitual marker, -ak-, that may co-occur with subject agreement. This marker may also co-occur with different tense markers, yielding new temporal interpretations, like remote past, and remote future. In addition we find an auxiliary verb zowea, that has also a habitual sense (cf. Schicho 1982: 91).

According to De Rooij (1997: 325) the functions of the TMA markers that are still in use today, have been ‘thoroughly reconstructed’. The reference to a temporal dimension as in Standard Swahili would have yielded to a creole-like TMA semantics, in which aspectual and modal meanings are expressed primarily, and tense distinctions only by implication (cf. Schicho 1982: 73). On the other hand, Kapanga (1993: 447) says: “…Shaba Swahili has by and large kept the TMA system found in east African Swahili.” Perhaps this difference between Kapanga’s view and De Rooij and Schicho’s view on Katanga Swahili semantics parallels the difference between a variety closer to Standard Swahili and a basilectal variety.

In conclusion, out of the 13 TMA prefixes, -a-, -na-, -li-, -ta-, -ka-, -me-, -ki-, -ku-, -ja-, -japo-, -nga-, -nge-, -ngali-, and -japo-, in Katanga Swahili only 7 have been retained, which are, -na-, -li-, -ta-, -ka-, -ki-, -ku-, and -ja-. In addition, the habitual inflectional marker has been replaced, and there have probably been some semantic reinterpretations.

7.3.1.2 Negation and mood

In Katanga Swahili the negation affixes -ha- and -si- are used in the same way as in Standard Swahili, and the negative marker -ha-, and 1SG -ni- still fuse into -si-, cf. Schicho (1982: 63ff). Negation in Katanga Swahili, in comparison with Standard Swahili, is, however, more often expressed with the help of sentence final negation elements, and, so-called, ‘negative verbs’, that function as auxiliaries (De Rooij 1997: 325ff.).

In Standard Swahili there were two suffixes -i and -e, that could occupy the Mood slot and modify the final vowel of the stem. In Katanga Swahili these two suffixes have merged into one affix, -e, which is now used for both the subjunctive and the negative
present. This affix is also used at times in the negative future and negative past in Katanga Swahili (Schicho 1982: 67).

7.3.1.3 Agreement

In Table 7.3 I show the Standard Swahili concord affixes in the left columns, and the Katanga Swahili concord affixes on the right:

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<td><em>mtu, person</em></td>
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<td>-ba-</td>
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<td>-</td>
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<td>-</td>
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<td>-</td>
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<td>-</td>
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<td><em>kiti, chair</em></td>
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<td>-ki-</td>
<td>-ki/-i/-i-</td>
<td>cho</td>
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<td>-vi-</td>
<td>-bi/-i/-i-</td>
<td>vyo</td>
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<td>-</td>
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<td>-</td>
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<td>you</td>
<td>u/-w-</td>
<td>-ku-</td>
<td>-ku-</td>
<td>ye</td>
<td>-</td>
</tr>
<tr>
<td>1&lt;sup&gt;st&lt;/sup&gt; pl</td>
<td>we</td>
<td>tu/tw-</td>
<td>-tu-</td>
<td>-tu-</td>
<td>o</td>
<td>-</td>
</tr>
<tr>
<td>2&lt;sup&gt;nd&lt;/sup&gt; pl</td>
<td>you</td>
<td>m(u)/mw-</td>
<td>-wa-</td>
<td>-mu/-mi-</td>
<td>o</td>
<td>-</td>
</tr>
</tbody>
</table>

The noun class system has been altered in Katanga Swahili; two classes, class 12 and 13, which existed in other Bantu languages but not in Standard Swahili, have been introduced in Katanga Swahili through substrate influence. Furthermore, in contrast with Standard Swahili class 11 and 14 agreement affixes have different shapes again. Other noun classes have been rearranged and restructured; several noun classes have different functions in Katanga Swahili. For instance, augmentative meaning was expressed in Standard Swahili with the help of classes 4, 5, and 6. In Katanga Swahili however, classes 7 and 8 are used in this function (cf. Bostoen 1999: 62ff; Kapanga 1993: 446ff).

For Kapanga (1993), these changes of the noun class system without reduction of the number of classes are an argument for the non-creole status of Katanga Swahili. However, Kapanga (1993) hardly takes the noun class agreement system into account in
Katanga Swahili

his argument. De Rooij (1997: 323), and Bostoen (1999: 71), on the other hand, argue that the changes in the agreement system imply a reduction in inflectional complexity.

In subject agreement, fewer class distinctions are expressed than in Standard Swahili. Several noun classes, which are, class 3, 4, 5, 6, 9, 10, that trigger different subject agreement affixes in Standard Swahili, trigger only one affix in Katanga Swahili, that is, \textit{i}-. Even classes 7 and 8 sometimes have this concord affix. Compare Standard Swahili (16a) with Katanga Swahili (16b) (Kapanga 1993: 446):

 houses 10-PAST-fall

b.  Nyumba \textit{i-li/ri-}anguka.
 houses 1-PAST-fall

‘The houses fell.’

However, classes 1 and 2, and sometimes classes 7 and 8 are still distinguished in subject agreement. In addition, the new noun classes, 12 and 13, classes 11, 14 and 15, and the locative classes 16, 17 and 18 in Katanga Swahili also still trigger different subject agreement affixes. When we count the number of different subject agreement affixes (including class 7 and 8, excluding class 5), we still have 14 different prefixes left in Katanga, as in Standard Swahili.

The object agreement system has been reduced further. Only for classes 1, 2, 7, 8, and the locative class 18 are object agreement affixes used.\textsuperscript{199} The verb does not agree with nouns from other classes in object position. When we include the number of distinct person prefixes, we arrive at 7 different object concord affixes for Katanga Swahili, while we had 14 different markers in Standard Swahili. Agreement with a relativised element occurred in several tenses in Standard Swahili. In Katanga Swahili, however, relative agreement no longer exists. In Katanga Swahili, as in Standard Swahili (see above), there is still variation between mono-syllabic verb stems that retain -\textit{ku}- when they are preceded by unstressed prefixes, and other verb stems that delete -\textit{ku}- in finite verbs (De Rooij, pers.comm.).

According to De Rooij (1997), Katanga Swahili tends towards a system in which only the animacy distinction is important. The growing importance of this distinction is visible in the concord affixes. Class 1 and 2 affixes that refer to + animate referents are retained in separate forms, while other affixes tend to merge into one general agreement marker, \textit{\textit{i}-},\textsuperscript{200} or even to disappear completely. In addition, + animate nouns from classes other than class 1 or 2 still agree with class 1 or 2 affixes. The increasing importance of animacy is also visible in the plural formation of class 9 nouns. The noun class marker used for this function was the class 10 prefix in Standard Swahili. In Katanga Swahili, however, plural noun formation of class 9 nouns is conditioned by animacy. That is, animate class 9 nouns have a plural prefix of class 2, which is the general class for animate plurals.

\textsuperscript{199} According to Schadeberg (pers.comm.) the subsistence of class 7 and 8 could be due to their high uniformity across different word-classes. That is, the \textit{ki/vi}-affixes have the same shape, whether they are nominal prefixes or verbal, pronominal or adjectival agreement affixes.

\textsuperscript{200} According to Schadeberg (pers.comm.) this general \textit{i}-affix could well be the extension of the class 9 marker.
7.3.1.4 Complex verbal constructions


For some meanings, like ‘perfect aspect’, Katanga Swahili must use auxiliaries, since it has lost the Standard Swahili *-me*-TMA prefix. Therefore, auxiliaries, e.g., based on the verb *isha*, are more frequent in Katanga than in Standard Swahili (De Rooij 1997: 324).

7.3.2 Analysis

7.3.2.1 Economy

In Katanga Swahili all the semantic notions that are expressed in Standard Swahili are also expressed, except agreement with a relativised noun.

The way these notions combine is largely the same: some TMA markers are only used in negative tenses, and only a few TMA markers are allowed in the subjunctive mood. Of course, there are fewer combinations, since there are fewer TMA markers. For instance, negative constructions are possible only with three instead of with five TMA markers, since the TMA affixes, *-nge*- and *-ngali*- have disappeared. Only the subjunctive mood suffix *-e* has extended its domain: the Standard Swahili *-i* suffix has now changed into in the negative present, and the *-e*-suffix is now also used sometimes in the negative past and the negative future.

Economy in Katanga Swahili operates mainly within each category. The number of TMA markers has decreased from 13 to 7, and, in particular, the TMA markers with modal meaning have disappeared. The marking of the habitualis with *-hu*, which stood in Sub-position in Standard Swahili, has been replaced by the marking with the suffix *-ak*, and by periphrastic means.

The wealth of concord affixes in Standard Swahili has diminished in Katanga. The number of subject agreement affixes has remained the same, but the object affixes decreased from 14 to 7, and the 10 relative agreement affixes have completely disappeared. The category of noun class has partly lost its role in concord, especially in object concord, while animacy has become more important for agreement.

In conclusion, although most of the categories remained present in Katanga Swahili, within these categories Economy became more important than in Standard Swahili. One category, the habitualis, has been replaced by another morphological device and by auxiliaries.

7.3.2.2 Transparency

In section 7.2.2.2 I mentioned three phenomena in Swahili that were complex in terms of Transparency. I repeat:

I. Negative tenses influence slots Neg, TMA and Mood.

II. There is a wealth of TMA markers, which express negation, temporality, aspectuality and modality. They also have discourse functions.

III. There are two negative prefixes in different slots.

These phenomena have partially decreased their violation of Transparency.
First of all, the so-called ‘tensed stem’ (cf. section 7.2.1), which was of a rather non-compositional nature, has become a little more transparent in Katanga Swahili. That is, the negative suffix -i has been replaced by the subjunctive suffix, -e. Compare (17) (Hinnebusch & Mirza 1979: 238) with (18) (Schicho 1982: 66):

(17) Si- somi.
    1SG.NEG-study-NEG
    ‘I do not study.’

(18) Mi- si- siki- e.
    1SG-NEG-understand-SUBJ
    ‘I do not understand.’

As a result, negation no longer selects a special affix in the Mood slot, but is subsumed under the subjunctive mood. The notion of negation is now only distributed over two slots instead of three, which can be called a reduction in fission, or, in other words, the mood affix has a unitary form without any allomorphy.

Secondly, the diversity of TMA markers has diminished.201 This affects the tensed stem which is more transparent in Katanga, simply because the smaller number of TMA markers can make less combinations with Neg and Mood markers. However, there are still special TMA markers that only combine with Neg.

Thirdly, the two negative prefixes in two different positions in the Swahili template still exist, and still cause opaqueness in affix order (see next section), fusion and allomorphy.

In conclusion, Katanga Swahili has become a little more transparent than Standard Swahili, but still retains some opaqueness.

7.3.2.3 Isomorphy

The affix orderings in Standard Swahili and Katanga Swahili are:

Standard: Neg- Sub- Neg- TMA- Rel- Obj- Verb - Mood- REL-
Katanga: Neg- Sub- Neg- TMA- Obj- Verb - Mood-

Katanga differs only from Standard Swahili in that the REL element has disappeared. Like the Standard Swahili affix order, the Katanga order complies largely with Isomorphy. The Isomorphy Principle is, however, violated in Standard Swahili in which there are several different orderings of morphemes. In Katanga Swahili there is less variation in affix orders, because of the loss of the relative agreement affix. Now there are only two affix orders: Neg preceding, and Neg following the SUB-slot.

7.3.2.4 Other principles

The templatic constraints of Standard Swahili that ruled the language specific affix order are still present in Katanga Swahili. Phonological principles that govern stress are also still important for mono-syllabic verbs with the -ku-affix.

201 In an analysis in which the TMA were divided into three groups: tense, aspect and mood, we would say that a whole category disappeared. That would be a clear-cut case of more Economy, while in my analysis, I conceive an increase of transparency in the tensed stem. This is a case where the way of analysing determines whether we deal with increase in Economy or Transparency (cf. the discussion in section 7.2.2.1).
7.4 Kenyan Pidgin Swahili

7.4.1 Introduction
There is much variation in the Swahili spoken in Kenya. It includes heavily pidginised varieties, Standard Swahili and even native Swahili varieties as spoken in Mombasa. As I described in section 7.1.4, the standardised variety of Tanzania has less status in Kenya, and in addition no other clear unifying norm developed, as it did in Katanga. The kind of Swahili spoken depends on the first language of the speakers, their social status, the style, and the situation. Scotton (1979: 116) says: “…there is a good deal of inconsistency in inflection in this variety of Swahili: not all speakers by any means will always choose the usual cover form; they may follow Standard agreement rules at times, or even use another form as cover form.” Indeed, in the examples that Scotton provides, the inflection varies from basic analytic juxtaposition to fully inflected forms for negation, mood, and agreement.

This makes the language harder to analyse. It is difficult to decide what forms belong to Kenyan Pidgin Swahili, and what forms are borrowings, and code-switching phenomena. Because of this variation, it is hard to provide one system of inflection. I describe the most pidginised forms, but also give attention to less pidginised forms where relevant. This problem is not unique to Kenyan Swahili, but is always present when two closely related varieties are spoken in the same region, cf. the discussions on Black English Vernacular and other forms of English after Labov (1972), or on the interaction between Arabic colloquial varieties and Standard Arabic (Versteegh 1979: 189ff.).

We must also ask ourselves whether Kenyan Pidgin Swahili is a variety of Swahili, or whether it is only a collection of individual imperfect attempts to master ‘full’ Swahili. There are two indications that it is a variety with its own conventions. First of all, as I mentioned in section 7.1.4, there are extremely fluent speakers of Swahili pidgin who do not strive to master the Standard language. We would not expect fluency when speakers’ goals were always to master the Standard. Secondly, the variation among speakers is lower than when they were all individual learners of Standard Swahili. Wald (1981: 11) argues that use of the verbal (TMA) marker -na- is typical for Pidgin Swahili speakers. In addition, they use a set of personal possessive pronouns that is not derived from personal pronouns. These are conventions specific to Pidgin Swahili, which are unlikely to be invented anew by each individual second language learner of Standard Swahili. In conclusion, Kenyan Pidgin Swahili has some specific norms, and is not only ‘broken Swahili’. I will not discuss whether we should call this variety a pidgin, a register, or ‘broken Swahili’. Instead, I continue my examination of the differences between Standard Swahili and Kenyan Pidgin Swahili (KPS).

In Kenyan Pidgin Swahili there are no semantic notions that must be expressed inflectionally, since it is possible to use only bare stems, or frozen inflectional forms. The semantic notions that may be expressed are: negation, agreement, mood, and notions of the TMA slot of Standard Swahili (see above). When describing Swahili in terms of positions, at most seven positions can be distinguished:

Neg + Sub + Neg + TMA + Obj + Stem + Mood.

The most pidginised forms in Kenya do not have more than two positions:

Aff-Verb.
I base my data on Duran (1979), Heine (1973), Scotton (1979), Vitale (1980), and Wald (1981). Although they describe pidgin Swahili spoken in different cities and regions, their descriptions of the most basilectal pidgin Swahili correspond enough to each other to treat them as one variety.

### 7.4.2 Data

Several TMA markers are still in use in Kenyan Pidgin Swahili, which are, -\(a\), -\(li\), -\(ta\), -\(na\), -\(me\), -\(ki\), and \(ka\). No mention is made in the literature about modal TMA markers in use in Kenya. This is, however, the maximum range of TMA markers possible in Kenyan Pidgin Swahili. In the more basilectal style, there is only one TMA marker, -\(na\), or, in the north, -\(ma\), which is used for all tenses, and persons. It is used in affirmative indicatives, and is absent in negatives and imperatives. Typical examples from Kenyan Pidgin Swahili and its corresponding Standard variant are (Wald 1981: 11):\(^{202}\)

\(\begin{align*}
(19) & \quad \text{Saa tle mbwa na-kufa ye na-ona na-sema na kweli hii mama-ngu na-kufa.} \\
& \quad \text{time that dog NA-die he NA-see NA-say COP true THIS mother-MY NA-die} \\
& \quad \text{‘When he saw the dead dog, he said, ‘It is true that my mother has died.’} \\
(20) & \quad \text{A-li- po-mw-ona mbwa a-me-kufa a-ka-sema ni kweli mama-ngu a-me-ufa.} \\
& \quad \text{1-PAST-16-1- see dog 1-PERF-die 1-CONS-say COP true mother-MY 1-PERF-die} \\
& \quad \text{‘When he saw the dead dog, he said, ‘It is true that my mother has died.’} \\
\end{align*}\)

Meanings expressed by TMA markers in Standard Swahili are expressed in Kenyan Pidgin Swahili by auxiliaries and lexical elements, like \textit{kwisha}, ‘finish’ (cf. Heine 1973: 91ff.), or they are simply omitted, as in example (19) above. When other TMA markers occur, -\(ta\) is the first to appear, followed by -\(li\), -\(me\), -\(ki\), -\(ka\) and -\(a\) (Wald 1981). Vitale (1980: 60) suggests that these latter five TMA markers are used in speech influenced by Standard Swahili.

According to Scotton (1979) in Kenyan Pidgin Swahili negation is expressed with the help of a new negation element. However, prefixal negation is not absent, since she also gives an example of a verb with a negation prefix, \textit{hamkuipata}, ‘you didn’t get it’, and Duran gives: \textit{u-siku-fe}, ‘may you not die’ (Duran 1979: 147).

In Kenyan Pidgin Swahili inflectional suffixes are not consistently used. In an example from Scotton (1979: 124) we find:

\(\begin{align*}
(21) & \quad \text{Kama taka, chukue, pana take, kwenda chumba ngine, pata rahisi.} \\
& \quad \text{if want, take-E, NOT want-E, go.to room another get cheap} \\
& \quad \text{‘If you want it, take it, if you do not want it, go to another room, and get it cheap.’} \\
\end{align*}\)

In example (21) we see \textit{chukua/chukue}, and \textit{taka/take}, with the mood suffix -\(e\). In addition, the prefixal \(na\)- marker may not only be a general TMA marker, but may also distinguish polarity and mood, since it is only used in affirmatives and indicatives.

Both subject and even object markers are occasionally found in Kenyan Pidgin Swahili (cf. Scotton 1979: 120, \textit{a-na-tu-amba}, 1-PRES-1PL-tell, ‘he tells us’), but agreement with the relativised noun is absent. Again, it is hard to find out whether this is part of KPS, or due to the influence of Standard Swahili. When there is agreement, it is fully defined by the animacy distinction. The original Swahili noun class system does not play a role anymore. There is only agreement with 1\textsuperscript{st} or 2\textsuperscript{nd} persons, or with 3\textsuperscript{rd} persons expressed

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\(^{202}\) Verbs are in italics.
by class 1 or class 2 concord affixes. The infinitival marker, -ku-, is still found in mono-
syllabic verbs, e.g. in (Scotton 1979: 118):

(22) Yeye nakuja kesho.
    he NA-kU-come tomorrow
    ‘He is coming tomorrow.’

This -ku- affix is, however, lexicalised, and we see it in contexts where it was not found
in Standard Swahili, cf. u-siku-fe, ‘may you not die’ (Duran 1979: 147), versus Standard
Swahili ‘u-si-fe’.

Wald (1981) found that in KPS spoken in Mombasa, there was only subject marking if
there was also a TMA marker, but not the other way round. Furthermore, the use of
subject markers sharply increased when instead of the verbal marker, na-, more specific
TMA markers were used.

In most cases, however, no agreement markers are used at all, and, instead, pronouns and
word order are used to express syntactic relations. In Kenyan Pidgin Swahili, instead of
TMA markers, constructions with auxiliaries are widely used to express aspectual, and
other TMA notions. These constructions with auxiliaries seldom display inflection.

7.4.3 Analysis

Almost no Standard Swahili category is obligatory in KPS. Usually the only inflectional
morpheme in KPS is na- (cf. Wald 1981: 11), which is a verbal marker or an indicative
affirmative marker. In less basilectal KPS, we see more TMA notions, agreement, and
sometimes negation and the e-mood suffix.

In Standard Swahili there is agreement with the category of noun class. In KPS, there is
only agreement on the basis of animacy. The occurrence of agreement depends on the
TMA markers. The more TMA markers, the higher the chance that there is agreement.

There is variation in KPS in the TMA-marker: na-/ma-. This is, however, regional and
not allomorphic variation. Due to the loss of nearly all inflectional affixes, apart from
na-, there is no longer any place for fusion, fission or homonymy in basilectal KPS. In
less pidginised forms, as in, hamkuipata, ‘you didn’t get it’, there are still some
violations of Transparency, as found in Katanga Swahili as well, due to the co-
ocurrence of -ha- and -ku-.

According to the Isomorphy Principle, there is an ideal order of semantic notions (cf.
section 2.1.3.2). Standard Swahili deviates from this order in several respects, while
Katanga Swahili is closer to the ideal, due to the loss of ‘Rel’ (see above). The order in
Kenya varies depending on whether the more pidginised or the more standardised
Kenyan variety is taken into account. To compare the several affix orderings in Swahili
the morpheme orders in Standard, Katanga, ‘Elaborate’ and ‘Pidgin’ Kenyan Swahili are
given. ‘Elaborate’ Kenyan Swahili may be defined as the most elaborate speech forms
that are found in the literature on Kenyan Pidgin Swahili.

<table>
<thead>
<tr>
<th>Standard:</th>
<th>Neg- Sub- Neg- TMA- Rel- Obj- Stem- Mood- Rel</th>
</tr>
</thead>
<tbody>
<tr>
<td>Katanga:</td>
<td>Neg- Sub- Neg- TMA- Obj- Stem- Mood-</td>
</tr>
<tr>
<td>‘Elaborate’ Kenyan:</td>
<td>Neg- Sub- Neg- TMA- Obj- Stem Mood-</td>
</tr>
<tr>
<td>Pidgin Kenyan:</td>
<td>Neg- Sub- Neg- TMA- Obj- Stem Mood-</td>
</tr>
</tbody>
</table>
The more elaborate variety of Pidgin Swahili spoken in Kenya has retained the same affixes and positions as Katanga Swahili. Basilectal KPS, however, has less affixes and more readily agrees with the Isomorphy Principle. In Kenyan Pidgin Swahili the verb no longer complies to a templatic constraint that governs the verbal structure in other Swahili varieties.

In conclusion, Economy, Transparency and Isomorphy have become more important in Kenyan Pidgin Swahili.

7.5 Linguistic and social changes in Swahili

When we survey the long history of the Swahili varieties and speech communities, the following picture emerges. From its inception, Swahili has been a language learned by second language learners, first because of local migrations and social changes, and later because of its use in trade overseas and inland. In the 19th and 20th centuries Swahili expanded over large parts of east and Central Africa, and its use in trade, and in other contacts with non-native speakers intensified. In these last centuries, in the Congo and especially in Kenya, there was no move to learn a pure form of as it was spoken by native Swahili speakers, and fewer first language learners were involved.

The number of inflectional suffixes has decreased to two in Standard Swahili. This loss of suffixal distinctions is compensated by an increase in grammaticalised aspectual TMA markers. Standard Swahili has fewer tense distinctions in the TMA position than many other Bantu languages. The reduction in tense distinctions must be dated before the emergence of Swahili around 800 CE, since related languages also miss these Bantu characteristics (Nurse 1996: 285). In the later history in Katanga and especially Kenya Pidgin Swahili, the number of TMA markers and modal suffixes has decreased further. In the Congo there is only one inflectional suffix, and in Kenya none. This loss of semantic categories is offset by a more frequent use of a larger set of auxiliary verbs.

Verbal agreement has been reduced and become more transparent in Katanga and especially in Kenyan Pidgin Swahili. During the 1200 year long development of Swahili on the coast two noun classes were lost in verbal agreement and two were phonologically merged. Since the late 19th century, after the expansion of Swahili, verbal agreement has been reduced further in Katanga Swahili and KPS. In Katanga Swahili the number of noun classes themselves has not diminished, but the extent of noun class agreement has decreased. That is, with respect to verbal agreement, the partially idiosyncratic division into noun classes tends to be replaced by a more transparent distinction between +/-animate. This is a development towards more Transparency which is prevalent in Katanga and especially Kenyan Pidgin Swahili. In addition, there is also much loss of agreement. In Katanga Swahili relative agreement has disappeared from the language, and object agreement is also heavily affected. In Kenya Pidgin Swahili, even subject agreement is usually absent.

The replacement of an agreement system based on animacy instead of on noun classes had already begun in coastal Swahili, where an animacy division was added to the original noun class system, probably because of a massive influx of Arabic loan-words (cf. Nurse and Hinnebusch 1993: 351ff.). While a full replacement of the Bantu noun class system by an animacy agreement system is a change towards more transparency, the local addition of the animacy system merely complicates the matter further. That is, while in Standard Swahili animacy determines verbal agreement of nouns referring to
living beings, agreement with non-living beings and noun prefixes is still governed by the complex noun class system. Only in Katanga Swahili, where the animacy system has become more prevalent, has opacity been reduced.203 Katanga and Kenyan Pidgin Swahili comply to a greater extent with the Economy and Transparency Principles, since the tensed stem has become less opaque, less categories are expressed and the agreement system is made more transparent. Therefore, with respect to Katanga and Kenyan Pidgin Swahili my hypothesis is confirmed: when a language is used as a lingua franca in a loose open network, without high symbolic value, it becomes more transparent and analytic.

It is tempting to extrapolate these phenomena in Katanga and Kenyan Pidgin Swahili to a scenario for early coastal Swahili. In Swahili history Swahili has been used as lingua franca by second language learners, in an open network, and therefore we would expect more Transparency and Economy than in closely related languages. Indeed, we could point to the loss of inflectional suffixes, the relatively low number of distinctions in the TMA slot, and the loss of some noun class phenomena. However, several of these changes must have taken place in the period before the emergence of Swahili as a separate language at the coast. Moreover, while the direction of change in Katanga and Kenyan Pidgin Swahili is clear and while the changes took place in a short time span, the changes in coastal Swahili are much harder to interpret (cf. note 204) and span a much longer period. Nevertheless, we could hypothesise that the cycle of loss and subsequent re-grammaticalisation of inflectional categories in coastal Swahili was driven by similar social circumstances as in Katanga and Kenyan Pidgin Swahili, and that this cycle is just an extended version of what happened in the other Swahili varieties. This would imply that in all cases where categories were lost and replaced, language contact and other social factors could have played a role. To corroborate this view beyond the status of a truism, however, we would need more details about Swahili history, and a much wider examination of linguistic changes in Swahili would be required.

In contrast with Standard Swahili, in Katanga Swahili there is a clear relation between social factors and changes in the agreement system and the tensed stem. However, these social factors do not explain everything: the replacement of the habitual marker -hu- by the suffix -ak- has not made Katanga Swahili more transparent. This replacement has been shown to be a result of factors that are not part of my typology, namely, indirect influence from the Swahili variety spoken in north Katanga (cf. Bostoen 1999: 72). In addition, the renewal and extension of the noun class system is also due to interference influence (cf. Gilman 1979; Kapanga 1993). This issue, namely the amount of interference, is not discussed here. A related question is whether in addition to this typology the reduction of a language to a pidgin and its temporary use as a pidgin has specific consequences for later language structure. That is, is an earlier pidgin stage in a language apparent in later stages? In other words, is a language during a pidgin period so radically restructured, that the pidgin stage will always be visible in later stages of the language? The answer in this case is no. The changes in Katanga Swahili are due to its

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203 A parallel case is found in the locative class changes in Standard Swahili (Schadeberg, pers.comm.). Three nominal locative prefixes have been replaced by one uniform suffix in Standard Swahili, which could count as a change towards more transparency. However, the subsistence of three locative concord prefixes in adjectives and verbs, prevents any conclusion in terms of simplification for these changes in Standard Swahili.
Linguistic and social changes in Swahili

use as a lingua franca and to the influence of considerable numbers of second language
learners with a Bantu language background. Both Bostoen (1999) and De Rooij (1997)
claim that a separate stage in which pidgin Swahili would have been spoken and would
subsequently have been transformed by a next generation of first language learners is not
necessary in explaining the new Katanga Swahili structures. Although an earlier pidgin
stage is not necessary, it is also not excluded on the basis of linguistic data. Perhaps it is
only due to the similarity between the first languages of the learners with Swahili that the
detection of an earlier pidgin stage is prevented.

Another issue, simplification in Swahili, is of significance as it reveals much about
simplification in general. Therefore, the changes in Swahili and the other languages I
examined in this study are now compared. Katanga Swahili is similar to Scandinavian, in
particular Norwegian, in that while the number of TMA morphemes is reduced, and
subject and object agreement become less complex, the noun class system is slightly
enlarged in nominal phrases. This is reminiscent of Norwegian verb classes; while most
verbal semantic categories disappeared in modern Norwegian, the allomorphic strong
verb system still remains (cf. section 5.5.2.2). Perhaps even more striking is the retention
of opacity in the tensed stem. While the TMA prefixes and the Mood suffixes are
reduced in number, the interdependency of these positions with the Neg-slot remains.
That is, under negation, special negative TMA markers are used, and the Mood-suffix
remains sensitive to negation as well.

Katanga Swahili is also similar to Quechua. Reductions in both these languages do not
result in the erosion of inflection at word boundaries, as in Scandinavian. Agglutinative
structure seems to lead to reduction in number of affixes while the synthetic structure of
Scandinavian leads to gradual erosion and subsequent deletion of affixional positions.
Only in ‘radical’ Type 2 circumstances is the positional structure of the inflected verb
seriously affected in Swahili, as in Kenyan Pidgin Swahili. In analogous cases in
Germanic, the allomorphy of past tense inflection in strong verbs only disappears in
radical social circumstances, such as is found in the semi-creole, Afrikaans.

When we compare the loss of prefixes with the loss of suffixes, we find that there is no
clear preference for retention of either of these kinds of affixation. In Arabic we found
that infixal morphological processes were lost, while prefixal processes were retained,
and in some cases even extended. In Swahili simplification we do not find such
preferences. When we compare the Swahili case with the Quechua case we find that in
Bolivian, Argentinean and Ecuadorian Quechua all suffixal inflectional positions were
retained, while in both Katanga and in Kenyan Pidgin Swahili the number of prefixal
positions is reduced. However, it is hard to draw conclusions from this dissimilarity,
since this may be due to the more extreme contact situation in the Swahili case, or some
other unknown factor, for instance, phonological structure, or just accident.

As in Scandinavian, we also see some changes in Swahili that could be due to either
internal change or external change. The loss of tone and the reduction of noun classes
and TMA markers are typical candidates for an explanation in terms of contact-induced
simplification. However, these changes also occurred in related and unrelated languages
that did not have an obvious contact history. As in Scandinavian history such changes

204 The distinction between internal and external change is not as straightforward as it appears, cf.
Dorian (1993) and Chapter 8.
can at best be categorised as ‘facilitated’ in the context of social factors like language contact. Reduction of noun classes is not caused by language contact per se, though the reductions of noun class agreement in Katanga and especially in Kenya are probably due to social factors.

7.6 Swahili changes from the perspective of Optimality Theory

7.6.1 Introduction

In this section I present an analysis of the variation in Swahili inflection within the framework of Optimality Theory. Firstly, I discuss the emergence of animacy agreement in Standard Swahili, and the loss of noun class agreement in Katanga and Kenyan Pidgin Swahili. Secondly, I examine the increase of Transparency in the tensed stem in Katanga Swahili in comparison with Standard Swahili. The main themes that recur are the relation between reranking of Faithfulness and Markedness constraints and the interaction between constraints and the lexicon.

7.6.2 Agreement

In this section I show how recategorisation of nouns into new gender classes in Standard Swahili, and loss of agreement in Katanga and Kenyan Pidgin Swahili can be modelled in OT. As discussed in 7.2.1.4, verbs in Standard Swahili harmonise in subject, object and relative agreement. To account for verb agreement with noun classes in Standard Swahili we need the following constraints.205

First of all, the highest ranked constraint in all languages says:

LEX: “A complex sign is well-formed if and only if it consists only of morphemes.”206

Secondly, there must be a set of high-ranking constraints that demand expression of agreement with subject, object and relativised nouns. The most general constraint is Faith(Agr), which consists of a set of Faith(Sub), Faith(Obj) and Faith(Rel) constraints:

Faith(Agr): “Agreement marking in the Input and Output must correspond to each other.”

I do not use this constraint, because in Swahili more specific constraints dealing with agreement are necessary, which are:

Faith(Sub): “Subject agreement marking in the Input and Output must correspond to each other.”

Faith(Obj): “Object agreement marking in the Input and Output must correspond to each other.”

Faith(Obj): “Relative agreement marking in the Input and Output must correspond to each other.”

Each of these constraints can operate in two directions. For instance, Faith(Sub) consists of:

---

205 In fact, there are two equivalent ways to represent Swahili noun class agreement. We can either postulate a large set of specific faithfulness constraints, and a few general markedness constraints, or postulate more general faithfulness constraint and a specified set of markedness constraints. I choose the first option (cf. section 3.3.3).

206 cf. section 3.3.1.
Swahili changes from the perspective of Optimality Theory

Max(Sub): “If there is subject agreement marking in the Input, there must be subject agreement marking in the Output as well.”

Dep(Sub): “If there is subject marking in the Output, this must correspond to subject agreement marking in the Input.”

Each of these three dimensions of agreement comprises further subconstraints that demand agreement with a class of nouns. These have the form Faith(Sub-Noun Class-1), Faith(Sub-Noun Class-2), which I abbreviate to (Faith(SNC-1), Faith(SNC-2), etc. These consist, in turn, of Max and Dep constraints, e.g:

Max(SNC-1): “If there is subject agreement with class 1 in the Input, this must correspond to subject agreement marking with class 1 in the Output.”

This constraint is only relevant when the subject is of noun class 1. The division of nouns into classes is not universal. There are some general patterns of classification, based on semantic notions like animacy, utensils, shape, or formal notions, like metrical structure, form of the coda, etc. However, each language with noun classes has its own partly idiosyncratic way to classify nouns. Nevertheless, I consider constraints like Max(SNC-1) to be universal, because the actual content of what belongs to class 1 is language-specific, but the method to classify nouns, and to have agreement with specific classes is universal. Therefore, Max(SNC-1) in language 1 is violated by other Output candidates than this same constraint in language 2. In other words, x in SNC-x, is a variable with different extensions in different languages.

When a noun is assigned to a class on the basis of its semantics, I call the corresponding agreement faithfulness constraint Faith(NC-sem). Constraints that refer to constraints based on formal features of nouns, I call Faith(NC-form). Formal classes do not necessarily correspond to semantic classes. In Swahili both kinds of constraint are relevant and may conflict as I show below.

The family of faithfulness constraints for two noun classes is shown in Figure 7.3. Note that this figure only presents noun class constraints. It does not show dominance relations.

![Figure 7.3 Tree diagram of noun class constraints](image_url)

We suppose that the nodes on the hierarchy of Figure 7.3 are real constraints. Not only the leaves, like Faith(SNC-1), are real, but also the higher nodes, like Faith(Arg) and Faith(Sub). These latter constraints demand that there is agreement, or, agreement with the subject. They do not demand agreement with a specific noun class. In fact, Figure 7.3 comprises two other schemes, consisting of Max and Dep constraints. In Figure 7.3 violation of a higher node implies violation of all lower nodes, but violation of a lower node does not entail violation of its dominating node. Moreover, violation of all
constraints on one level, e.g. Faith(SNC-1,2,3…10), does not automatically imply violation of the dominating node, Faith(Sub), because there may be a subject agreement marker that is not specified for a specific noun class (see below). Compliance with a high node does not imply compliance with a lower node, while compliance with a lower node does imply compliance with a higher node.

The counterparts of the faithfulness constraints are markedness constraints of the form *[CategoryX, (CategoryY)]. These consist of e.g. *[NC], that is, *[Noun Class], *[Sub], that is, *[Subject Agreement], *[Obj], that is, *[Object Agreement], etc.

In addition we need an hierarchy of semantic notions, Rel -> Obj -> Sub (cf. section 3.3.2). This hierarchy says that categories that are expressed in relative agreement are also expressed in object agreement, and those which are expressed in object agreement are expressed in subject agreement. This hierarchy demands that constraints of the Faith(SubNC) set are always ranked above their counterpart constraints of the Faith(ObjNC) set. Such hierarchies restrict the possible constraint rankings and the set of possible languages (cf. Prince & Smolensky 1993).

The faithfulness constraints demand that subject, object, and relative agreement are expressed in the Output, and LEX demands that this occurs with the help of lexical items from the lexicon. The lexicon consists of items like [class 7, ki], [class 10, zi], etc. Some of these items are more specified like [class1obj, m], [class1Sub, a].

In older varieties of Swahili, and also for many words in modern Swahili, neither the mutual ranking of the various noun class constraints nor the mutual ranking of the semantic versus formal agreement class constraints is relevant. When nouns belong to one specific noun class, the various faithfulness constraints that concern the various noun classes, do not conflict with each other, cf. Tableau 7.1.

Tableau 7.1 I: Older Swahili kikapu-cl7 2-li-potea, basket SUB-CL7-PAST-get lost

<table>
<thead>
<tr>
<th></th>
<th>LEX</th>
<th>Faith (NC7sem)</th>
<th>Faith (NC7form)</th>
<th>Faith(NC8)</th>
<th>*[NC]</th>
</tr>
</thead>
<tbody>
<tr>
<td>kikapu≤7 ki-li-potea [CL7]</td>
<td>←</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>kikapu≤7 vi-li-potea [CL7]</td>
<td>*!</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>kikapu≤7 vi-li-potea [CL8]</td>
<td>*!</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>kikapu≤7 li-potea []</td>
<td>*!</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
</tr>
</tbody>
</table>

The second candidate crashes because * vi, CLASS 7 is not a lexical element. The third candidate crashes because it does not comply with the subject agreement demanded by the Input, neither formally nor semantically. The fourth candidate does not express noun class agreement at all. The first candidate is optimal.

In an earlier stage of Swahili it was easy to see to which noun class words such as kikapu belonged. Noun class assignment took place on the basis of the first syllable of the word, but at the same time, this first syllable was a nominal prefix that was prefixed for semantic reasons. That is, noun class 7 comprises words with prefixed -ki-, which is prefixed to express several semantic notions, like diminutive, physical disability, inanimate things, etc. (cf. Ashton 1944: 14). At that stage, since nouns belonged clearly

207 [] means that the form does not express any noun class.
Swahili changes from the perspective of Optimality Theory

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to one specific noun class for both semantic and formal reasons, there was no conflict between Faith(Agr) constraints that only looked at formal agreement, and Faith(Agr) constraints that looked at semantic notions expressed in agreement. In other words, Faith(NC-sem) seldom conflicted with (FaithNC-form). In the example above, the optimal candidate *ki-li-potea* agrees both formally and semantically with the subject noun.

However, this began to change after about 1700 CE when many new Arabic noun loans entered Swahili. These borrowings were classified on the basis of their semantic and phonological shape. In some instances these two corresponded. For instance, Arabic *muhandisi* fits in both its meaning ‘engineer’, and its form, the first syllable *mu*, to Swahili class 1, and it was subsumed into noun class 1. Other borrowings caused conflicts. For instance, Arabic *raqqa* ‘patch’ should belong to class 7 with diminutives according to its meaning, but to class 9 with zero-prefixes on the basis of its form, cf. Tableau 7.2.

<table>
<thead>
<tr>
<th>Tableau 7.2</th>
<th>Swahili (raqqa)7/9 ?-li-anguka (patch) ?-PAST-FALL, ‘The patch fell’</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>LEX</td>
</tr>
<tr>
<td>(raqqa)7/9 ki-li-anguka [CL7-FORM/SEM] ←?</td>
<td>*(!)</td>
</tr>
<tr>
<td>(raqqa)7/9 li-anguka [] ←?</td>
<td>*(!)</td>
</tr>
<tr>
<td>(raqqa)7/9 i-li-anguka [CL9-FORM/SEM] ←?</td>
<td>*(!)</td>
</tr>
<tr>
<td>(raqqa)7/9 ki-li-anguka [CL7-SEM, CL9-FORM]</td>
<td>*!</td>
</tr>
</tbody>
</table>

As long as *raqqa* is assigned to two noun classes, and as long as the Faith(NC) constraints are unordered with respect to each other there is no optimal candidate. In the decision what candidate to choose, either the faithfulness constraints must have a definite ranking with respect to each other, or the specification of the noun has to change, in order to receive a uniform specification. What happened was that the noun specification changed; it received a noun prefix that turned it into a univocal class 7 noun, both semantically and formally, *ki-raka*, cf. Tableau 7.3.

<table>
<thead>
<tr>
<th>Tableau 7.3</th>
<th>Input: Modern Swahili (ki-raka)7 ?-li-anguka, ‘The patch fell’</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Faith (NC-7sem)</td>
</tr>
<tr>
<td>(ki-raka)7 ki-li-anguka [CL7-FORM/SEM] ←?</td>
<td>*!</td>
</tr>
<tr>
<td>(ki-raka)7 li-anguka []</td>
<td>*!</td>
</tr>
<tr>
<td>(ki-raka)7 i-li-anguka [CL9-FORM/SEM]</td>
<td>*!</td>
</tr>
</tbody>
</table>
Such adaptations of the lexicon are a form of lexicon optimisation (cf. section 3.4). Lexical forms are changed and thereby evaluated more smoothly by the constraints. That is, *ki-raka*, ‘patch’ and the optimal candidates that agree with *ki-raka* violate fewer faithfulness constraints than *raqqa*, ‘patch’.

Other conflicts were solved by changing the constraint ranking. Swahili *rafiki*, ‘friend’, from Arabic *rafiq* should belong to class 9 on the basis of its form. That is, it does not have a first syllable that resembles one of the noun class prefixes of Swahili, and it would therefore enter the prefixless class 9. Its semantics, however, fit well into noun class 1, which also consists of other nouns referring to persons. This discrepancy in many borrowed nouns may well be the driving force towards the reranking of constraints in Swahili. Nurse and Hinnebusch (1993: 357) says: “…we may hypothesize that this sudden mass of nouns [i.e. Arabic borrowings, WK], referring to humans in genders other than class 1/2 provided a starting point; the nouns were in classes 9/10 or 5/6, but their obvious human reference required a partial recategorisation of agreement to class 1/2.” Whether or not this is the only reason for the change in the noun class agreement system, after about 1700 a new constraint ranking emerged. Nouns, independent of the formal noun class to which they belong, trigger class 1 agreement in the verb when they belong to class 1 semantically. In Tableau 7.4, therefore, Faith(NC-1sem) is ranked above other faithfulness constraints, and it filters out candidates that do not semantically agree with the semantic noun class of the subject, that is class 1.

### Tableau 7.4 Input: Standard Swahili (*rafiki*)1/9 ?-li-anguka, ‘The friend fell’

<table>
<thead>
<tr>
<th></th>
<th>Faith(NC-1sem)</th>
<th>Faith(NC-1form)</th>
<th>Faith(NC-9form)</th>
<th>Faith(NC9-sem)</th>
<th>*[NC]</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>(rafiki)1/9 li-anguka</em></td>
<td>![ ]</td>
<td>![ ]</td>
<td>![ ]</td>
<td>![ ]</td>
<td>![ ]</td>
</tr>
<tr>
<td><em>(rafiki)1/9 a-li-anguka [CL1-FORM/SEM]</em></td>
<td>![ ]</td>
<td>![ ]</td>
<td>![ ]</td>
<td>![ ]</td>
<td>![ ]</td>
</tr>
</tbody>
</table>

In this new situation nouns may remain ‘split’ with respect to their noun class. According to their semantics they may belong to noun class 1 (or 2, for plurals), while on the basis of their form they may remain in another noun class. Two Faith(NC) constraints are now ranked higher than other Faith(NC) constraints, Faith(NC1-sem) and Faith(NC2-sem). I call these two constraints together Faith(AN): “Agreement marking must be faithful to the category of animacy.”

It might be argued that instead of constraint reranking, in words like *rafiki*, as in *ki-raka*, the noun class assignment has changed. However, although *rafiki* always triggers semantic agreement in the verb, its formal noun class is still relevant elsewhere in the grammar (cf. Nurse & Hinnebusch 1993: 354).

To summarise, in older Swahili we had the order: Faith(AgrNC) >> *[Agr].

Today, some of the Faith(AgrNC) constraints are ranked higher than others, thereby forcing agreement with the semantic animate features of the noun, and not with formal features: Faith(AgrAN) >> Faith(AgrNC) >> *[Agr].
Katanga Swahili

In Katanga Swahili several changes took place. Noun classes 12 and 13, absent in Standard Swahili, were introduced into Katanga Swahili, and the agreement affixes of class 11 and 14, which had identical shape in Standard Swahili, became different again. This is represented by adding new noun class features to some nouns, and by changing the lexical content of some affixes. These developments will not be discussed. Instead, I focus on reduction in subject, object and relative agreement.

In Katanga Swahili relative agreement completely disappeared, object agreement mainly occurs with animate objects, and subject agreement still occurs, but with several conflations. Subject agreement conflated in classes 3, 4, 6, 9, 10, and sometimes in 5, 7, and 8. We can represent this change in OT as follows. Initially Standard Swahili had the following order:

\[ \text{Faith(AgrAN)} >> \text{Faith(AgrNC)} >> *[NC] // *[Sub] // *[Obj] // *[Rel]. \]

The ranking of all Faith(NC) constraints above *[Sub], *[Obj] and *[Rel] makes faithfulness constraints like Faith(Sub), Faith(Obj) and Faith(Rel) superfluous, and these are floating. In Katanga Swahili the markedness constraint *[NC] has risen above several sub-constraints of Faith(AgrNC), that is, above all Faith(RelNC) constraints, above most Faith(ObjNC) constraints, and above some Faith(SubNC) constraints. The new order in Katanga Swahili with respect to noun class expression is:

\[ \text{Faith(Sub-AN, NC1, 2, (5, 7, 8), 11-18)} // \text{Faith(Obj-AN, NC7, 8, 18)} >> *[NC] >> \text{Faith(SubNC)} // \text{Faith(ObjNC)} // \text{Faith(RelNC)}. \]

For noun classes whose corresponding faithfulness constraints are dominated by *[NC], the ordering of Faith(Sub), Faith(Obj), and Faith(Rel) with respect to *[Sub], *[Obj], and *[Rel] is relevant, because the impossibility of expressing specific noun class agreement, because of *[NC], does not logically entail that general agreement marking would be excluded. In fact, in Katanga Swahili a general subject agreement marker -i- is used for agreement with classes that are themselves not expressed, while there are no general object or relative agreement markers. This means that Faith(Sub) is ranked higher than *[Sub], but *[Obj] and *[Rel] higher than Faith(Obj) and Faith(Rel), cf. Tableau 7.5 (Schicho 1982: 223).

Tableau 7.5 I: Katanga S. maisha-cl6 ?-na-anza life cl?-PRES-begin ‘Life begins’

<table>
<thead>
<tr>
<th></th>
<th>Faith(Sub)</th>
<th>*[Sub]</th>
<th>*[NC]</th>
<th>Faith(SNC6)</th>
</tr>
</thead>
<tbody>
<tr>
<td>maisha-cl6 i-na-anza [SUBAGR]</td>
<td></td>
<td>*</td>
<td>*</td>
<td></td>
</tr>
<tr>
<td>maisha-cl6 ya-na-anza [CL6]</td>
<td></td>
<td>*</td>
<td>*</td>
<td></td>
</tr>
</tbody>
</table>
| maisha-cl6 na-anza [ ] | *! | | *

\[ ^{208} \text{In this formula NC in Faith(SubNC) means ‘all noun classes, not mentioned in the higher ranked constraint Faith(SubNC). Idem for Faith(ObjNC).} \]

\[ ^{209} \text{I call -i- a general agreement marker in Katanga Swahili, since it no longer refers to any particular class. Instead, it functions as a default subject agreement marker. That is, when *[NC] prevents specific class agreement, this non-specific class marker appears. The prefix -i- received this role probably as an extension from class 9, which is the class that already received many loans in Swahili, and which already had little specific semantic content.} \]
To prevent complete deletion of object agreement, *[Obj] must be ranked below Faith(Obj-AN, NC7, 8, 18), cf. Figure 7.4.

Faith(Sub-AN, NC1, 2, (5, 7, 8), 11-18) Faith(Obj-AN, NC7, 8, 18) Faith(Sub)

*[NC] *[Obj] *[Rel] *[Sub]

Faith(SubNC) Faith(ObjNC) Faith(ReINC) Faith(Obj) Faith(ReIN)

Figure 7.4 Dominance relations of noun class constraints in Katanga Swahili

In conclusion, in Katanga Swahili three Economy constraints have been promoted: *[Rel], *[Obj], and *[NC]. These have been promoted to a position where they dominate several, though not all, corresponding faithfulness constraints, resulting in several agreement losses.

Kenyan Pidgin Swahili

In Kenyan Pidgin Swahili, variation ranges from complete absence of agreement to expression of subject and object agreement with animate nouns. In Standard Swahili we had:


In KPS the economy constraints have become even more important than in Katanga Swahili (see above), and the only agreement is with animate nouns in subject and object position.

Faith(Sub-AN) Faith(Obj-AN)

*[Sub] *[NC] *[Obj] *[Rel]

Faith(Sub) Faith(NC) Faith(Obj) Faith(ReIN)

Figure 7.5 Dominance relations of noun class constraints in Kenyan Pidgin Swahili

For instance, in example (23) (Heine 1973: 116) the inanimate noun *fari* does not trigger subject or relative agreement in *na-kwama*.

(23) Ile fari na-kwama kwisha vunjika.
DEM car NA-be_stuck PAST be-broken
‘The car which got stuck is broken.’
Table 7.6 I: Kenyan PS fari ?-na-kwama, car ?-PRES-be stuck ‘The car is stuck’

<table>
<thead>
<tr>
<th></th>
<th>*[Rel]</th>
<th>Faith(Rel)</th>
<th>*[NC]</th>
<th>Faith(NC)</th>
<th>*[Sub]</th>
<th>Faith(Sub)</th>
</tr>
</thead>
<tbody>
<tr>
<td>fari i-na-kwama [SUBAGR]</td>
<td></td>
<td>*</td>
<td></td>
<td>*</td>
<td></td>
<td>*</td>
</tr>
<tr>
<td>fari i-na-kwama [CL9]</td>
<td></td>
<td>*</td>
<td>*</td>
<td>*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>fari na-kwama</td>
<td></td>
<td>*</td>
<td></td>
<td>*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>fari na-yo-kwama [RELAGR]</td>
<td></td>
<td>*</td>
<td></td>
<td>*</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The only faithfulness constraints that still dominate markedness constraints in more elaborate forms of Pidgin Kenyan Swahili are Faith(SubAN) and Faith(ObjAN), cf. Tableau 7.7 (Scotton 1979: 120).

Tableau 7.7 I: ‘Elaborate’ KPS ?-na-?-ambia, . AN-SUB, 1ST PL OBJ tell ‘He tells us’

<table>
<thead>
<tr>
<th></th>
<th>Faith(SubAN)</th>
<th>Faith(ObjAN)</th>
<th>*[NC]</th>
</tr>
</thead>
<tbody>
<tr>
<td>a-na-tu-ambia, [AN, 1PL]</td>
<td></td>
<td></td>
<td>**</td>
</tr>
<tr>
<td>a-na-ambia, [AN]</td>
<td></td>
<td>*</td>
<td></td>
</tr>
<tr>
<td>na-tu-ambia, [1PL]</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>na-ambia, []</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Tableau 7.8 Input: ‘Basic’ KPS (mimi) ?-?-ona (yeye), 1SG, CL OBJ ‘I see him’

<table>
<thead>
<tr>
<th></th>
<th>*[NC]</th>
<th>Faith(SubAN)</th>
<th>Faith(ObjAN)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ni-mw-ona [1SG, CL]</td>
<td>**!</td>
<td></td>
<td></td>
</tr>
<tr>
<td>mw-ona [CL]</td>
<td>*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>na-ona [1SG]</td>
<td>*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ona []</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

In the more elaborate variety of Kenyan Pidgin Swahili we had:

Faith(AN) >> *[NC] >> Faith(NC).

In the most basilectal variety, all markedness constraints dominate inflectional faithfulness constraints:

*[NC] >> Faith(AN) >> Faith(NC)
*[Obj] >> Faith(Obj)
*[Rel] >> Faith(Rel)
*[Sub] >> Faith(Sub)

7.6.3 Changes in the tensed stem

As discussed in 7.2.1, there are about 30 different tenses of Swahili, which can be considered as constructed by combining several TMA notions, negation and mood. The expression of these tenses conflicts with the ideal of Transparency, and I analysed the Swahili verb with the help of fusion, fission, and allomorphy. In this section, I discuss one aspect of the tenses, namely what the change in expression of negation in the suffix
of the tensed stem from Standard Swahili to Katanga Swahili might look like in OT. I do not discuss other aspects, like the replacement of TMA markers by auxiliaries, since this is straightforwardly represented by promotion of *[TMA] constraints. With respect to the change in the suffix, we need the following constraints:

**Max(Cat):** “A candidate with an affix that expresses features a and b is preferred above a candidate expressing only b.”

That is, a specific feature specification is preferred above a more general specification. When this constraint is ranked above other faithfulness constraints, and when the lexicon contains affixes with complex specification, Max(Cat) forces deviations from ideal Transparency, like fusion and fission. In Standard Swahili negation is expressed in three places in the verb. This conflicts with Dep(Neg), which states:

**Dep(Neg):** “Each instance of ‘Neg’ borne by the phonological form of the Output is represented in a separate category in the underlying property set of the Input.”

That is, multiple instances of ‘Neg’, are only allowed when there is also more than one instance of ‘Neg’ in the underlying property set. Other constraints that play a role in the change in the tensed stem are:

**LEX:** “A complex sign is well-formed if and only if it consists only of morphemes.”

*[Neg]: “Do not express the category of Negation.”

With the help of these constraints we describe the changes in the Swahili negative present tense. In Standard Swahili the following form is found: *ha-wa-imb-i*, NEG-CLASS2-SG-NEG, ‘they do not sing’, cf. Tableau 7.9.

| Tableau 7.9 Input: Standard Swahili ha-wa-imb-? sing + PRES + IND + 2 + NEG |
|---------------------------------|----------------|----------------|----------------|
| ha-wa-ø-imb-e                   | LEX            | Max(Cat)       | Dep(Neg)       | *[Neg]          |
| NEG-2-PRES-sing-SUBJ/IND        | *!             |                |                |                |
| ha-wa-ø-imb-i                   |                | *              |                | **             |
| NEG-2-PRES-sing-NEG.PRES.IND    |                |                |                |                |
| ha-wa-ø-imba-ø                  | *!             |                |                |                |
| NEG-2-PRES-sing-IND             |                |                |                |                |

The first candidates, *ha-wa-ø-imb-e*, NEG-2-PRES-sing-SUBJ/IND, express negation only once, and therefore do not violate Dep(Neg). However, they crash because the suffix, *-e*, violates Max(Cat). Another affix is available with more corresponding features, that is, the suffix *-i*. The second candidate is the optimal candidate. Although it expresses negation twice, violating both *[Neg] and Dep(Neg), it does not violate high-ranking LEX and Max(Cat). The last candidate, *ha-wa-ø-imba-ø* does not express the indicative directly, but by default. That is, having no mood suffix implies indicative mood. By lack of other representational devices, I represent such paradigmatically defined categories by zero-affixes. Like the first candidate, its suffix expresses too little, in comparison with the second candidate.210

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210 In a different approach forms ending on *-i*, instead of *-e* with class 1 participants can be analysed as preventing homonymy with negative imperatives, because these would both have
The analysis of the \textit{\textit{i}-}suffix in Swahili inflection has always created problems. Does this suffix express only negation subcategorised by present tense and indicative mood, \textit{i NEG/PRES, IND}, or does it express present tense and indicative mood as well, \textit{i NEG, PRES, IND}? In the candidate set I suggest that it expresses mood and tense as well. When assuming both a zero-affix expressing indicative in \textit{ha-wa-\textit{o}-imba-\textit{o}} and \textit{i} expressing only \textit{NEG/PRES, IND}, we would need an extra constraint (like Max(High), cf. section 3.3.2), that explains the choice of \textit{i, NEG} instead of \textit{\textit{o}, IND}, to account for the winning of \textit{ha-wa-a-imbi}.

There are many more candidates. First of all, there are negation tenses with -\textit{si-}. However, these would violate LEX, since they can only occur in non-indicative moods. Furthermore, other TMA affixes could be proposed, e.g. the \textit{\textit{na}-}prefix. Again, this prefix would violate LEX, since it is lexically specified that it may not occur in the negative. We meet a similar problem here as in the discussion of the Najdi Arabic loss of infixal voice distinctions. That is, we could put all information into the lexicon, by subcategorising each affix for exactly the contexts where it occurs. All constraint violations would be violations of LEX. For similar reasons as in Najdi Arabic I prefer to explain such patterns with the help of constraint ordering. Therefore, the first candidate crashes, because it violates Max(Cat), and not because \textit{ha-wa-\textit{o}} is subcategorised for the \textit{i}-suffix. That would also be implausible, since we cannot say that either \textit{ha} or \textit{\textit{o}} is subcategorised for this suffix, and we would have to assume that it is their combination that subcategorises. Instead, I propose that \textit{ha-wa-\textit{o}-imba-\textit{o}}, \textit{NEG-2-PRES-sing-IND}, crashes because it does not make maximal use of its affixes, as expressed by Max(Cat).

\textbf{Katanga Swahili}

In Katanga Swahili, the suffix \textit{i}, \textit{NEG, PRES, IND} no longer exists. This is partially caused by rules of vowel harmony that obscured the relation between the meaning of the suffix and its expression. That is, \textit{i} and \textit{\textit{e}} alternated not only because of semantic distinctions but also because of phonological conditions. I will not expand upon these phonological constraints, but only look at the end result. In Katanga Swahili the final suffix was reanalysed, and the \textit{i/\textit{e}} alternation was analysed as phonological in nature.

Since \textit{i} was reanalysed as an allophone of \textit{\textit{e}}, \textit{hawaimbi} changed into underlying \textit{hawaimbe}, and not \textit{hawaimba}, which we would expect when only removing \textit{hawaimbi} from the candidate set. This can be accounted for when we change the content of the \textit{\textit{e}-}suffix as well, absorbing the earlier meaning of \textit{-\textit{i-}}. Then the \textit{\textit{e}-}suffix does not only mean [+subjunctive] in Katanga, but \textit{NEG-PRES,IND/SUBJ}. Since the \textit{\textit{e}-}suffix today is also sometimes used in the negative future and past, its content may be only \textit{NEG,IND/SUBJ}. To account for the winning of \textit{hawaimbe}, Max(Cat) is still necessary as a high-ranked constraint; otherwise negation would not be expressed twice, cf. Tableau 7.10.
Tableau 7.10 Input: Katanga Swahili  

<table>
<thead>
<tr>
<th></th>
<th>LEX</th>
<th>Max(Cat)</th>
<th>Dep(Neg)</th>
<th>*[Neg]</th>
</tr>
</thead>
<tbody>
<tr>
<td>ha-wa-ø-imba-ø NEG-2-PRES-sing-IND</td>
<td>*!</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ha-wa-ø-imb-e NEG-2-PRES-sing-NEG.(PRES)IND</td>
<td>*</td>
<td>*</td>
<td>**</td>
<td></td>
</tr>
<tr>
<td>ha-wa-ø-imb-i NEG-2-PRES-sing-NEG.PRES.IND</td>
<td>*!</td>
<td>*</td>
<td>**</td>
<td></td>
</tr>
</tbody>
</table>

In Tableau 7.10 the constraint ranking has remained the same, and only the lexical content of the i/e-suffix has changed.

We can also represent the change from *hawaimbi to hawaimbe by assuming that negation is part of the irrealis, and that the realis is the indicative affirmative. In such a representation, the e/i-suffix would only mean IRREALIS, PRES. It no longer needs to be specified for negation, but only for the irrealis mood that comprises all the instances of e/i. As a consequence, *ha-wa-ø-imba-ø crashes because it has realis mood while a negative tense needs an irrealis. In addition, Max(Cat) is no longer needed since *ha-wa-ø-imb-e is the only candidate that fits LEX. As a result, the Max(Cat) constraint becomes floating, as in Tableau 7.11.

Tableau 7.11 Input: Katanga S.  

<table>
<thead>
<tr>
<th></th>
<th>LEX</th>
<th>Max(Cat)</th>
<th>Dep(Neg)</th>
<th>*[Neg]</th>
</tr>
</thead>
<tbody>
<tr>
<td>ha-wa-ø-imba-ø NEG-2-PRES-sing-REALIS</td>
<td>*?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ha-wa-ø-imb-e NEG-2-PRES-sing-IRREALIS</td>
<td>*?</td>
<td>*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ha-wa-ø-imb-i NEG-2-PRES-sing-IRREALIS.PRES</td>
<td>*!</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

There is another development in the expression of negation in Katanga Swahili, namely, that Katanga Swahili makes more use of negative auxiliary verbs than Standard Swahili. This can be represented by a high-ranking *[Neg] constraint. However, we do not know the exact conditions under which morphological negation is avoided, or whether it is conditioned by grammatical or stylistic factors.

*Kenyan Pidgin Swahili*

Non-basilectal KPS (cf. section 7.4), behaves like Katanga Swahili. Irrespective of how we analyse the i/e-suffix, in basilectal KPS the markedness constraints have been promoted above all faithfulness constraints including the Max(Cat) constraint, cf. Tableau 7.12.

Tableau 7.12 Input: KPS  

<table>
<thead>
<tr>
<th></th>
<th>*[Neg]</th>
<th>Max(Cat)</th>
<th>Dep(Neg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>hapa wao imba NEG 2 SING</td>
<td>*!</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ha-wa-ø-imb-e NEG-2-PRES-sing-IRREALIS</td>
<td>*!</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ha-wa-ø-imba-ø NEG-2-PRES-sing-REALIS</td>
<td>*!</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
In conclusion, the changes in the inflectional suffix slot in Katanga Swahili are only related to constraint reranking under one specific analysis of the \( i/e \)-suffix. In an other analysis, the change is only lexical. Only in Kenyan Pidgin Swahili there is a clear reranking of constraints.

### 7.6.4 Summary and conclusion

Noun class agreement in older Swahili presented no problems to EVAL. The lexicon was optimal, in the sense that there were lexical candidates that did not violate any relevant noun class faithfulness constraint. These lexical candidates complied with both semantic noun class faithfulness constraints and formal noun class faithfulness constraints, which were, in fact mutually unordered, since there were no lexical candidates that could be decisive for their ranking.

In Swahili after about 1700 this situation changed. Many Arabic nouns were borrowed, and could not be assigned to one particular noun class on the basis of their semantic and formal features. This conflict was resolved in two ways. The form of some nouns was modified in order to belong to only one noun class again. That is, the lexicon was optimised. Other nouns remained the same, but the order of faithfulness constraints that determined what noun class features were most important became more rigid. Semantic constraints were favoured above formal constraints in conflicts between animate nouns that on the basis of their semantics belonged to class 1, but on the basis of their form to another class.

Such a semantic classification appears to be favoured by second language learners. According to Karmiloff-Smith (1979) acquisition of phonologically defined noun classification in French is easier for children while semantically based classification is easier for adults (cf. also Berman 1985: 319 for Hebrew evidence). However, the promotion of this semantic classification does not immediately imply an adaptation of Swahili to second language learners’ demands. In Standard Swahili the semantic classification is still accompanied by the earlier formal classification system, and this means that the noun class system has only been expanded, not simplified. In Katanga and especially in Kenyan Pidgin Swahili, however, the formal noun class faithfulness constraints have been demoted, and the semantic classification remains as an easier replacement for the Standard Swahili formal agreement system. This reduction did not take place by a conflict between semantic and formal constraints, but in the aftermath of the rise of markedness constraints. When *\([NC]\) had been promoted, Faith(NC-form) constraints were no longer complied with.

In conclusion there are two large movements in Swahili noun class agreement: the replacement of a formal by a semantic noun class system, and the loss of noun class agreement. While in the first instance the promotion of the semantic noun class constraints was only an extension of the class system, later, when the whole system began to collapse in Katanga and especially KPS, it meant a simplification. This is comparable to what happened in Najdi Arabic varieties, where phonological constraints were promoted. Initially these constraints only added to the complexities of voice and aspect expression, but when the phonological constraints became the only decisive factor influencing the Output, the initial increase of opacity led to a sharp decrease of complexity. A similar path of change is also apparent in Scandinavian (cf. section 5.6).
The changes in Swahili verbal suffixal inflection provide more problems for an analysis in OT. It is difficult to decide whether the i-suffix in Swahili expresses a single category with a conditioning factor, or whether it remains a fused category. Moreover, we do not really know how to analyse the semantic content of this suffix. This would not be a problem, were it not that two analyses lead to two different constraint orders. This is problematic for a comparison between Standard and Katanga Swahili, while the comparison with Kenyan Pidgin Swahili shows the unequivocal rising of markedness constraints that outvotes the effect of the order of the faithfulness constraints. A final observation we made about negation in Katanga Swahili was that it is frequently expressed with auxiliaries. Unfortunately, since we do not know the conditions of auxiliary negation, we cannot develop this further.

When we compare the changes in Swahili with the predictions of Table 3.2, we find the following: 1) the lexicon is optimised in all Swahili varieties; 2) Max(Cat) has become less important in Katanga Swahili; 3) filter constraints, especially those dealing with agreement, have been promoted in the young Swahili varieties, and 4) Max(Order) is also ranked higher in Katanga and especially in KPS, though this may be a side-effect of the rising of filter constraints. Only the interaction of phonological constraints and morphological constraints is not apparent from the changes in Swahili which are studied here.
8. Conclusion
8.1 Discussion

The case studies in Chapters 4 to 7 have made it clear that with respect to the Economy Principle languages behave as predicted when the communities in which they are spoken change from Type 1 to Type 2: the number of categories and category combinations indeed decreases correspondingly in these communities. For instance, when putting Arabic varieties in a row, the number of categories diminishes from Classical, Najdi, and Moroccan to Nubi Arabic. In addition, the order of disappearance of these categories conforms to the predictions of the feature hierarchy (cf. 2.1.1 and 3.3.2): subject agreement disappeared more rapidly than tense in Scandinavian; in Katanga Swahili and Ecuadorian Quechua especially object agreement is subject to reduction. Furthermore, categories that are predicted to be most stable indeed remained longest in the grammar, and even returned in another guise: Norwegian tense remained an inflectional category in spite of all phonological pressure, and the Arabic category of voice which had disappeared in its infixal form returned as a prefix in many Arabic varieties. However, against expectations mood has disappeared surprisingly rapidly in all Scandinavian varieties, and it has even been reduced in varieties where person and number are fully intact.

The loss of morpho-syntactic categories entailed a stricter obedience to the Transparency Principle. When there are few categories left, the possibilities of violating Transparency automatically diminish. There are, however, also increases in Transparency that are independent from Economy: in Faroese and Norwegian there is less allomorphy - fewer strong verbs - than in Old Norse, and in Arabic the expression of the stem became more uniform. The Isomorphy Principle appeared not to play a large role in the cases under study. However, in Ecuadorian Quechua inconsistent affix orderings lost out.

One prediction with respect to Transparency is not completely fulfilled: allomorphy has been reduced in most Type 2 morphologies, but to a smaller extent than expected. Norwegian has approximately the same number of - allomorphic - strong and weak verbs as Faroese, although in another respect Faroese is closer to a Type 1 morphology than Norwegian. The number of inflectional allomorphic affixes in Bolivian and Argentinean Quechua has increased, while in other aspects these varieties are closer to Type 2 languages. Finally, in Katanga Swahili the number of noun classes has increased, although the corresponding noun class agreement system has shrunk.

This retention of allomorphy can be explained in several ways. With respect to Scandinavian, the people involved in changing the Norwegian speech community into a Type 2 community were all speaking Germanic languages, in all of which there are strong verbs. Perhaps this stimulated the high retention of strong verbs in Norwegian. In addition, most other simplification took place gradually in domains where phonology had already obscured distinctions. The transition from strong to weak verbs, however, needs more salient discrete steps. Evidence for this is that strong verbs of which the conjugation patterns were more similar to the weak class conjugation patterns have become weak relatively often (cf. section 5.5.2.2). Perhaps there is also a more general reason for the retention of allomorphy. In OT terms we could characterise fusion, fission and the Economy Principle as dealing with the relation between Input and Output. This relation is computed every time a new sentence is generated. Allomorphy, however, is a
Conclusion

matter of the lexicon: the preservation of allomorphy depends on the ability with which lexical items can be retrieved from the lexicon and does not involve computation. Possibly the lexicon is a robust component of the language system. For second language learners it may be easier to store items in the lexicon than to compute complex form-meaning relations for each utterance. This is in line with work by Baaijen et al. (1997) that shows that complete lexical storage instead of computation is quite prevalent in language processing, at least by native speakers. If so, then only in circumstances in which even lexical access to the target language is severely impaired, allomorphy would decrease. While in the language groups discussed here, we find that in moderate Type 2 circumstances, like in Norwegian or Bolivian Quechua, allomorphy is only partly reduced, in more extreme Type 2 circumstances like in Nubi Arabic and Kenyan Pidgin Swahili, we find, indeed, that allomorphy has sharply decreased.

Carstairs-McCarthy (1999: 107ff.) explains the retention of allomorphy, and particularly of conjugation classes, in a different way. His observation is similar to mine (1999: 113): “But an ordinary (non-pidgin) language may retain arbitrary inflection-class differences for millennia, even while seemingly more useful aspects of grammar, such as the marking of case in nouns or person and number in verbs, disappear.” Carstairs-McCarthy (1999: 121) solves the problem by suggesting that conjugation classes have a ‘meaning’. Although this ‘meaning’ may be intra-linguistic, it would not be qualitatively different from other kinds of meaning:

“...if we assume that affixal “meanings” are subject to the same acquisitional constraints as word meanings are, then the absence of blurring in the inflection-class systems of actual languages such as German emerges as neither accidental nor mysterious, but is just what we expect.”

Indeed, if we do not take the differences between morphological class membership ‘meaning’ and ordinary meanings like ‘tense’, ‘aspect’ or ‘person’ into account, then we have indeed ‘explained’ why allomorphic classes are persistent. However, we have also lost useful distinctions between morphological allomorphy, phonological allomorphy, and ‘real’ inflectional meaning. Although we can explain the persistence of classes with this redefinition, we can no longer explain the path and direction of change in e.g. Norwegian (cf. section 5.5.2.2) or Turkana (cf. Dimmendaal 1987), where morphological allomorphy tends to be replaced by phonological allomorphy or by ‘real’ inflectional meaning. Last but not least, there is quite a bit of empirical evidence (cf. section 2.5.2.2) that for L1 acquisition morphological classes are more difficult than phonologically conditioned allomorphy, which is in turn more difficult than the acquisition of inflectional meanings, like tense or person. This implies, contra Carstairs-McCarthy, that not all meanings are equally easily to acquire, which leaves us again with the original question unanswered.

8.2 Towards a typology of simplification paths

The advantage of only examining closely related languages in this study was that the differences between the varieties could be compared and related to a common ancestor. In this section I make an attempt to depict the various simplification paths in a common

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211 In 3.3.3.3 I suggest that allomorphy and homonymy can also be described with Output-Output-Correspondence constraints. Such constraints may, however, also have a different kind of status in computation than Input-Output-Correspondence.
Towards a typology of simplification paths

conceptual space in order to compare these paths. This forces me to quantify over criteria in seemingly arbitrary ways. Therefore, the remarks in this section are rather tentative and the procedure and observations here should be regarded with caution. The justification of this procedure is, however, that it results in some recurring patterns.

I lay the social and cultural factors in the various speech communities along a common yard-stick, rating them on a scale from 1 to 10. The ancestor community in each language group rates, by definition, as 10. These ancestor communities are not mutually comparable; for instance, the sociolinguistic situation in the Quechua II community could well be more like a Type 1 community than the one in Old Norse. However, this does not prevent comparison, since I compare patterns of simplification. The most extreme form of Type 2 community counts as 1. I assess the ratings of the speech communities on the basis of the descriptions of each variety in Chapters 4 to 7, cf. Table 8.1, and I use the following guidelines.

Speech communities in which there has been a more or less unbroken transmission from one generation to the next are rated above 5. When a large majority of speakers have an ancestor in the past who was a second language learner, the community scores below 5. The higher the number of these second language learners and the more these second language learners came to the community at the same time, the lower the score. In other words, the more radical and abrupt the break in transmission, the lower the score. When such a group of language learners is absorbed in a tight community, and when the language in question has a high status among the learners, the community has a higher rating. Communities with an unbroken tradition of language transmission score in the lower part of the upper half of the scale when there has been extensive language contact, especially when there have been many second language learners. When the community has had a history of stability and homogeneity, and when the language in question has been used as a social and cultural symbol, I assign a higher rating.

I also rate the various verbal inflections on a scale from 1 to 10, with discrete steps of 0.5. The extent to which languages have followed the tendencies towards simplification determines their ranking. Within each language group I take into account how many categories and category combinations could have been lost, and how many actually have been lost, approaching loss of accidental homonymy, fusion and allomorphy likewise. On the basis of the descriptions of the varieties in Chapters 4 to 7, I come to the measures as in Table 8.1.

The sample correlation between the community and the morphology ratings in Table 8.1 is 0.685 (Pearson correlation coefficient).212 We note that this number should be regarded with extreme caution, because the number of observations is small and we cannot assume that they are independent. Nevertheless, it does support our hypothesis that the level of complexity is related to the type of speech community. There are no anomalies of complex morphology under severe Type 2 conditions, nor radical simplifications under Type 1 conditions.

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212 In this value Classical Arabic, Old Norse, Quechua II, and Swahili are not taken into account, because these have equal values for community and morphology level by definition.
Table 8.1 Languages and speech communities on a common metric

<table>
<thead>
<tr>
<th>Community</th>
<th>Morphology</th>
</tr>
</thead>
<tbody>
<tr>
<td>Classical Arabic</td>
<td>10</td>
</tr>
<tr>
<td>Najdi Arabic</td>
<td>10</td>
</tr>
<tr>
<td>Moroccan Arabic</td>
<td>7</td>
</tr>
<tr>
<td>Nubi Arabic</td>
<td>2</td>
</tr>
<tr>
<td>Old Norse</td>
<td>10</td>
</tr>
<tr>
<td>Icelandic</td>
<td>9.5</td>
</tr>
<tr>
<td>Faroese</td>
<td>7.5</td>
</tr>
<tr>
<td>Norwegian</td>
<td>5.5</td>
</tr>
<tr>
<td>QuechuaII</td>
<td>10</td>
</tr>
<tr>
<td>Cuzco Quechua</td>
<td>7</td>
</tr>
<tr>
<td>Bolivian Quechua</td>
<td>5</td>
</tr>
<tr>
<td>Argentinean Quechua</td>
<td>4</td>
</tr>
<tr>
<td>Ecuadorian Quechua</td>
<td>3.5</td>
</tr>
<tr>
<td>Swahili</td>
<td>10</td>
</tr>
<tr>
<td>Standard Swahili</td>
<td>8</td>
</tr>
<tr>
<td>Katanga Swahili</td>
<td>3</td>
</tr>
<tr>
<td>Kenyan Pidgin Swahili</td>
<td>1</td>
</tr>
</tbody>
</table>

The tendency towards simplification can be modelled in Optimality Theory with the help of two interacting mechanisms: lexicon optimisation and constraint reranking (cf. section 3.4). In 18th century Swahili and in early Southern Quechua the lexicon is optimised before constraints are reranked (cf. 6.6.3 and 7.6.2), while in most other cases lexicon optimisation took place after constraint reranking. The effect of this latter kind of lexicon optimisation is that the forms that have become disallowed because of constraint reranking, are non-optimal candidates in the new situation, simply because they are not in the lexicon. The paradoxical result is that the constraints that had been promoted and that gave rise to lexicon optimisation are no longer necessarily highly ranked, and become floating. Because of their floating status, a language learner needs only little evidence to demote them in the constraint hierarchy. Such a return to a lower position of a floating constraint is mainly found in cases where phonological changes are involved. For example, in some dialects of Najdi Arabic phonological markedness constraints were promoted. They made the relationship between meaning and form of the category of voice opaque (cf. section 4.7.2.2). As a result these forms were reinterpreted as not expressing voice, thereby promoting *[Voice] constraints at the expense of the Faith(Voice) constraint. When the lexical means that expressed voice were removed from the lexicon after optimisation, *[Voice] became floating. However, it was soon set in a low position again in those varieties where voice is expressed with other -prefixal instead of infixal- devices. Some losses of categories, triggered by earlier phonological changes as in Najdi Arabic, can be conceived as accidental side-effects of phonological changes. Such losses seem to be more often repaired - that is, floating constraints are reset in low
position - than losses that take place without a facilitating phonological context (see below), like those in Quechua and Swahili.

To further examine different patterns in the language groups I have plotted the complexity scores and the community scores of each variety (cf. Table 8.1) in the language groups of, respectively, Arabic, Scandinavian, Quechua, and Swahili. Cf. the following diagrams.
Conclusion

![Graph showing the comparison of Community and Complexity across different languages and locations.

- Old Norse
- Icelandic
- Faroese
- Norwegian

- Quechua
- Cuzco
- Bolivia
- Argentina
- Ecuador

Legend:
- Blue line: Community
- Pink line: Complexity

The graphs illustrate the decline in community and complexity across the mentioned languages and locations, with Old Norse showing the highest complexity and Community values, and Norwegian showing the lowest values in both categories. The communities and complexities for Quechua, Cuzco, Bolivia, Argentina, and Ecuador also follow a similar trend, with Quechua and Cuzco having the highest and Ecuador having the lowest.
Towards a typology of simplification paths

Figure 8.1 Speech communities and inflectional complexity

The differences between these patterns of change can be conceived from five related view-points, to which I now turn.

1. When we compare Quechua and Swahili with Arabic and Scandinavian, we find that in the latter two, especially in Scandinavian, the community-line runs above the complexity-line (see Figure 8.1). This means that these two have become relatively simple in relatively Type I like conditions. Reduction in Arabic and Scandinavian can be said to be more rapid than in Swahili and Quechua. That is, in Arabic and Scandinavian only slight distortion of the conditions of use is needed to bring the whole system in motion, while in Swahili and Quechua simplification is triggered only when there are extensive disturbances in language transmission. We could also rephrase this by saying that the absolute tendency towards simplification is higher in Scandinavian-like morphologies than in Quechua-like morphologies; in each Scandinavian and Arabic variety the extent of simplification is higher than in Quechua and Swahili varieties that are correspondingly ranked on the community metric.

2. The two ways of simplification, in Scandinavian and Arabic versus Quechua and Swahili are related to the kinds of morphological structure in the ancestor languages. In Arabic and Scandinavian losses of morphological categories are mainly found in contexts where earlier phonological changes had already created an opaque situation, with lots of allomorphy, fusion and homonymy. Small modifications of non-transparent affixes may lead in such cases to considerable loss of inflection. In Swahili and Quechua, however, the original structure is quite transparent and categories are reduced without previous phonological erosion. Instead, whole affixes
have disappeared at once, but do not necessarily pull down larger parts of the paradigm. We may call these two kinds of simplification **plain morphological simplification**, without a specific phonological trigger, as in Ecuadorian Quechua and Katanga Swahili, and **indirect, or phonologically induced** simplification, where simplification starts at the ‘weak spots’, as in Faroese and Najdi Arabic.

The fact that simplification in Scandinavian and Arabic starts at the weak spots does not mean that all losses are related to phonological changes. Some changes in Icelandic took place independently from any relevant phonological change. In Faroese categories that are marked high on the feature hierarchy (cf. section 2.1.1 and 3.3.2) are lost first, irrespective of whether this is in line with phonological changes. Moreover, in Norwegian, cf. section 5.5.2.1, the category of tense has resisted deletion in cases where strictly phonological rules would have erased it. Nevertheless, in many cases phonological changes set the scene on which morphological changes can then play their role (cf. 5.6 and 5.7).

3. Assuming that languages like Icelandic and Najdi Arabic have ancestors that had a more transparent morphology, they must also have known a period in which opaqueness - that is, lack of Transparency - increased. Indeed, in the history from Classical to Najdi and finally to Mesopotamian Arabic phonological changes had initially led to more opaqueness locally.213 Only when the amount of complexity was found to be too much for children, who reinterpreted the opaque meaning-form relations into more straightforward and more Economic relations, did Arabic change towards a more Transparent morphology. In Scandinavian and other Germanic languages a similar path is found. Old Norse has a more opaque and fusional inflection than earlier Germanic (cf. Werner 1984). Later developments in Scandinavian led to a radical restructuring of Scandinavian inflection, and to a low level of morphological complexity in modern varieties like Norwegian. This rise and fall of the extent of opaqueness is not an autonomous development, but embedded in social changes. I have shown that in both Arabic and Scandinavian the relative pace of this development lies in the social context of language use. Although Arabic and Scandinavian changes each go in a specific direction, among the various Scandinavian and Arabic varieties there are great differences with respect to the pace. In Arabic and Scandinavian most initial complication is induced by earlier phonological change. Increase of opaqueness may, however, also occur as a result of morphological changes. For example, in 18th century Swahili initial - morphological - complication took place as a result of the borrowing of nouns from Arabic, and in Southern Quechua regularisation tendencies as in Argentinean Quechua are reactions on previous morphological reanalyses (see 6.3.3.2 and 7.6.2). Therefore, the distinction between simplification after **initial complication** and **direct simplification** is not similar to the distinction under II.

The initial changes towards more complexity because of less transparency took place in Type 1 societies. In modern Scandinavian, which I have characterised as a Type 2 community, however, changes that distort Transparency have also taken place: in 5.7 I discussed, for instance, the promotion of a constraint demanding vowel reduction in

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213 The reason we do not call Najdi Arabic a more complex language than Classical Arabic is that the increasing phonological opaqueness is counterbalanced by a somewhat higher level of Economy in Najdi Arabic.
unstressed syllables. At first sight this does not corroborate my hypothesis that in language contact situations speech is more hearer-directed. However, the clouding of categories like person and number agreement can be compensated by expression of the categories by other means, e.g. by pronouns.

4. We may call morphologies like those of Scandinavian and Arabic unstable; when conditions of use change slightly, this has far-reaching consequences for unstable morphologies. Arabic morphological structure appears to be more stable than Scandinavian structure. Perhaps this is related to the fact that Arabic word structure is templatic (cf. section 4.2.2.4). Maybe templatic structure is learned at a very young age and therefore more resistant to change. Indeed, only in extreme Type 2 circumstances template structure disappears, as in Nubi. This is reminiscent of the discussion in 8.1 on the retention of strong verbs in Scandinavian.

Another form of instability is inconsistency. In early Ecuadorian Quechua parts of object agreement were lost. Today, the remaining object agreement does not fit with the general pattern of Ecuadorian inflection anymore. That is, when in an early stage under clear social conditions of use complex object agreement was removed from morphology, later the transparent object agreement also tended to be reduced, although the conditions did not trigger this directly anymore (cf. section 6.6.2).

5. In unstable morphologies we also expect so-called autonomous changes to occur. These are changes that take place independently of the conditions of use of a language, which are in contrast with external changes that are triggered by the conditions of language use. We expect unstable morphologies to change more easily without social triggers. Simplification can be a result of either of these kind of changes. The loss of categories and affixes in Ecuadorian Quechua is an example of external change. The exceptional early conditions of use of Quechua in Ecuador correspond with changes in Ecuadorian Quechua that are exceptional for Quechua. The loss of the dual in Arabic (cf. section 4.6) is a prime example of autonomous change. There is no clear factor in the conditions of use that could be held responsible for this change in all Arabic varieties. Strictly spoken, purely autonomous change is impossible; the causes of change must always lie outside language itself since language does not have any purpose in itself, let alone any built-in mechanism that sets change in motion (cf. Dorian 1993). However, conceiving the loss of the dual in the verb in a range of dispersed Arabic varieties, justifies the use of the concept of autonomous change.

In Figure 8.2 I show the five dimensions, and my intuitive judgement, based on the results of this study, where to order the four language groups on these dimensions.
So far I have suggested that variation in the general pattern of simplification can be connected to the original morphological structure of the ancestor language. A factor I did not focus on in this study is, on the level of community, substrate influence, or, on the individual level, interference and transfer. For instance, the relatively low degree of simplification in Bolivian Quechua in comparison with Ecuadorian Quechua is probably also due to an Aymara substrate, and the retention of large parts of the noun class system in Katanga Swahili has probably been reinforced by Bantu substrate languages.

Figure 8.1 does not reveal all patterns of change. In fact, it hides the asymmetry between simplicity and complexity. That is, there is only one extreme for simple morphologies. In an utmost simple morphology there are no morpho-syntactic categories morphologically expressed and there can be therefore no deviations from Transparency or Isomorphy. The simplification paths, argued above as being quite diverse, converge therefore towards a common point. We could call this abstract point of convergence a ‘creole prototype’, following McWhorter (2001). Stress should be laid however on prototype, and not on creole, since perhaps there is no actual language that conforms to this type. In contrast, the other end of the scale has fewer similarities; complexity is a more heterogenous concept than simplicity. Complexity may lie either in a high number of morpho-syntactic categories, in opaque form-meaning relations, in variable affix orders, or in any combination of these.

I have argued that the presence of several social factors is likely to lead to simplification in inflectional morphology. This does not imply, conversely, that for each language of which the inflectional morphology is poor, there must have been previous sociolinguistic circumstances conducive to this. Many languages, for instance in South-East Asia, like Lahu (Matisoff 1973), have little inflectional morphology, but are not shaped in a history of intense language contact. Simplification of complex morphology may be unrelated to

<table>
<thead>
<tr>
<th>Rapid reduction</th>
<th>Slow reduction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sc</td>
<td>Ar</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Phonologically induced</th>
<th>Plain morphological</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sc</td>
<td>Ar</td>
</tr>
</tbody>
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<table>
<thead>
<tr>
<th>Initial complication</th>
<th>Direct simplification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ar</td>
<td>Sc</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Instability</th>
<th>Stability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sc</td>
<td>Ar</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Autonomous change</th>
<th>External change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sc</td>
<td>Ar</td>
</tr>
</tbody>
</table>

Sc: Scandinavian, Ar: Arabic, Sw: Swahili, Qu: Quechua.

**Figure 8.2 Five factors in patterns of simplification**
Complexity and globalisation

social factors. In addition, the absence of complex inflectional morphology does not exclude complexities on another linguistic level. If so, however, this would still not imply that there is a trade-off relation between levels. The levels may also be only independent. Moreover, even when there would be a correlation between complexity on various linguistic levels, a small number of trade-off counterexamples would not rule out such a correlation.

I have studied only four cases here. Future research should involve extension of the database, both in its width and its depth. That is to say, more comparable cases would make the relations suggested here more plausible, while examinations of the social factors in more depth in each case would give the findings a more rigid underpinning. In addition, the main division of fusional versus agglutinative morphology may turn out to be more articulated. For instance, prefixal versus suffixal morphology may be a factor of importance in simplification paths as well. Another interesting domain for further study would be the possible relation between morphological complexity as studied here, and phonological or syntactic complexity.

8.3 Complexity and globalisation
The kind of simplification process studied here is related to several necessary social conditions: 1) a language must spread rapidly outside its initial sphere of use to a domain where it is predominantly used in its communicative function by second language learners, 2) to be simplified it must remain in use for a longer period, and be learned by a next generation, 3) contact between the source language and the variety spoken in the new domain must be not too extensive, otherwise simplifications may be levelled out, especially when the source language is dominant. Condition 1) is fulfilled in all four groups in some varieties, although in Scandinavian there is no real geographical diffusion. In order to expand, a language must be used as a vehicle of inter-group communication. This happened in e.g. Ecuador, Kenya and Morocco. Trade is a context in which a language may be dispersed as a communication tool. However, in order to put a mark on speech varieties of next generations, that is, condition 2), trade alone is seldom enough. Support from above, e.g. from a religious organisation, or a political empire is favourable to expansion and consolidation of a language. We saw such support, for instance, in the Arab/Islamic Empire, the Inca Empire, and the Catholic church in the Andes, and other churches in Africa. Condition 3) states that the ties between the original speech community and the new community where the language is in the process of being simplified should not be too strong, because otherwise the simplified variety may only be a temporary stage of individual learners, which is likely to disappear in next generation. In other words, L2 learners must have the opportunity to become a distinct group with a distinct language, instead of a collection of individual learners each directed at the - possibly more prestigious - source language. Too close contacts between the L2 learners and the source language may prevent such group formation. In Africa Nubi and Katanga Swahili are fine examples of separation from the source language, while Kenyan Pidgin Swahili is a variety where condition 3) may no longer hold in the future, since it has a chance to disappear by the growing influence of Standard Swahili.

There are two typical situations where these three conditions hold. First of all, situations where a speech community expands outside its core area over new territories, and where the language is used initially for trade, but later adopted as a native language. When
communication between the new speech community in the peripheral zone and the original speech community is restricted, simplified varieties may arise. We have seen examples of these on the fringes of the Quechua language area, in Congo, and in the Arab lands. Other examples would be the expansion of Latin under the Roman Empire and the spread of English and French as languages of colonisation in Africa. In all these instances, in the centre a prestigious variety is spoken, while in the periphery simplified varieties are found.

The second situation is where a language of a small speech community becomes the language of a larger empire or cultural dominance area, but where in the centre the language is used as a vehicle of modernisation between various groups with various language and dialect backgrounds. In such cases, older more conservative varieties are retained in the periphery, while in the centre processes of koinéisation or standardisation may simplify the older variety. Scandinavian in this study is an example of this second type. Other cases are found in modern history, where older peripheral dialects are more complex than the compromised variety of the centre area of contact. Examples are Catalan (Penny 2000) and Greek (Horrocks 1997), cf. also Andersen (1988) and Klamer (to appear).

Although there are many cases of simplification in more recent history, the picture for prehistoric language may have been quite different. It is estimated that human language has existed at least since 40,000 BCE, while many estimates go further back to 200,000 or even 400,000 BCE (cf. Foley 1997: 70ff.). In any case, there must have been thousands of years of language history, about which we have no written documents, or other indications except some sketchy reconstructed proto-languages, which seldom go back more than 5,000 ~ 10,000 years, and some speculative ideas about earlier vocabulary and structure (cf. Bomhard & Kerns 1994). Earlier prehistoric language, let alone its inflectional morphology, remains obscure. However, when we examine the likelihood of the social factors discussed above actually being present in this early period of mankind, we can make some speculations about prehistoric complexity and simplifications.

Domestication of plants and animals did not take place before about 8,000 BCE (Schultz & Lavenda 1998: 182ff.). Before that time, man was dependent on gathering and hunting. Man did not remain on one location, but roamed around, dependent on seasonal changes, the life cycles of the plants they gathered, and the migrations of the animals they hunted. This implied that there was little material wealth or private property, apart from portable tools and small weapons. Although there are few remains from this period, apart from remains of bones and small tools and weapons, on the basis of this evidence and comparisons with ape behaviour and the composition of groups of modern hunter-gatherers it is estimated that prehistoric hunter-gatherer groups had between 20-30 up to at most 100 members (cf. Bentley & Ziegler 2000: 16; Starr 1973: 25ff; Beaken 1996: 127).

These small bands must have been Type 1 speech communities. First of all, they were highly self-sufficient, and the subsistence strategy did not depend on larger social or cultural organisations. The human population on earth was still small, and the hunter-gatherer groups must have lived rather isolated lives. Nevertheless, there were probably some contacts; groups must have met each other when they penetrated each other’s territories. Apart from warfare, arrangements to exchange marriage partners and perhaps
also cultural and technological goods are thought to have occurred. (Bomhard & Kerns 1994: 147; Bentley & Ziegler 2000: 16). The wide spread of early goods away from the original location where the material stemmed from, suggests at least either high mobility or early forms of trade (Starr 1973: 31). Second, it is generally assumed that at least after 40,000 BCE mankind had some form of ancestor worship, magic, and other cultural complexes, in which language may have had a dominant position (cf. Schultz & Lavenda 1998: 166; Foley 1997: 58). Third, since the groups were so small they often shared a common background, and very little dialect variation existed within a band. Since all three factors suggest that prehistoric hunter-gatherer groups lived in Type 1 speech communities, languages were probably at least as complex as languages spoken in Type 1 communities today. Because of the more extreme isolation and very small groups, the languages may have been even more complex in their inflectional morphology. Support for this view is presented by Perkins (1992), who found that the lower the top-level of organisation in a culture is, like in foraging communities, the more deictic categories are grammaticalised. Assuming that this also indicates more inflectional complexity (cf. section 2.3), and assuming that hunter-gatherer communities and languages of today are representative for prehistory this suggests that prehistoric language had, indeed, more complex inflectional morphology. Perkins suggests that this can be explained by the kind of discourse in such communities. Hunter-gatherers would tend to speak more about concrete actions and situations in the environment, which would lead to more grammaticalisation and incorporation of deictic affixes in verbs and nouns (cf. also Fortescue 1992; Fortescue & Lennert Olsen 1992 & section 2.3).

The question remains whether in prehistory processes of simplification as studied here also took place. Probably not. At that time there were no larger empires or spheres of influence, in which languages could rapidly spread from a prestigious centre to a new population in the periphery as in modern history. Traces of language spread correspond approximately to population movements (cf. Cavalli-Sforza et al. 1994). When groups moved to a new area, or replaced an earlier population, language spread ran roughly parallel with genetic spread. These are not the circumstances in which simplification is expected. A second way of spread was through the adoption of a language that was associated to technological or cultural innovation. Although language shift triggered by such dispersion among foragers is not impossible (cf. Evans & McConvell 1998 for evidence from Australian languages), it is unlikely that there were appropriate prehistoric circumstances which would bring about the adoption of a lingua franca and, at the same time, ensure that the language could be simplified due to massive second language learning and transmitted to future generations. Nettle and Romaine (2000: 103) write: “The hunter-gatherer way of life tended to preclude the emergence of dominant cultures or languages... There were no empires, no armies, and no cities. In a moving world, centres and peripheries are hard to identify, and technological change and diffusion is localized and gradual.”

It was only after the rise of the first larger state-formations around 3,000 BCE, that the accumulation of wealth and the stratification in society made it possible to control wider stretches of land and populations. When transport and communication improved, people could more easily spread from one centre and dominate larger areas, and the processes of massive and imperfect second language learning would become possible. Nichols (1998) mentions that in the earliest days of Indo-European expansion, lingua franca’s must have
been spoken in Eurasia, and that language shifts frequently took place as well. These language shifts must have been rather slow (Nichols 1998: 239), however, and spread at a speed more like that of Quechua in Bolivia than the changes in e.g. Nubi. In more recent times, means for rapid expansion and far-reaching control have further developed. In this study we have seen four examples of such rapidly expanding empires and languages, in which more rapid and extreme simplification occurred. The complicated question remains whether in the future such processes are still likely to occur. As Van Oostendorp (2002: 10) writes: “If you want to predict the linguistic future, you have to predict the whole future of the globalising world.” Nevertheless, I will make some speculations about future scenarios and their ramifications for simplification and complication.

In prehistory the first of the three conditions for simplification above was problematic. In the last two hundred years, and probably also in the future, the last condition has become problematic (contact between the centre of spread and the new domain must not be too intensive). In pre-industrial empires the periphery was often only loosely connected to the centre. Therefore, Arabic as spoken in Morocco, or Quechua in Ecuador could diverge from the varieties spoken in the centres of spread, and other norms could develop in the new peripheral varieties. In more recent times, however, because of technological innovations like wireless broadcasting and communication, trains, cars and aeroplanes, and improvement of infrastructure, all regions on earth are tightly interlocked with each other on a scale unprecedented before.214 The interdependence of mankind has also increased and people are linked up to each other over large distances; both economically, socially, politically and culturally. This process is called globalisation and is usually considered to consist of 1) a tendency to shift the centre of power from national states to multinational and transnational organisations, and 2) technological development that makes transnational communication and organisation of production smoother (cf. von Weizsäcker et al. 2002: 8). When globalisation proceeds in the future, simplification processes, as far as these depend on the isolation of the periphery from the centre, are less likely to occur, and extreme kinds of simplification, like in Nubi, will be unlikely.215 However, it is possible that in the future language will still be used in two different modes, as a means of communication and as a symbol of identity. As a means of communication we have seen in Kenyan Pidgin Swahili that a language can undergo extensive simplification. However, we predict that a variety like Kenyan Pidgin Swahili, thanks to the extensive communication channels, will converge naturally towards Standard Swahili. Likewise, it is typical that although Standard Swahili has spread rapidly over the whole of Tanzania in the 20th century, new simplified varieties with the potential to last a long time, and develop their own characteristics, as in Katanga, have not arisen.

214 Of course, there are some outskirts like Papua New Guinea, and the Amazon basin. However, an overwhelmingly large majority of the world’s population live in places that are very near to each other in distance measured in time.

215 Moreover, from the perspective of globalisation, intense contact and levelling does not only prevent extreme simplification, but also pressures established smaller languages to vanish and to be replaced by major languages, especially by the one and only global language at the moment: English (cf. Crystal 1997; Van Oostendorp 2002).
Nevertheless, the pressure on a language to simplify when it is used in its communicative function may remain. In some perceptions of history, people are considered to be striving towards rationality, more autonomy, and economic life improvement. Human history should be progressing towards these values, which received their largest boost and articulation in western Europe in the period of Enlightenment around 1800. In this perspective, traditions are held responsible for holding people back. Language and culture are viewed from an instrumental perspective: they are not part of individual identity. Instead, language and culture are used in the emancipation process towards more freedom, and when they block improvement, they should be altered. This perspective on language corresponds best to a view where people are encouraged to learn the language with which they have the highest chances to be economically successful. Languages in themselves have no special value for people, but only in combination with the non-linguistic gains they can eventually draw from them. In this view language loss and language death are not regrettable events. In a period of globalisation when societies become more complex and interdependent, it would be advisable, according to this perspective, that people adapt to this economically beneficiary globalisation process, and learn the language(s) of progress. Simplification of these languages would be a good thing as long as it improves communication and makes human interactions easier. Complex irregularities are unnecessary in this view, and there is no reason, for example, to retain strong verbs in English as far as these make English less learnable. In the past this instrumental attitude towards language indeed simplified Norwegian in the period of the Hanseatic trade, perhaps also Quechua in Ecuador, and Swahili when it was spread by traders over East-Africa. When in the future this view will become more popular, the dominance of simplified forms of English and other major languages can be expected.

From another perspective people also strive towards the improvement of their life conditions, but the articulation and meaning of ‘improvement’ is embedded in a culture and language that belongs essentially to human identity. This cultural and linguistic part of human identity should be evaluated in its own terms, and not judged from universal standards of efficiency alone. Human history would consist of transformations of and interaction between different cultures and societies, while there are no absolute standards of progress.

These two perspectives on history recur frequently in debates pertaining to history, social sciences and philosophy. With respect to linguistics, the latter perspective is especially favoured by Herder and Von Humboldt in 19th century Romanticism. In this perspective, individual identity and well-being cannot be separated from the cultural and linguistic backgrounds of people. All languages are considered to be equal, not because of the benefits afforded to the user in other domains, but because of the plain fact that human dignity and identity find expression in one’s language and culture. The influence of

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216 Such ideas, and the ideas in next paragraph, are both descriptive, by claiming that man and history are driven by certain forces and goals, as well as normative, since they also argue that man should act accordingly.

217 Strong proponents of language maintenance sometimes also stick to such arguments. For instance, Nettle and Romaine (2000) argue that a reason to protect languages from extinction is that threatened languages may contain valuable knowledge which humanity would lose when these languages die. In other words, it is not the language itself that should be protected, but the knowledge it contains. Essentially this is also an instrumental view on language.
Romanticism on the maintenance of complex redundancies can be seen in Faroese. If this stream of thought had not existed in Faroese society, Faroese, at least in its archaic form, would probably have died and been replaced by Danish.

In the latter perspective short-term economic benefits resulting from giving up one’s language do not compensate for long-term losses of parts of one’s identity, and it is predicted that languages and non-communicative complexities are not so easily given up. On the contrary, as a reaction to globalisation people may stick to their language even more eagerly. Castells (1997: 52) writes: “…in a world submitted to cultural homogenization by the ideology of modernization and the power of global media, language, as the direct expression of culture, becomes the direct trench of cultural resistance, the last bastion of self-control, the refuge of identifiable meaning.” We have seen examples of similar reactions in the past in the subsistence of Cuzco Quechua and Icelandic in periods of domination from outside. In addition, not only minor languages, but perhaps also dominant lingua franca’s may remain appreciated for their symbolic value. In summary, from this second perspective we expect even less simplification than in the former scenario and also more language diversity.

In conclusion, simplification processes were probably unknown in prehistoric times; modern history, however, has seen many instances of simplification, and the future will probably bring only minor modifications in order to use a language as a lingua franca. More severe simplifications that arise from restricted access are less likely. To what extent larger languages like English, Arabic, and Russian will be changed in their inflectional morphology depends on the vision on the function and place of language in culture and society held by future language users.

While Sapir denied any association between cultural advance and language complexity, I have argued that complexity and simplification, at least in inflectional morphology, correlate with social and cultural changes. Therefore, Sapir’s adagium (1921: 219):

“Both simple and complex types of language of an indefinite number of varieties may be found spoken at any desired level of cultural advance. When it comes to linguistic form, Plato walks with the Macedonian swineherd, Confucius with the head-hunting savage of Assam.”

may be completed by:

“Simple and complex types of inflection are found related to social and cultural factors. When it comes to linguistic form, Mohammed the Prophet walks with Hagar the Viking, and the Arab trader in Fez walks with the Hanseatic merchant in Bergen.”
Appendix

Table 1 Icelandic changes in the strong verb class system
In the three columns on the left the Old Norse strong verbs that changed their class membership in Icelandic are listed (cf. note 124). In the first column the Old Norse verb form is given, in the second the English translation, and in the third its conjugation class (cf. section 5.2.1 and 5.3.2.2). ‘W1’ in the third column means that the verb belonged to weak class 1. When two classes are given, the verb can conjugate in two ways. In the three columns on the right the Icelandic counterparts of the Old Norse verbs are given, with their English translation, and their (changed) class membership (cf. 5.3.1 and 5.3.2.2).

<table>
<thead>
<tr>
<th>Old Norse</th>
<th>English</th>
<th>Class</th>
<th>Icelandic</th>
<th>English</th>
<th>Class</th>
</tr>
</thead>
<tbody>
<tr>
<td>rísta1</td>
<td>slash</td>
<td>1</td>
<td>rísta</td>
<td>cut</td>
<td>W2</td>
</tr>
<tr>
<td>dvína2</td>
<td>give up</td>
<td>1</td>
<td>dvína</td>
<td>lose power</td>
<td>W1</td>
</tr>
<tr>
<td>ríta3</td>
<td>trench, write</td>
<td>1</td>
<td>ríta</td>
<td>write</td>
<td>W1</td>
</tr>
<tr>
<td>svípa4</td>
<td>swoop</td>
<td>1</td>
<td>svípa</td>
<td>be similar to</td>
<td>W1</td>
</tr>
<tr>
<td>slöngva5</td>
<td>sling</td>
<td>3</td>
<td>slöngva</td>
<td>sling</td>
<td>W2/W1</td>
</tr>
<tr>
<td>snerta</td>
<td>touch</td>
<td>3</td>
<td>snerta</td>
<td>touch</td>
<td>3/W2</td>
</tr>
<tr>
<td>hjalpa</td>
<td>help</td>
<td>3/W1</td>
<td>hjalpa</td>
<td>help</td>
<td>W1</td>
</tr>
<tr>
<td>fela</td>
<td>hide</td>
<td>4</td>
<td>fela</td>
<td>conceal</td>
<td>4/W3</td>
</tr>
<tr>
<td>feta</td>
<td>step</td>
<td>5</td>
<td>feta</td>
<td>step</td>
<td>W1</td>
</tr>
<tr>
<td>fregna6</td>
<td>ask</td>
<td>5</td>
<td>fregna</td>
<td>bear news</td>
<td>5/W1</td>
</tr>
<tr>
<td>freta</td>
<td>fart</td>
<td>5/W1</td>
<td>freta</td>
<td>fart</td>
<td>W1</td>
</tr>
<tr>
<td>gala</td>
<td>crow</td>
<td>6</td>
<td>gala</td>
<td>crow</td>
<td>6/W1</td>
</tr>
<tr>
<td>mala</td>
<td>grind</td>
<td>6</td>
<td>mala</td>
<td>grind</td>
<td>W1</td>
</tr>
<tr>
<td>skapa</td>
<td>shape, make</td>
<td>6/W1</td>
<td>skapa</td>
<td>shape</td>
<td>W1</td>
</tr>
<tr>
<td>þvá</td>
<td>wash</td>
<td>6</td>
<td>þvá</td>
<td>wash</td>
<td>6/W3</td>
</tr>
<tr>
<td>sá</td>
<td>sow</td>
<td>7/W1</td>
<td>sá</td>
<td>sow</td>
<td>W2</td>
</tr>
<tr>
<td>blanda</td>
<td>blend</td>
<td>7/W1</td>
<td>blanda</td>
<td>mix</td>
<td>W1</td>
</tr>
<tr>
<td>falda</td>
<td>fold hood</td>
<td>7/W1</td>
<td>falda</td>
<td>fold</td>
<td>W1</td>
</tr>
</tbody>
</table>

Notes
1 In Old Norse there was a strong verb rísta, and a weak verb rista. Today only weak rísta subsists.
2 Dvína became weak probably in the pre-literary period.
3 In Old Norse there was a strong verb ríta, and a weak verb ríta. Today only weak ríta subsists.
4 In Old Norse there was a strong defective verb svípa, and a weak verb svípa. Today only weak svípa subsists.
5 The verb slöngva had several varieties, slynge, slynge, slönga and slengja. The first three were strong, the last two weak. Today all varieties are weak.
6 The verb fregna probably became weak because of its formal similarity to the class of verbs ending on -na, all of which are weak.
### Table 2 Faroese changes in the strong verb class system

In the three columns on the left the Old Norse strong verbs that changed their class membership in Faroese are listed. In the first column the Old Norse verb form is given, in the second the English translation, and in the third its conjugation class (cf. section 5.2.1 and 5.3.2.2). ‘L’ in the third column means that the Faroese strong verb is a loan from another language than Old Norse, and ‘U’ means that the source of the Faroese verb is unknown (cf. 5.4.2.2).

In the four columns on the right the Faroese counterparts of the Old Norse verbs are given, with their English translation, and their (changed) class membership (cf. 5.4.1 and 5.4.2.2). In the column under ‘Class in Faroese’ I give the classes as found in dictionaries and grammars. In the column under ‘Class in Tórshavn’ deviations from the standard form of Faroese as spoken in Tórshavn are given. When more than one class is given, the verb can conjugate in more than one way. ‘W1-4’ refers to the four weak classes of Faroese, and ‘-’ means that there is no counterpart of the Old Norse strong verb in Faroese.

<table>
<thead>
<tr>
<th>Old Norse</th>
<th>English</th>
<th>Class</th>
<th>Faroese</th>
<th>English</th>
<th>Class in Faroese</th>
<th>Class in Tórshavn</th>
</tr>
</thead>
<tbody>
<tr>
<td>bíþa</td>
<td>bide, wait</td>
<td>1</td>
<td>bíða</td>
<td>wait for</td>
<td>W1</td>
<td></td>
</tr>
<tr>
<td>blíkja</td>
<td>blink</td>
<td>1</td>
<td>blíka</td>
<td>be calm</td>
<td>W1</td>
<td></td>
</tr>
<tr>
<td>gína</td>
<td>gape</td>
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Table 3 Norwegian changes in the strong verb class system

In the three columns on the left the Old Norse strong verbs that changed their class membership in Norwegian are listed. In the first column the Old Norse verb form is given, in the second the English translation, and in the third its conjugation class (cf. section 5.2.1 and 5.3.2.2). ‘L’ in the third column means that the Norwegian strong verb is a loan from a language other than Old Norse. and ‘U’ means that the source of the Norwegian verb is unknown. ‘N’ means that the verb is newly formed, e.g. by analogous extension or merger of two other verbs, and ‘W’ means that the verb was weak in Old Norse.

In the three columns on the right the Norwegian counterparts of the Old Norse verbs are given, with their English translation, and their (changed) class membership (cf. 5.5.1 and 5.5.2.2). When more than one class is given, the verb can conjugate in more than one way. ‘W1-4’ refer to the four weak classes of Norwegian, and ‘-’ means that there is no counterpart of the Old Norse strong verb in Faroese.

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*The infinitival form *rjúva *is still in current use, but there are no finite forms anymore.*
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Summary

This thesis deals with the effect of sociolinguistic changes on the complexity of verbal morphology in four typologically contrasting language families. The introductory chapter begins with a survey of the status of the notion of complexity among linguists at present, and provides a short historical background of this notion that is pivotal in this study. Next I turn to the definition of complexity. Linguistic phenomena are considered complex when they are difficult to grasp by an outsider who is not familiar with the speech community. I hypothesise that such phenomena are more prevalent in speech communities that have had a history of isolation (‘Type 1’ communities) than in open communities with a history of much second language acquisition (‘Type 2’ communities). In section 1.5 I explain why I restrict myself to complexity in verbal inflectional morphology.

In Chapter 2 I elaborate on the notions introduced in the first chapter. Section 2.1 deals with some principles that play a role in inflection: 1) the Economy Principle, that demands as few inflectional categories as possible; 2) the Transparency Principle, that states that the relation between meaning and form should be as clear as possible; and 3) the Isomorphy Principle that requires that the order of elements be the same in different domains. The Economy Principle is violated when languages have many inflectional categories. The Transparency Principle is violated by fusion, fission, allomorphy and homonymy. The Isomorphy Principle is violated by inconsistent affix orders. In 2.2 I discuss three pairs of contrasting modes of language use: 1) first language acquisition versus second language acquisition; 2) language production versus language perception; and 3) language use in its symbolic function versus its communicative function. Section 2.3 elaborates on the two types of speech communities. In a Type 1 community most learners are first language learners, preferences of speakers are most appreciated, and language is mainly used in the symbolic mode. A Type 2 speech community has the opposite characteristics. In these two prototypical communities the extremes of the three dimensions of language use are clustered. In 2.4 I examine for each of the three inflectional Principles whether its compliance or violation would be preferred in each of the six modes of language use. By bundling the combination of these modes into the two types of speech communities, I arrive at a prediction about the prevalence of specific morphological phenomena in each community type (2.5), or in other words, what phenomena may be called complex.

Chapter 3 formulates the Principles more formally in Optimality Theory (OT). I rephrase the Transparency and Isomorphy Principle as families of Faithfulness constraints and the Economy Principle as a family of Markedness constraints. I distinguish phonological versus morphological constraints in these two constraint families, since these have different effects on language complexity. To explain what happens when a community changes from Type 1 into Type 2 the OT lexicon and constraint reranking play an important role. Furthermore, I use a hierarchy of features that predicts what inflectional categories are lost first. Sometimes, motivations for change are involved that do not fit easily into a traditional OT model, because relations between different Output forms seem to play a role. This is accounted for in the Optimal Paradigm model of McCarthy (2001), although the precise elaboration of this model for morphology is a subject for further investigation.

In Chapters 4 to 7 I discuss cases of simplification in four language groups. In each group I compare what happened to a language when the community where it is spoken changed partially into Type 2. Because the path of simplification may not only be dependent on
external factors, but also on language structure, I examine four typologically contrasting language groups: Arabic (internal modification), Scandinavian (fusion), Quechua (suffixation) and Swahili (prefixation). In each group I describe the relevant social and cultural histories, and I analyse the changes in terms of the Principles of Chapter 2, and in terms of OT. I relate the morphological changes to the social and cultural changes. The four case-studies concern languages that spread rapidly over a large area. In each case there was a point of origin where initially a complex language was spoken, and a periphery in which the original language was simplified. In the Quechua language area this idealisation is most accurate: the most complex varieties are spoken in the centre, and the further away from the centre the less complex the verbal inflection. The centre from where Arabic spread is also the most conservative, while on the fringes of the Arabic language area where most contacts with other languages took place inflection was simplified. In Swahili the original centre at the coast is most conservative, while the simplified varieties are found on the fringes of the Swahili area. Only in Scandinavian the situation is different. After Old Norse had spread towards Iceland and the Faroese, it was the centre of the Viking expansion itself where simplification took place. Influence from trade and domination of Danish were strongest in the coastal areas of Norway, while the earlier periphery of the Viking area became conservative.

From these case-studies it becomes clear that to a large extent the predictions of Chapter 2 are borne out. There are, however, a few surprising patterns that I discuss in the conclusions to these chapters. One surprising finding is that second language learners and internal variation do not influence the outcomes of change in a language by themselves. In Iceland, in the 17th and 18th century, Danish played a dominant role. However, Danish influence on Icelandic verbal inflection was minimal, in contrast with its influence on Norwegian and Faroese inflection. In the Quechua area there were intense demographic changes, migrations and second language learning after the Conquest by the Spaniards in the 16th century. However, simplification in Cuzco Quechua has been minimal. The retention of complex structure in Cuzco Quechua may be attributed to its agglutinative more transparent character. An additional factor in these two cases of conservatism may be the high value attached to the languages. In both cases the population was confronted with a foreign oppressor. Perhaps the speakers of Quechua and Icelandic kept faithful to their language as a symbol of dignity and ‘silent’ resistance. This can be examined further by e.g., comparing the number of borrowings in that period with more modern times in Icelandic and Cuzco Quechua. Another finding is that allomorphy does not diminish as rapidly as expected. For Scandinavian the retention of allomorphy may be explained by its particular verbal morphology. However, also more generally, allomorphy is more often retained or even extended than expected.

In the final chapter I further discuss these and other trends in the simplification scenarios, and I conclude by surveying the possibilities provided in the history of the world for complex morphology and simplification. Paleolithic prehistory seems to have been the most suitable period for complex morphology, while the age of agriculture and empire building provided the best setting for simplification.
Samenvatting

In dit proefschrift onderzoek ik het effect van sociolinguïstische veranderingen op de complexiteit van verbale inflectionele morfologie in vier typologisch verschillende taalfamilies. Het introductiehoofdstuk begint met een overzicht van de huidige status van het begrip 'complexiteit' onder taalkundigen, en biedt een korte historische achtergrond van dit begrip, dat een centrale rol speelt in deze studie. Daarna bespreek ik mijn definitie van complexiteit; ik noem linguïstische verschijnselen complex wanneer ze moeilijk te vatten zijn voor een buitenstaander die onbekend is met de desbetreffende taalgemeenschap. Mijn hypothese is dat zulke verschijnselen eerder zullen voorkomen in taalgemeenschappen die een geschiedenis van isolatie hebben gekend ('Type 1' gemeenschappen) dan in open gemeenschappen met een geschiedenis van veel tweede taalverwerving ('Type 2' gemeenschappen). In paragraaf 1.5 motiveer ik waarom ik me specifiek richt op complexiteit in het domein van verbale inflectionele morfologie.

In hoofdstuk twee werk ik de begrippen uit het eerste hoofdstuk nader uit. Paragraaf 2.1 behandelt principes die een rol spelen bij inflectie: 1) het Economie Principe dat vraagt om een zo laag mogelijk aantal inflectionele categorieën; 2) het Transparantie Principe dat zegt dat de relatie tussen betekenis en vorm zo doorzichtig mogelijk moet zijn; en 3) het Isomorfie Principe dat eist dat de volgorde van elementen hetzelfde is in verschillende domeinen. Het Economie Principe wordt geschonden in talen met veel inflectionele categorieën. Het Transparantie Principe wordt geschonden door fusie, fissie, allomorfie en homonymie. Het Isomorfie Principe wordt geschonden door inconsistent volgordes van affixen. In 2.2 bespreek ik drie paren van contrasterend taalgebruik: 1) eerste talverwerving versus tweede talverwerving; 2) taalproductie versus taalperceptie; en 3) symbolisch taalgebruik versus communicatief taalgebruik. In paragraaf 2.3 ga ik nader in op de twee typen taalgemeenschappen. In een gemeenschap van het Type 1 verwerven de meeste mensen de taal in kwestie als eerste taal, zijn de voorkeuren van sprekers relatief belangrijk en wordt de taal vooral op symbolische wijze gebruikt. Een Type 2 taalgemeenschap heeft de tegenovergestelde kenmerken. In deze twee prototypische taalgemeenschappen zijn de extremen van de drie paren van taalgebruik geclusterd. In 2.4 onderzoek ik voor elk van de drie inflectionele principes in hoeverre hun schending of navolging de voorkeur heeft in elk van de zes soorten taalgebruik. Door de bundeling van taalgebruikswijzen in twee typen taalgemeenschappen, kom ik tot voorspellingen over het voorkomen van specifieke morfologische verschijnselen in beide gemeenschapstypen (2.5). Tevens is zo het begrip complexiteit nader gedefinieerd.

In hoofdstuk drie formuleer ik de inflectionele principes op meer formele wijze met behulp van de Optimaliteitstheorie (OT). Het Transparantie en het Isomorfie Principe komen overeen met families van Faithfulness constraints, en het Economie Principe met de familie van Markedness constraints. Binnen deze twee groepen van constraints onderscheid ik morfologische en fonologische constraints vanwege hun verschillende effecten op complexiteit. Bij de verklaring van wat er gebeurt als een taalgemeenschap van Type 1 in Type 2 verandert, spelen het OT-lexicon en constraint herordening een grote rol. Verder maak ik gebruik van een hiërarchie van kenmerken die voorspelt welke categorieën het eerst verloren gaan. In sommige gevallen zijn er motivaties voor verandering die moeilijk zijn uit te drukken in een traditioneel OT-model, omdat relaties tussen meerdere Output-vormen een rol lijken te spelen. Dit kan worden verantwoord
Samenvatting

met behulp van McCarthy’s (2001) Optimal Paradigm-model, hoewel de precieze uitwerking van dit model voor morfologie onderwerp is voor verdere studie.

In hoofdstuk vier tot en met zeven onderzoek ik gevallen van simplificatie in vier taalgroepen. Binnen iedere groep bekijk ik wat er met een taal gebeurt wanneer diens taalgemeenschap in mindere of meerdere mate verandert van een Type 1- in een Type 2-gemeenschap. Omdat de simplificatiwijze niet enkel afhangt van externe factoren, maar ook van de taalstructuur zelf, onderzoek ik vier typologisch uiteenlopende taalgroepen: Arabisch (interne modificatie), Scandinavisch (fusie), Quechua (suffixatie), en Swahili (prefixatie). In iedere groep beschrijf ik de sociale en culturele geschiedenissen van de talen en taalgemeenschappen, en analyseer ik de morfologische veranderingen met behulp van de principes uit hoofdstuk twee en het OT-model uit hoofdstuk drie. Ik verbind de morfologische veranderingen met de sociale en culturele veranderingen. Het betreft vier talen die zich in korte tijd over een groot gebied verspreidden. Bij ieder van de vier is een oorspronkelijke locatie aan te wijzen waar een complexe taal werd gesproken, en een periferie waar de originele taal werd gesimplificeerd. In het Quechua-taalgebied is deze generalisatie het meest accuraat: de meest complexe variëteiten worden in het centrum gesproken, en hoe verder hiervan verwijderd des te minder complex de verbale inflectie. In het centrum vanwaar het Arabisch zich verspreidde is de complexiteit ook het meest behouden, terwijl de periferie van het Arabisch taalgebied, waar het meeste contact met andere talen plaatsvond, de inflectie is vereenvoudigd. In het originele centrum aan de kust van oost Afrika is het Swahili het meest complex, terwijl de gesimplificeerder sangetien meer aan de rand van het Swahili gebied worden gevonden. Alleen in het Scandinavisch is de situatie anders. Nadat het Oud-Noors zich over de Faeröer-eilanden en IJsland had verspreid, vond de simplificatie plaats aan de Noorse kust, het oorspronkelijke centrum van de Viking expansie. Dit werd veroorzaakt doordat handelsinvloed en Deense dominantie daar het sterkst waren, en de eerdere periferie van het Vikingrijk juist het behoudende gebied werd.

Uit deze case-studies blijken de voorspellingen van hoofdstuk 2 grotendeels uit te komen. Echter, er zijn een paar opvallende patronen van verandering die ik in de conclusies van hoofdstuk 4 tot 7 en in hoofdstuk 8 bespreek. Opvallend is dat de uitkomsten van verandering niet volledig worden gedetermineerd door de invloed van tweede taalverwerving plus interne variatie. In IJsland was Deens in de 17de en 18de eeuw een dominante taal. Desalniettemin was de invloed van het Deens op de IJslandse inflectie in die tijd minimaal vergeleken met de invloed op de Faeröerse en Noorse inflectie. In het Quechua-gebied vonden intense demografische veranderingen, migraties en tweede taalverwervingsprocessen plaats na de verovering door de Spanjaarden in de 16de eeuw. De simplificatie van het Cuzco Quechua is echter minimaal. Wat betreft het Cuzco Quechua kan het behoud van complexe structuur worden toegeschreven aan de agglutinatieve en transparante Quechua-structuur. Een factor in beide gevallen van conservatisme zou de hoge waarde kunnen zijn die sprekers aan hun taal toekenden. In beide gevallen werd de bevolking geconfronteerd met een onderdrukker van buiten. Misschien bleven de Quechua en IJslandse sprekers extra trouw aan hun taal omdat ze die als symbool van eigenwaarde beschouwden en hiermee ‘stil’ verzet konden plegen. Dit zou verder kunnen worden onderzocht door het aantal leenwoorden in desbetreffende periodes te bekijken in het Quechua en IJslands, en dit te vergelijken met andere periodes. Een andere bevinding van deze studie is dat allomorfie niet zo snel verdwijnt.
als ik verwachtte. Voor het Scandinavisch valt dit te verklaren uit de fusionele structuur van de verbale inflectie. Echter ook in het algemeen wordt allomorfie onverwachts goed bewaard, en soms zelfs uitgebreid.

In het laatste hoofdstuk bediscussieer ik deze en andere simplificatiescenario’s. Ik besluit het proefschrift met een beschouwing van de mogelijkheden tot complexe morfologie en simplificatie in de geschiedenis van de mensheid. De paleolithische prehistorie lijkt de meest geschikte tijd te zijn geweest voor complexe morfologie, terwijl de periode van landbouw en uitbreidende wereldrijken de beste context bood voor simplificatie.
Dankwoord

De allereerste wenk voor dit proefschrift kwam in 1989 van Arnold Evers die zich tijdens een college liet ontvallen dat het nog maar de vraag was of alle talen even complex waren. Hoewel onbedoeld, wil ik hem voor deze aanzet tot mijn proefschrift bedanken. Daarnaast dank ik alle andere collega’s, docenten en vooral ook studenten van de Universiteit Utrecht, die begin jaren negentig voor een stimulerende en vrije omgeving zorgden waarin ik cursussen taalkunde kon ontwikkelen en doceren. Met name één persoon in het bijzonder zou ik willen bedanken. Dankzij hem weet ik wat bezieling in de taal en taalkunde kan betekenen. Het Leidse promotiereglement verbiedt mij hier nader op in te gaan.

Mijn eerste jaar als beurspromovendus in het Bungehuis aan de Universiteit van Amsterdam was het gezelligste jaar van mijn AIO-loopbaan. Hiervoor wil ik de architecten van het Bungehuis en de stad Amsterdam bedanken, de organisatoren van de wekelijkse vrijdagmiddagborrel, maar vooral ook Jacques Arends, Dik Bakker, Hans den Besten, Adrienne Bruyn, Mily Crevels, Kees Hengeveld, Marco Last, Hadewych van Rheeden, Norval Smith, Hein van der Voort en alle andere medewerkers bij taalwetenschap in het algemeen en sociolinguïstiek en creolistiek in het bijzonder, inclusief de niet nader noembare personen. Behalve voor de aangename sfeer wil ik hen ook bedanken voor de wijze waarop zij mij richting wezen naar verdere typologische en sociolinguïstische einders.

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Dankwoord

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Curriculum Vitae


Na zijn afstuderen in november 1992 onderwees Wouter Kusters Nederlands in een asielzoekerscentrum en was hij docent Taalwetschap aan de Rijksuniversiteit Utrecht. In september 1997 begon Wouter als promovendus bij het IFOTT aan de Universiteit van Amsterdam aan het onderzoek waar dit proefschrift uit is voortgekomen. Een jaar later vertrok zijn promotor naar Leiden, en Wouter volgde hem. Aan de Leidse Universiteit werkte hij eerst bij het CNWS en later bij het HIL/ULCL.