

Middles and Argument Structure across Languages

Published by
LOT
Trans 10
3512 JK Utrecht
The Netherlands

phone: +31 30 253 6006
fax: +31 30 253 6000
e-mail: lot@let.uu.nl
<http://www.lot.let.uu.nl/>

Cover illustration: m & m home studio artworks' adaptation of an oil painting by an anonymous artist from Bali

ISBN 90-76864-50-5

NUR 632

Copyright © 2004 Marijana Marelj. All rights reserved.

Middles and Argument Structure across Languages

**Mediale Constructies en Argumentstructuur in
Taalvergelijkend Perspectief**
(met een samenvatting in het Nederlands)

Proefschrift

ter verkrijging van de graad van doctor
aan de Universiteit Utrecht
op gezag van de Rector Magnificus, Prof. dr. W. H. Gispen,
ingevolge het besluit van het College voor Promoties
in het openbaar te verdedigen
op woensdag 7 april 2004
des middags te 14.30 uur

door
Marijana Marelj

geboren op 21 oktober 1970 te Sremska Mitrovica

Promotores: Prof. dr. T. Reinhart
Prof. dr. E. J. Reuland

Table of Contents

Chapter 1 Preliminaries	1
1. The Subject of Inquiry	1
1.1 The Appeal of Middles.....	1
1.2 Objectives of the Inquiry.....	4
1.3 Layout of the Study.....	5
2. Theoretical Framework: the Theta System.....	7
2.1 Conceptual Systems and the Interface Issues in the Theta System	7
2.2 The Structure of the Theta System	8
2.2.1 Coded Concepts.....	8
2.2.2 Theta Roles in the Theta System and Thematic Relations in Parsons' (1990) System.....	14
2.2.3 Co-occurrences of Feature Clusters	19
2.2.4 Operations.....	20
2.2.5 Mapping (Linking) Instructions.....	24
2.2.6 The level of the Application of Operations	27
3. A Closer Look at the Lexicon.....	32
Chapter 2 Feature Clusters	37
1. Introduction	37
2. The Input of Feature clusters to the Syntax and the Semantics	38
2.1 The Input of Feature clusters to Syntax.....	38
2.2 The Input of Feature clusters to Semantics.....	42
3. Conditions on Thematic Roles.....	43
3.1 The Theta Criterion	44
3.2 The Uniqueness Criterion	48
4. Conditions on Feature clusters in the Theta System	55
4.1 The Non-Identity Constraint.....	55
4.2 The Cluster Distinctness Constraint	58
4.3 The Puzzle of Escape-Type Verbs.....	61
4.3.1 A Puzzle: Selectional Restriction with <i>Escape</i> -type Verbs.....	61
4.4 The Full Interpretation of Thematic Roles	66
4.4.1 The Intuition behind the FITR	67
4.4.2 Motivating the FITR.....	68
4.4.3 Predictions	69
4.4.4 Teach-type Verbs in English and SC	74
5. A Closer Look at Arguments, Adjuncts, and the FITR.....	76
5.1 Dative <i>To</i> versus Locative <i>To</i>	76
5.2 Adjuncthood of Directional PPs	79
5.3 Fine-Grained Approach to Prepositions	86
6. The Cluster Distinctness Constraint Revisited.....	92
6.1 Questions that Arise from the Cluster Distinctness Constraint....	92

6.2	The Cluster Distinctness Constraint through the Prism of the Full Interpretation of Thematic Roles.....	93
6.3	A Note on Middles	95
7.	Concluding Comments.....	96

Chapter 3 Clearing the Ground for Middles 99

1.	Introduction	99
2.	Properties of Middles	100
2.1	The Semantics of Middles.....	100
2.1.1	Aspectual Properties of Middles	100
2.1.2	Individual-Level and Stage-Level Predicates.....	104
2.1.3	Genericity of Middles.....	110
2.2	The Status of the External Role of Middles	114
2.2.1	Is the External Role in Middles Present Semantically?.....	114
2.2.2	Middles and Stative Unaccusatives	117
2.2.3	Is the Implicit Argument Assigned In the Syntax?.....	119
2.3	Licensing of Middles.....	124
2.3.1	Is Adverbial Modification Obligatory with Middles?	124
2.3.2	Which Adverbs are Admissible in Middles?	129
2.4	<i>By</i> -Phrases	133
3.	Is Middle Formation Syntactic or Lexical?	135
3.1	The Lexicon-Syntax Debate.....	135
3.2	Middle Formation as a Parameterizable Operation	142
4.	Concluding Comments.....	143

Chapter 4 Middle Formation in Lexicon Languages 147

1.	Introduction	147
2.	Peculiarities of Dutch and English Middles	147
2.1	Morphological Marking	147
2.2	The Puzzle of Ditransitive Verbs	148
2.3	A Lexical Restriction on the Middle Formation Operation	153
2.4	The Affectedness Constraint.....	153
2.5	Movement versus Non-movement Analysis of Dutch and English Middles.....	154
2.5.1	The syntax of Dutch and English Middles.....	154
3.	Accounts of Middles	160
3.1	The Affectedness Constraint Approaches: Roberts (1985) & Hoekstra and Roberts (1993).....	160
3.1.1	Affectedness Account for a Lexical Restriction on Middle Formation.....	160
3.1.2	Affectedness account of Ditransitive Verbs	162
3.2	Reformulating the Affectedness Constraint: Ackema & Schoorlemmer (1994).....	163
3.2.1	Ackema & Schoorlemmer's Account of the Lexical Restriction on Middle Formation.....	163

3.2.2	Ackema and Schoorlemmer's Account of Ditransitive Predicates	164
3.3	Substituting the Affectedness Constraint: Fagan (1992).....	165
3.3.1	Fagan's Account of the Lexical Constraint on Middle Formation.....	165
3.3.2	Fagan's (1992) Account of Ditransitive Verbs.....	167
3.4	The Issue of Movement versus Non-movement Derivation of Middles Revisited.....	168
3.5	Can middles in Dutch and English be derived in the Syntax? ...	169
4.	Theta System Approach to Middles.....	175
4.1	Criteria for Parameterization.....	175
4.2	The Layout of the Theta System Approach to Middles	176
4.2.1	The Set of Verbal Concepts LMF Applies to	177
4.2.2	Candidate Set through the Prism of Feature clusters.....	179
4.3	The Lexicon Middle Formation Operation.....	187
4.3.1	The Ban on Realizing the Recipient Goal role	187
4.3.2	Which PPs can be realized in a middle derivation?.....	195
4.4	Derivation of Middles	198
4.4.1	ARB-Role	199
4.4.2	Saturation.....	200
4.5	Lack of Morphological Marking: ACC Feature	204
4.6	Interpretation of Middles	207
4.7	<i>Laten</i> -Middles	207
4.8	Adjunct-Middles.....	211
5.	Concluding Comments.....	214

Chapter 5 Middles in Syntax Languages 217

1.	Introduction	217
2.	Properties of Middles in Syntax Languages	218
2.1	The Puzzle of <i>Si/Se/Sie</i> Constructions.....	218
2.2	Similarities between Middles in Lexicon and Syntax Languages.....	219
2.3	Differences between Middles in Lexicon and Syntax Languages.....	228
3.	Parameterizability of UG Arity Operations.....	236
4.	Arbitrarization	241
4.1	Impersonals	242
4.2	Object-Arbitrarization.....	247
5.	Concluding Comments.....	250

Chapter 6 SE-Derivations 253

1.	Introduction	253
2.	SE-Outputs	254
2.1	Reflexive Outputs.....	254

2.2	Outputs of Expletivization: Unaccusatives and Subject- Experiencer Verbs	259
2.3	“Frozen” Entries	264
2.4	Impersonals Revisited: Impersonal SE in Transitive Context ...	267
2.5	Can the Generalization Pertaining to SE-derivations be Stated Differently?	280
3.	Concluding Comments.....	282
	Concluding Summary	285
	Bibliography	293
	Samenvatting in het Nederlands	307

Acknowledgements

It is hard to find the appropriate words to thank enough my supervisors – Tanya Reinhart and Eric Reuland – who have guided me with ever-present enthusiasm and tremendous support on the exciting intellectual journey that has resulted in this manuscript.

Tanya Reinhart and her work have been an enormous source of inspiration to me. I thank her for teaching me about scientific rigor, passion for knowledge, integrity, generosity, and kindness. I thank her for always being there for me.

I thank Eric Reuland for being the source of energy and optimism, for many challenging and inspiring discussions, and for a plentitude of food for thought.

It has been a pleasure and a privilege to have them as my companions on this journey through the Middle Earth.

I am greatly indebted to Denis Delfitto, Martin Everaert, Terence Parsons, Tal Siloni, and Olga Mišeska Tomić for their valuable contributions towards the improvement of the final version of this manuscript.

A special ‘thank you’ goes to the ‘leden van mijn begeleidingsgroep’: Denis Delfitto and Martin Everaert. From Denis Delfitto, I have learned that the ‘lid van de begeleidingsgroep’ is someone who is willing to dedicate an immense amount of energy and time to a person and his/her work and who stays around (even when his office moves). From Martin Everaert, I have learned that it is someone whose door is always open, who often helps put things into perspective, and who will discuss with the same care and attention the draftiest of drafts and the (almost-there) final versions.

I am grateful to Olga Mišeska Tomić for her tremendous and continual support in so many ways from long before this journey started.

A special ‘thank you’ goes to Tal Siloni for her enthusiasm and for her willingness to get stuck in the middle of the middle with me on more than one occasion (and for turning each of these instances into an utterly beneficial and pleasant experience).

Alexis Dimitriadis’ stimulating and insightful comments, constructive criticism, and ever-present support and help (particularly needed at times when I felt like I was in the middle of nowhere) are greatly appreciated.

There is a gallery of people who also left an imprint on my work and/or life on this journey; some through exciting linguistic discussions on various subjects and/or inspiring comments on portions of my work; some as extremely generous and patient informants; some as being utterly nice fellow UiL OTS-ers; some by being supportive of me at different stages and in different – important – ways of this journey; most of them in more than one way. I thank Werner Abraham, Peter Ackema, Nadira Aljović, Sergey Avrutin, Željko Bošković, Irena Botwinik-Rotem, Patrick Brandt, Amela Čamdžić, Norbert Corver, Marcel den Dikken, Jan Don, Frank Drijkoningen, Christophe Costa Florêncio, Marc-Ariel Friedemann, Berit Gehrke, Paz Gonzáles, Johan Kerstens, Anna Kijak, Arnout Koornneef, Shakuntala Mahatna, Randall Major, Arjen Meerman, Mariska Meerman-Rollman, Tanja Milićev, Anna Młynarczyk, Øystein Nilsen, Rick Nouwen, Dimitra Papangeli, Małgorzata Patkowska-Matczak, Marcin Patkowski, Amir Rotem, Oren Sadeh Leicht, Kakhi Sakhltkhutsishvili, Maaike Schoorlemmer, Anca Sevcenco, Danijela Stojanović, Krista Szendrői, Sharon Unsworth, Nada Vasić, Willemijn Vermaat, Nadezhda Vinokurova, Mario van de Visser, Evangelia Vlachou, Amy Wall, and my colleagues from the University of Novi Sad, Faculty of Philosophy, Department of English.

Such a list cannot possibly be exhaustive. I apologize to those that were left out due to my absentmindedness and thank them, too.

A very special ‘thank you’ goes to Peter Ackema for the wonderful translation of the thesis-summary into Dutch.

My depth of gratitude goes to Randall Major and Tanja Milićev - without whose help and time-investment, portions of this manuscript would read... (sort of like the preceding part of this paragraph!)

I thank my WeiMar family, particularly my parents Vera and Živan, for being the rocks of Gibraltar only they can be.

Last but not least, I thank Martin Weidner for backing me up and taking care of my backups, for his love and patience, and for many, many other things.

Chapter 1

Preliminaries

1. The Subject of Inquiry

1.1 The Appeal of Middles

The central topic of this thesis is the middle construction as exemplified by the English sentence in (1).

- (1) Porcelain vases break easily.

Even at the first glance, the middle construction in (1) reveals a number of controversial properties, which make the middle construction very elusive. The most obvious thing about (1) is that it exhibits both the characteristics of active and passive outputs. Though the verb in (1) is in its active form, it is the notional object that realizes in the surface subject position. *The porcelain vases* in (1) is the notional object since it is interpreted as if it were ‘undergoing the breaking’. For this reason, this DP is associated with what is traditionally labeled a Theme-role. Syntactically, *the porcelain vase* seems to be the sole syntactic argument in (1). These characteristics of (1) make it look similar to what is called an unaccusative output like (2). Both (1) and (2) seem to have Themes as their sole syntactic arguments.

- (2) The porcelain vase broke.

There are several differences between (1) and (2). The most important for the purpose of this introductory discussion is the fact that unlike (2), the output in (1) has two semantic arguments. Namely, (1) is interpreted so that it is paraphrasable as *It is easy for people, in general to break the porcelain vase*. An output like (1) necessarily presupposes a *breaker*. The fact that the middle construction in (1) has two semantic arguments makes it very different from the unaccusative in (2) but very similar to the passive output in (3).

- (3) The porcelain vase was broken.

The passive output in (3) also has the notional object that realizes in the surface subject position. Both middles and passives are related to active transitive sentences

like (4). Namely, the grammatical subject of (1) and (3) corresponds to the transitive verb's object (4).

- (4) Someone broke the porcelain vase.

Notice, however, that (1) defies being captured in terms of the passive generalization. There are several well-known differences between (1) and (3). For the purposes of this discussion, I will mention two of them. Firstly, unlike the verb in (1), the verb in (3) is in its passive form. Secondly, (1) and (3) differ in terms of the base-generation of the syntactic argument. The surface subject in (3) is base-generated as the internal argument of the verb. For that reason, the passive in (3) is said to be syntactically unaccusative. The notional object of (1) however, has been argued to merge externally.¹ If the output in (1) has a verb in the active form and a Theme role that merges externally, then middles are very different from passives like (3), but very similar to a reasonably large group of verbs (e.g. *glow* and *glitter*) that share these two characteristics. Nonetheless, the middle-verb defies being classified with *glow*-type verbs. Whereas the Theme of *glow*-type verb is their sole semantic and syntactic argument, the output in (1) has two semantic arguments: the notional object that is syntactically realized and the notional subject that is saturated.

These characteristics, however, are but the tip of the iceberg of the phenomenon of middles. If, for instance, one's range of interest is expanded to include the middle construction in Serbian/Croatian (henceforth: SC), other interesting characteristics come to one's attention. The SC counterpart of English (1) is given (5). Unlike the English example, one of the characteristics of middle derivations in SC is the presence of the morphological marker – clitic *se*.

- (5) Porcelanska vaza **se** lako razbija.
The porcelain vase breaks easily.

The fact that the clitic *se* marks the middle construction in SC makes SC middles a highly intriguing and interesting phenomenon to study. In a comprehensive typological study, Kemmer (1993) presents 13 uses that are identified by the presence of what she calls the 'middle marker' (cognates of the SC boldfaced *se* in (5)). Though some of the semantic classes that represent different uses in Kemmer (1993) might be reduced using a different system of verb-classification, the study is utterly impressive as it identifies common uses in completely unrelated languages like Djola, Bahasa Indonesia, and Hungarian. Only a sample of what Kemmer calls 'middle uses' is illustrated for SC in (6). The example in (6a) illustrates grooming or body care class of verb. The example in (6b) illustrates what Kemmer calls the 'emotion middle', which commonly includes verbs of being angry, frightened, sad

¹ For the sake of presentation, the unergativity of middles in languages like English is taken here for granted. For the sake of correctness, however, I need to mention here that the syntactic status of middles in languages like English is not a settled one. There are proponents as well as opponents of the non-movement analysis. The issue will be addressed in Chapter 4.

or happy. Example (6c) illustrates the so-called frozen entries i.e. verbs that lack a transitive counterpart. The example in (6d) illustrates a passive use, whereas example (6e) illustrates the impersonal use. Finally, example (6f) illustrates the middle use. I add to the list the example in (6g). The use is not cross-linguistically attested (e.g. it is absent in the Romance group, the members of which exhibit the uses in (6a) - (6f)), but is pervasive across Slavic languages.²

- (6a) Maks se kupa.
Max se bathes
'Max bathes.'
- (6b) Maks se plaši.
Maks se fears
'Maks is scared.'
- (6c) Desila se nesreća.
happen se accident
'The accident happened.'
- (6d) Kuća se gradi.
The house se builds
'The house is being built.'
- (6e) Ovde se puno radi.
Here se a lot works
'One works a lot here.'
- (6f) Ovaj članak se lako čita.
This article se easily reads
'This article reads easily.'
- (6g) Maks se gura.
Maks se pushes
'Max is pushing some people.' as well as '
Max pushes people in general.' (i.e. Max is a bully)

There are several things to notice here. If one looks at the English translations of the SC examples in (6), it is only (6f) that corresponds to what seems to fit the label of the English middle. Though marked with the same morphological device, the constructions in (6a) – (6g), even at first glance, look as if they have very little in common. For instance, (6a) represents what is standardly labeled as a reflexive output whereas the verb in the example (6c) does not seem to be derived but rather frozen in the lexicon as such. Neither (6a) nor (6c) have to do anything with the

² The additional reading available for (6g) is the reflexive one. Since it is already illustrated in (6a), I am glossing over it.

meaning associated with the middle construction. The fact that the middle construction in SC shares a morphological marker with a range of constructions that seem quite different from it both syntactically and semantically as well as the fact that English - unlike SC - does not employ any device to mark its middle construction makes middles an interesting domain of research.

1.2 Objectives of the Inquiry

In the light of this brief overview of some of the intriguing properties of middles in English and SC, let us set out the objectives of this study. The main objective is to provide an account of middles with respect to their core syntactic and semantic properties across a sample of languages. There seems to be enough semantic evidence to justify the exploration of the middle as a cross-linguistic category. For instance, if one compares the SC output in (6f) with its English counterpart, they seem to be far more than just conventional translation equivalents. They seem to be verified in exactly the same situation. Both are, for instance, paraphrasable as *This article is readable* or *It is easy for people, in general, to read this article*. Consequently, my objective is to explore the common characteristics that pertain to middles in individual languages like English and SC and identify those that hold for middles across languages. There are, however, differences between middles in English and middles in SC. For instance, whereas SC (7a) is a perfectly acceptable output, its English counterpart in (7b) is a completely ungrammatical one.

(7a) Kišobrani se lako gube.

(7b) *Umbrellas lose easily.

Consequently, one of the objectives is to account for the differences - to pinpoint the domain(s) in which they occur, as well as to provide the answer to the question of why they occur. A further objective is to explore the possibility that the differences between English and SC are not only relevant for these two languages, but reveal a deeper pattern of cross-linguistic parameterization. To facilitate the testing of this hypothesis, in addition to English and SC, the scope of this study includes also Dutch, French, Hebrew, Italian, and Polish. Furthermore, if one is not willing to accept coincidence as the explanation of the appearance of the same marker in (6a)-(6g), one of the objectives is to explore possible generalizations pertaining to the presence of *se* in the outputs marked with *se*. Some of the outputs in (6) seem, even at first glance, to share more than just the presence of *se*. For instance - though syntactically unrealized - in all the examples in (6d)-(6f) - some sort of Agent is presupposed - a *builder* in (6d), a *worker* in (6e) and a *reader* in (6f). Consequently, one of the objectives of this study is to explore the common characteristics of these outputs that go beyond the presence of *se*. One would also like to understand what why the clitic appears in all these derivations. For that reason, constructions like Impersonals (6e) are also explored in this study.

Finally, it should be stressed that the allure of middles extends well beyond their empirical elusiveness and oddness as illustrated by the middles in English and SC in this section. It is often noted that the theoretical appeal of the middle construction lies in the fact that different hypotheses about the intricate interplay between different conceptual systems can be tested by analyzing the middle construction. Namely, due to its properties, the middle construction seems to be a good testing ground for the interface between the system of concepts, the computational system (i.e. syntax), inference (i.e. semantics), and discourse. Having in mind that the interface issues are one of the central interests of contemporary theoretical linguistics, this value of the middle construction in theoretical terms should, certainly, not be ignored.

1.3 Layout of the Study

The theoretical framework assumed in this study is Reinhart's Theta System. An overview of the system is given in this Chapter. This overview is followed by a discussion on the necessity of the existence of the 'active' lexicon, as it is implied in the Theta System. Chapter 2 examines in more detail certain aspects of the framework. The focus of my attention is on feature clusters as defined in the Theta System and their properties. The term 'feature clusters' corresponds to the traditional label 'theta roles'. Two major topics are examined here. On the one hand, I pursue the investigation of the rules that govern the co-occurrences of feature clusters. On the other hand, I examine the implications of notions such as 'underspecified cluster' in syntactic and semantic terms. By critically examining the implications of certain notions like 'underspecified clusters', I propose that a new principle – the Full Interpretation of Thematic Roles – needs to be added to the assumptions of the Theta System. The principle is of crucial importance for tackling the issue of middles in Chapter 4. As an added bonus, in terms of the Full Interpretation of Thematic Roles, I provide a possible answer to one of the long-standing mysteries in linguistics – the Animacy Restriction in the Double Object Construction. Another issue that is dealt with is the status of arguments versus adjuncts in the Theta System. The importance of this discussion is twofold. Firstly, it is important for a successful account of middles in languages such as English since – intriguingly enough – whereas (8a) is not acceptable in English, the output in (8b) is.

(8a) *Big presents don't ship friends easily.

(8b) Big presents don't ship easily to foreign countries.

Secondly, the issue of arguments versus adjuncts deserves a closer examination on its own merit. The examination has also broader implications for the system, since the status of adjuncts has not been examined in the Theta System. In Chapter 3, the characteristics of middles across languages are examined. The aim of this chapter is to define as well as to delimit the scope of an investigation into the middle construction. On the one hand, the evidence presented in Chapter 3 allows us to

verify the status of middles as a cross-linguistic semantic category. On the other hand, it allows us to trace and eliminate from the inquiry the middle imposters*i.e.* constructions that in certain respects look very much like middles, but are not middles. This Chapter examines the properties of middles as well as the diagnostics used in the literature to tease out middle derivations. With respect to some of such tools, I will argue that they are unreliable not because middles do not pass the tests in question, but because one is not sure what the tests diagnose. Namely, as will be shown, other constructions with properties different from middles in crucial respects pass some of these standard tests. Thus, the inquiry in Chapter 3 confirms the conclusion reached in Condoravdi (1989) that the middle construction exists as a semantic category, but that it is expressed in a variety of ways cross-linguistically. Though Condoravdi's conclusion is valid, the differences between middles cross-linguistically are not only syntactic. Some of the differences that cannot be rooted in the syntax of middles in the languages that are under consideration in this study are briefly presented in Chapter 3.

Chapters 1, 2 and 3 can be viewed as a clearing-the-grounds-for-middles unit. Whereas the latter provides an identity card of the middles across a sample of languages, the former two lay out the tools instrumental in capturing middles in the languages under consideration here. Chapter 3 also deals with the question of what the best way to tackle middles is. As will be shown, the properties of the middle construction in some languages make them more comfortable in the lexicon, whereas for the middle construction in other languages the syntactic derivation of middles is more appropriate. Consequently, I propose that the middle construction should be tackled cross-linguistically by means of a parameterizable operation. The conclusions reached in Chapter 3 necessitate splitting up the investigation into two separate parts: Chapter 4 deals with the middle construction in lexicon languages where a lexicon language is a language in which middles are derived presyntactically, and Chapter 5 deals with the middle construction in syntactic or syntactic languages, where a syntactic language is a language in which middles are derived in the syntax. Chapter 4 can also be viewed as a corroboration of the structure of the lexicon as proposed in the Theta System since the analysis of middles proposed in Chapter 4 can be maintained only if one assumes that there is a Manipulative or Rule-Driven component of the lexicon. In addition to tackling the issue of middles in syntactic languages, Chapter 5 explores the common denominator behind the various derivations that are marked with the presence of the clitic and opens the issue of the underlying generalization pertaining to the presence of the same morphological marker across different derivations (e.g. clitic(6)). This investigation is continued in Chapter 6.

2. Theoretical Framework: the Theta System³

2.1 Conceptual Systems and the Interface Issues in the Theta System

Reinhart adopts the modular view of the cognitive systems of Chomsky and Fodor. Each system is a module – it operates independently from other systems. Consequently, information processed in any given system is, generally, not legible to the others. However, if cognitive systems were completely encapsulated – completely disconnected from each other – either by not being able to read some pieces of information from other systems or by not being able to pass on the information that is not legible to them, but is legible to other systems – humans would be denied the ability to think.

Constructing theories about reality (i.e. thinking) requires, in principle, two systems: the system of concepts and the inference system. However, while the inference system works on propositions, the system of concepts contains only abstract concepts. Thus, there must be a system that enables their interface – a system that enables them to “talk to each other”. In other words, there must be a system that can read the information from the system of concepts, and pass on legible pieces of information to the inference system. The system that generates propositions is the computational system – syntax. Thus, the computational system (henceforth: CS) enables the interface between the system of concepts and the inference system.

Although the CS generates propositions, it cannot generate them directly from abstract concepts. Abstract concepts need to be formally coded in order to be legible to the CS. Thus, for each set of systems (e.g. the system of concepts and the computational system), there must be some central system that gathers information that may be legible to other sets of systems (e.g. the computational system and inference system). The Theta System is the central system of concepts. It enables the interface between the system of concepts and the CS as well as the interface between the system of concepts and the inference system. Thus, outputs of the theta system are inputs of the SC. CS outputs, in turn, are representations further legible to the Inference, Context, and Sound systems.

The Theta System comprises the following components:

- a. Lexical entries (i.e. coded concepts)
- b. Operation on entries
- c. Merging instructions (linking/mapping rules)

Let us elaborate in a bit more detail on each of these components.

³ Cf. Reinhart (2002) and Reinhart and Siloni (2003).

2.2 The Structure of the Theta System

2.2.1 Coded Concepts

Feature clusters have an impact on both syntax and semantics. In order for the information from the system of concepts to be legible to the CS, it has to be formally coded. Interpretatively, feature clusters encode the basic causal relations. All theta roles are formally coded in terms of two binary features: +/-c (cause change) and +/-m (mental state).

Trivially, there are eight possible combinations.⁴ In what follows, we will see some theory-internal as well as theory external evidence that all the eight clusters are attested in natural language. The two binary features define eight feature clusters.⁵

(9a)	[+c+m]	Agent
(9b)	[+c-m]	Instrument
(9c)	[-c+m]	Experiencer
(9d)	[-c-m]	Theme
(9e)	[+c]	Cause
(9f)	[-c]	Recipient Goal/Benefactor
(9g)	[-m]	Subject Matter/Source
(9h)	[+m]	Sentient
(10)	<u>Notation</u>	
	[α]	= Feature cluster α .
	/ α	= Feature (and value) α . (E.g. the feature /+m occurs in the clusters [+c+m], [-c+m], and [+m])
	[/ α]	= A cluster one of whose features is / α . (E.g. [/-c])

⁴ Actually, this is not quite true. Logically, the system allows for the ninth – empty list [] - cluster. I will return to the empty list cluster in some detail in Chapter 4. For the purposes of our discussion here, I will gloss over the empty list.

⁵ The [+m] cluster has no label in the familiar list of theta roles. It is present on the grid of verbal concepts like *love*, *hate*, and *know*. Whereas the subjects of standard Experiencers have varying realizations, subjects of ‘love’-type verbs always generate externally. For the ease of exposure, I labeled it as Sentient.

clusters are [-c+m], [-c-m] and [-c].)

[+] = A cluster all of whose features have the value +.

[-] = A cluster all of whose features have the value -.

A couple of preliminary comments are due here. For ease of reference, the clusters in the Theta System (cf. (9)) are labeled by the role that they are most typically associated with. The labels on the right-hand side in (9) should not, however, be given theoretical weight. Namely, there is no one-to-one correspondence between the clusters and the traditional labels. Some feature clusters have varying thematic realizations. For instance, a unary [-m] encodes a role labeled Source as in the Hebrew example (11a), whereas in (11b), it encodes a role labeled Subject Matter. The examples in (11) are taken from Reinhart (2001).

(11a) ha-mishpaxa hitparnesa me-ha-sade_[-m]
The-family supported (itself) from-the-field

(11b) Max worries about his health_[-m]

Furthermore, notice that some clusters are fully specified, whereas others are underspecified. For instance, the feature cluster [+c] (i.e. Cause) is underspecified for /m which makes it consistent with Cause, Instrument, and Agent interpretations. The existence of underspecified and fully specified clusters is an important feature of the Theta System. It allows one to separate the set of [+c+m]-verbs like *eat* from the “[+c]-verbs like *break*. This distinction is real and important. For instance, as seen in (12), lexical operations are sensitive to it. Whereas verbs like *break* give rise to causative (12a) and unaccusative (12b) derivations, verbs like *eat* do not give rise to unaccusative ones (12d).

(12a) Max broke the window.

(12b) The window broke.

(12c) Max ate the desert.

(12d) *The desert ate.

Thus, the features +/-c and +/-m are the primitives of the system. Theta roles are not primitives. They are further decomposable in terms of +/-c and +/-m. Verbs (i.e. n-place predicates) are encoded in terms of feature clusters in order to be visible to both the syntax and semantics. For instance, the entry for *eat* is given in (13a) and the entry for *break* is given in (13b):

(13a) *eat*: ([+c+m], [-c-m])

(13b) *break*: ([+c], [-c-m])

Let us take a closer look at the features in question. Since ‘causality’ is not a logical relation, Reinhart uses Shen’s (1985) ‘perception-driven’ causal relations (i.e. ‘enable’, ‘cause’, and ‘motivate’) to explain the contribution of features to the inference system.⁶

“The relation ‘enable’ holds when one event is perceived as a necessary condition for the occurrence of the second. If Max entered the pool and then drowned, his entering the pool is a necessary condition for the drowning, but it is not a sufficient condition – many people enter swimming pools without drowning. The relation ‘cause’ holds when the first event is conceived as a sufficient condition for the second. Given two events of a glass falling followed immediately by its breaking, the causal perception is that the first is also a sufficient condition for the second, keeping in mind that this is a perception-driven, and not the logical concept of a sufficient condition. ‘Cause’ holds also when one event is both a necessary and a sufficient condition for another. The relation ‘motivate’ holds when either ‘enable’ or ‘cause’ hold, and, in addition, a mental state mediates the event (e.g. if Max wanted to eat, so he started to cook)” (Reinhart (2002): p.288).

It is important to stress that the relation ‘enable’ (i.e. necessary condition) is not enough to instantiate/license the feature /+c. Namely, all selected arguments can be viewed as necessary conditions for the event to take place. In order to be associated with a /+c feature, a participant in an event must be perceived as a sufficient condition for the event in question. In other words, the relation ‘cause’ must hold. Consequently, the presence of the feature /+c implies that the role is perceived as a sufficient condition. The verb will establish a causal relation with the argument whose theta-specification contains a /+c feature. What further follows from the system is that if the feature matrix of an argument contains a /-c feature, the causal status of the argument is determined– namely, it is identified as not being the cause.

Let me first show how the presence of /+c can be teased out. Though ‘cause’ is not a logical but a perception driven notion, sentences where one of the participants is perceived as the cause of an event or change in another participant are paraphrasable in terms of sentences that contain verbs like *cause* and *make*. The feature clusters associated with the participant *Peter* in (14a) and *The wind* in (15a) contain a /+c feature. As seen in, (14a) entails something like (14b) and (15a) entails something like (15b).

(14a) Peter_[+c+m] walked the dog_[-c+m]

⁶The pivotal importance of causality is recognized in many works on argument structure. Apart from Dowty (1991), the reader is referred to the extremely important work of Jackendoff (1990) and Grimshaw (1990).

- (14b) Peter made the dog walk.
- (15a) The wind_[+c] broke the glass_[-c-m]
- (15b) The wind caused the glass to break.

Notice further that the causal paraphrase is not just available in cases of explicit $/+c$ coding, but also in case of a $[-m]$ cluster (Subject Matter and Source) - where the causal status of the participant is left undetermined. The availability of causal paraphrase is predicted since the feature cluster $[-m]$ is, in principle, consistent with both a $[-m-c]$ (roughly, theme) interpretation and a $[-m+c]$ interpretation (roughly, cause, without sentience). On a $[-m+c]$ expansion of this cluster, one would expect the sentence to be paraphrasable with a sentence that contains *cause/make*. This prediction is borne out. Namely, *his health* in (16a) can be perceived as a cause of worry (i.e. $[-m+c]$ expansion in the Theta System). On $[-m+c]$ interpretations, (16b) is an adequate paraphrase of (16a). Causal paraphrase is available with other instantiations of a $[-m]$ cluster. Let us illustrate this with *benefit* (17a) whose second argument is argued to be Source (cf. Levin (1993) – $[-m]$ in the Theta System). As seen in (17b), this prediction is borne out.

- (16a) His_i health_[-m] worried every patient_i (Subject Matter)
- (16b) His health caused every patient to worry.
- (17a) He benefited from her death_[-m] (Source)
- (17b) Her death made/caused him (to) benefit.

This causal entailment is absent if a participant is associated with a cluster that contains a $/-c$ feature since the participant is not perceivable as a cause of an event or a change in another participant.

The $/+m$ feature is related to some sort of mental state of the participant present in the relation ‘motivate’. It follows that $/+m$ feature entails animacy. The opposite does not hold, however. If the feature-matrix of an argument contains a $/-m$ feature, it does not mean that it is automatically inanimate. What it means is that the mental state of the argument is irrelevant. Furthermore, $/+m$ feature never determines the causal status of an argument. In other words, if the theta-specification of an argument contains only $/+m$, the causal status of an argument is undetermined.

Let us further explore why $+/-c$ (i.e. cause change) and $+/-m$ (i.e. mental involvement/sentience) – and not some other semantic pieces of information – are of crucial importance for semantic purposes. To answer this question, I will briefly compare Dowty’s (1991) approach to the argument structure with that of Reinhart. I have chosen Dowty’s account since it is an elaborate semantic approach regarding

the issue of the thematic role-types. In Dowty's system, a two-place predicate like (18) has the entailments in (19) for its external argument.⁷

(18) x interrogates y

(19a) x does a volitional act

(19b) x intends this to be the kind of act named by the verb

(19c) x causes some event to take place involving y

(19d) x moves or changes externally (i.e. not just mentally)

The entailments in (19a) – (19c) boil down to +c and +m. Let us elaborate on this issue. In the Theta System, the common characteristics of *interrogate* (18) are captured by the grid in (20).

(20) *interrogate*: ([+c+m], [-c+m])

The entailment (c) in (19) directly corresponds to the /+c feature. Notice further that it is only +animate participants that can be assigned the external role of the verb in (20). Bearing in mind that only animate entities bear motivations/mental states, the external role is necessarily a /+m. As in Dowty's system, the interpretation of the features in the Theta System is context dependent. The feature /+m is interpreted as volitional/intentional in the presence of /+c, namely in the cluster [+c+m] - and as more verb-specific mental states, in the case of Experiencers and Sentients. This leads to entailments (a) and (b). Mental involvement/sentience is a prerequisite for volition and intention.

Thus, the properties (19a) – (19c) that Dowty defines as contributing properties of the external argument of *interrogate* are also entailed by the feature clusters. As we will see shortly (Section 2.2.5) coding these formally as in the Theta System enables the system also to answer directly to the linking problem: the UG Marking Procedures in the Theta System ensure that the [+c+m] role of *interrogate* merges externally, whereas the [-c+m] role merges internally. Furthermore, the Theta System gives straightforward predictions with respect to derivations a verb can give rise to. For instance, the Theta System predicts that just like in the case of *eat* in

⁷ The fourth entailment of Dowty is not captured in the Theta System. As noted by Dowty, "causation is almost always accompanied by movement" (Dowty (1991): 573). As for the verbs that Dowty identifies to have movement alone as the entailment for their argument (e.g. accidental movement as in *He accidentally fell*), movement is not captured and the role associated with *he* is [-c-m] in the Theta System.

(12c) – (12d), the verb in (20) disallows unaccusative derivation like (21b) but – as will be elaborated in Chapter 4 – allows for the middle derivation in (21c).⁸

(21a) Max_[+c+m] interrogated a desperate prisoner_[-c+m]

(21b) *A desperate prisoner_[-c+m] interrogated

(21c) Spies_[-c+m] do not interrogate easily

Finally - just as it was pointed out by Dowty that entailments of the predicate “should not be confused with what follows from any one sentence as a whole (e.g. entailments that may arise in part from NP meanings)” - it should be stressed that the same is true of the feature clusters in Reinhart’s system. “If *Mary slapped John* is true, and *John* is a normal human, then, slapping being the kind of action it is, we would conclude that John necessarily perceives something. But it does not follow that the direct object of slap is entailed to have the P-Agent property of sentience/perception, since we can also felicitously say *Mary slapped the table* or *Mary slapped the corpse*. However, the object of awaken does have the P-Agent entailment of sentience, as is revealed by the anomaly of **Mary awakened the table/the corpse*” (Dowty (1991): p. 572: fn. 16). The same is true of the Theta System. The internal argument of the verb *slap* is [-c-m] (18a), which, in turn means that the mental status of the participant associated with this cluster is not relevant. In contrast with the internal role of the agentive verb *slap*, the internal role of the agentive verb *interrogate* (20) is endowed with a /+m feature - [-c+m]. The participant assigned this role is mentally involved: minimally, it perceives the event in question. As Dowty (1991: p. 552) notes: *y either answers questions or, at least, hears them*. In the Theta System, the verb *awaken* (18b) has a [+c] cluster as the external argument since the interpretation of this cluster is consistent with both Agent and Cause as in *The thunder/Mary awakened Max*. The mental state of the participants assigned the internal i.e. [-c+m] role is relevant as indicated by the ungrammaticality of **The thunder/Mary awakened the bed*.

(22a) *slap*: ([+c+m], [-c-m])

(22b) *awaken*: ([+c], [-c+m])

The next question that might arise is whether all eight feature clusters are attested. The answer to this question is affirmative. To provide corroborating evidence, in what follows, I will compare the theta roles in the Theta System with the thematic relations of Parsons’ (1990) system. This comparison can also be viewed as a warming up exercise in getting acquainted with the system of feature clusters.

⁸ The definition of the set of concepts that allows transitive-unaccusative alternations is given in this Chapter, Section 2.2.4.

2.2.2 Theta Roles in the Theta System and Thematic Relations in Parsons' (1990) System

Parsons (1990) approach is a so-called 'neo-Davidsonian'⁹ ¹⁰ approach. On neo-Davidsonian analyses, theta roles constitute relations between a participant (i.e. an entity) and an event (i.e. *e*). The neo-Davidsonian analysis of the sentence *I ate a cake is*, roughly, as in (23).

(23) $\exists e$ [Eating(*e*) & Agent(*e*, I) & Patient (*e*, a cake)]

Recent works on the Theta System (cf. particularly Dimitriadis (2003) and Reinhart and Siloni (2003)) make use of the event semantics framework for the Theta System. In this study (cf. also Marelj (2002)), I will use the event semantics framework to further our understanding of the issues that are under consideration here. Event semantics analysis (be it Davidsonian or neo-Davidsonian) has been argued to be superior to other analysis since it allows one to capture the relatedness - the inference patterns – that exists between certain propositions. Sentences that contain modifiers are typically used to illustrate this. Such sentences are in certain relations with one another (24). Namely, the sentence (24a) entails both (24b) and (24c) but not *vice versa* and (24b) and (24c) each entail (24d).

(24a) Brutus stabbed Caesar in the back with a knife.

(24b) Brutus stabbed Caesar in the back.

(24c) Brutus stabbed Caesar with a knife.

(24d) Brutus stabbed Caesar. (Parsons (1990))

As seen in (25) – taken from Parsons (1990) - it is the event semantics analysis that accounts for these relations in a straightforward fashion.

(25a) $(\exists e)$ [Stabbing (*e*) & Agent (*e*, Brutus) & Theme (*e*, Caesar) & In (*e*, back) & With (*e*, knife)]

(25b) $(\exists e)$ [Stabbing (*e*) & Agent (*e*, Brutus) & Theme (*e*, Caesar) & In (*e*, back)]

⁹ The term refers to the type of event framework analysis that incorporates thematic roles into the Davidsonian analysis, since Davidson's (1967) analysis makes no reference to theta roles.

¹⁰ Cf. also Higginbotham (1985).

(25c) $(\exists e)$ [Stabbing (e) & Agent (e, Brutus) & Theme (e, Caesar) & With (e, knife)]

(25d) $(\exists e)$ [Stabbing (e) & Agent (e, Brutus) & Theme (e, Caesar)]

The goal of the Theta System is to capture the relatedness between various thematic forms of a given verb. At the core of the Theta System are the thematic grids i.e. sets of thematic roles and the operations that manipulate thematic grids. The Theta System is a theory that explores the correlation between various forms of the same verbal concept that give rise to different derivations. At the core of works like Parsons' (1990) is the intention to capture the inference pattern that holds between certain propositions. Take a look at the examples in (26). There is an entailment relation between a causative (26a) and the unaccusative (26b). From the sentence in (26a), any speaker of English can infer (26b).

(26a) Max broke the vase.

(26b) The vase broke.

In the Theta System, the relatedness of (26a) and (26b) is captured through the operation of Expletivization. Simply put, Expletivization takes a two-place entry *break* and reduces the [+c] role of this input. As an output, it gives an entry whose [+c] role is absent from both the syntax and semantics. It is this reduced entry that gives rise to derivations like (26b). In terms of semantic representations, on the other hand, the inference pattern can be captured in the utilizing the tools of event semantics frameworks like Parsons' (1990).¹¹ The logical form of (26a) is, roughly, (27a) and the logical form of (26b) is, roughly, (27b). As seen in (27b), the semantic representation of (26b) reflects the impact of Expletivization of the Theta System, as the Agent/Cause conjunct is completely absent from the logical form of (26b).¹²

(27a) $(\exists e)$ [Breaking (e) & Agent (e, Max) & Theme (e, the vase)]

¹¹ Parsons (1990) analysis of (26b) is, roughly, as given in (27b). With respect to causatives, Parsons proposes a dual-event analysis. In his framework, the semantic representation of (26a) would be as in (i).

(i) $(\exists e)$ [Agent (e, Max) & $(\exists e')$ [Breaking(e') & Theme (e', the vase) & CAUSE (e, e')]]

The differences between the two frameworks with respect to the treatment of causatives are not relevant for our discussion here as - on both accounts - the Agent-conjunct is absent from the semantics of the intransitive member of the pair (27b). The issue of the semantic representation of causatives, however, is highly intriguing and interesting and I leave it for further research.

¹² Tense is absent from the formalism in (27). Since it is not in the focus of our investigation, for ease of exposure, I use the 'simplified' formulas like (27) throughout the study.

(27b) $(\exists e)$ [Breaking (e) & Theme (e, the vase)]

I will return to the issue of lexical operations in the Theta System in some detail in 2.2.4. Here, I would like to point out an interesting area of compatibility between the Theta System and Parsons' framework (1990) that pertains to the thematic roles.

Neo-Davidsonian analyses (Carlson (1984), Parsons (1990)) incorporate thematic roles into the event semantics of Davidson (1967). In Parsons' (1990) system, not every relation, however, qualifies as a thematic relation. Parsons' criterion identifies as thematic roles only those relations that can project in subject, direct object, and indirect object positions (i.e. relations that can occur unmarked by an overt preposition). For Relations that always project in syntax with an overt preposition (e.g. *Through NY*), the logical form contains a relational formula "Preposition (*e*, *x*)" (e.g. *Through (e, NY)*).¹³ Such relations are not considered thematic relations. Six relations in (28) are considered as thematic relations in Parsons' (1990) system. Each of these roles relates an event (or a state) and a thing.¹⁴

- (28a) Agent
- (28b) Theme
- (28c) Goal
- (28d) Benefactives
- (28e) Instrument (=Performer)
- (28f) Experiencer

The first important thing to notice is that all of Parsons' (1990) thematic relations can be translated into the Theta System. Parsons' Agent - "a doer who is also responsible for what is done" - is encoded as a [+c+m] cluster in the Theta System. Parsons' Goals i.e. the indirect object paraphrasable with *to* and Benefactives i.e. the indirect object paraphrasable with *for* are encoded as [-c] roles in the Theta System.¹⁵ His role of Theme translates as [-c-m], while his role of Experiencer

¹³ Parsons' (1990) account is built up for English. The criterion is easily amendable to languages like French, for instance, where the DP-DP alternate does not exist, by treating the Dative *à* ("to") preposition as a purely syntactic device, as proposed by Kayne (1975), for instance. I will return to this issue in some detail in Chapter 2.

¹⁴ Again, I must warn the reader not to rely on the labels here. They should not be given any theoretical relevance. It is not the labels, but the paradigms they appear in that are relevant for Parsons (1990).

¹⁵ There are differences between *for*-Benefactors and *to*-Goals. I will not be exploring that issue here. Whereas the role of the Recipient Goal will be examined in some detail (cf. Chapters 2 and 4), I leave the issue of *for*-Benefactors for further research. It is important to say that though it has been recognized in the literature that Benefactors and Goals are not

translates as [+m] for two reasons. On the one hand, in Parsons' (1990) system, Experiencer is used for the subjects of sentences (i.e. syntactically, it merges externally). On the other hand, though it does not indicate agency, it indicates sentience in a broad sense. The use of instrument relation in Parsons' (1990) system includes both the object of instrumental *with* (29a) and the unmarked subject (29b). Parsons (1990) points out that the label Instrument is inadequate here. He notes that such a label is clearly wrong in (29c) since Instruments presuppose the existence of Agents. The problem does not arise in the Theta System. Namely, in the Theta System, the external role of verbs like *open* is encoded as a [+c] cluster. This cluster, in turn, is consistent with Agent, Cause and Instrument interpretations. Examples are from Parsons (1990).

(29a) John opened the door with a key.

(29b) The key opened the door.

(29c) The wind opened the door.

Consequently, all the thematic roles of Parsons (1990) can be straightforwardly translated into the Theta System. In addition, the Theta System provides additional feature clusters, which seem to be welcome in both syntactic and semantic terms. The two clusters in question are [-c+m] and [+c-m]. The [-c+m] role illustrates a 'true' Instrument. Examples (30) illustrate the point. Namely, unlike *open* (29), *cut* allows only for Agents and Instruments.¹⁶ It does not allow for Causes. Consequently, in the Theta System, the grid of *cut* includes the [+c+m] cluster and [-c+m] i.e. Instrument cluster.

(30a) Max cut the bread with a knife.

(30b) The knife cut the bread.

(30c) *The lighting cut the cord.

Let us now focus on (31). In the Theta System, *Max* in (31a) is assigned a [+m] role whereas *Max* in (31b) is assigned a [-c+m] role. Both the external role of *love* (31a) and the internal role of *worry* share the feature /+m (31b). They are sentient i.e. their mental state is relevant. The presence of this feature is very easy to test. Namely, only +animate participants can be assigned this role (cf. also Dowty (1991) for the same conclusion about the sentient-entailment). If the participant is not animate, the output is anomalous (31d) – (31e).

quite the same (cf. Goldberg (2000), for instance), some relatedness between the Benefactives and Recipient Goals is standardly assumed in the literature. In Jackendoff (1987), for instance, Possessional mode is assumed to denote both the Recipient Goal and Benefactives.

¹⁶ For analyses of "Manner Verbs" (e.g. *cut*), the reader is referred to Levin (1993), Levin and Rappaport (1995), and Reinhart (2002).

- (31a) Max loves Mary.
- (31b) Mary worries Max.
- (31c) Max worried (about the table).
- (31d) *The table loves Mary.
- (31e) *Mary worries the table.

Notice however, that the two arguments have different merging properties. Whereas the sentient argument of *love* obligatorily merges externally, the sentient argument of *worry* may merge internally (31b) and externally (31c).¹⁷ Their different syntactic behaviors follow from their different status in the Theta System. Namely, as we will see shortly, the UG rules in the Theta System ensure that [+] clusters (e.g. [+m]) merge obligatorily externally, whereas mixed clusters (e.g. [-c+m]) may merge externally or internally.

So far, we have encountered seven out of eight clusters from (9). What about the eighth cluster? As evident from (32)-(33), the roles that are encoded as [-m] in the Theta System do not have their counterparts in Parsons' (1990) system. It is important to note, however, that they pass Parsons' test for a thematic role. The roles of Subject Matter in (32) and Source in (33) count as a thematic role in Parsons' sense. The examples in (32) are taken from Reinhart (2002) and the examples in (33) are taken from Levin (1993).

- (32a) Every student worried about his health_[SUBJECT MATTER]
- (32b) His_i health_[SUBJECT MATTER] worried every student_i
- (33a) The middle class will profit from the new tax laws_[SOURCE]
- (33b) The new tax law_[SOURCE] will profit the middle class

Thus, we have seen that not only do all of Parsons' roles translate straightforwardly into the Theta System, but also that additional feature clusters available in the Theta System allow us to capture certain relations that share the semantically relevant features, but differ in terms of their syntactic behavior. Last but not least, the fact that all the roles encoded in the Theta System pattern with the facts covered by Parsons' (1990) criterion for thematic relations can also be viewed as a theory-external confirmation that the list of feature clusters in the Theta System follows

¹⁷ For an in-depth analysis of the experiencer-verbs, the reader is referred to Reinhart (2001), (2002). For the purposes of the presentation here, one need not be worried about the precise conditions under which the [-c+m] merges externally or internally.

from much more than the trivial fact that the two clusters give rise to eight different combinations.

2.2.3 Co-occurrences of Feature Clusters

Though they can be encoded on the same base-entry, not all clusters can be realized together. Restrictions on the type of clusters that can realize together pertain to unary clusters (i.e. [+c], [-c], [+m], [-m]) and are captured by the Cluster Distinctness Constraint in the system (34).

- (34) Cluster Distinctness Constraint
- a. Two indistinct theta-clusters cannot be both realized on the same predicate
 - b. Distinctness: two feature clusters α and β , are distinct iff
 - a. they share at least one feature, and
 - b. there is at least one feature or value which they do not share.

By (34), the following unary clusters are distinct: [-c] and [+c], on the one hand, and [+m] and [-m], on the other. The following examples illustrate this:

- (35a) The press biased the judge against the defendant.

bias: ([+c], [-c+m], [-c]) \rightarrow [+c] and [-c] are distinct

- (35b) This alienated her from her colleagues.

alienate: ([+c], [-c+m], [-c]) \rightarrow [+c] and [-c] are distinct

By (34), [+c] is indistinct from [-m] and [+m] is indistinct from [-c]. The Cluster Distinctness Constraint is motivated by the existence of the pattern illustrated in (36a) and (36b). The example (36a) is taken from Reinhart (2002), after Pesetsky (1995).

- (36a) */?The article angered Bill at the government.

anger: ([+c], [-c+m], [-m]) \rightarrow [+c] and [-m] are indistinct

- (36b) */?The doctor's letter worried Max about his health.

worry: ([+c], [-c+m], [-m]) \rightarrow [+c] and [-m] are indistinct

As standardly assumed, roles in the Theta System are considered as realized on the predicate either if they are semantically or syntactically active. In (37a) and (37b), the [+c] role is saturated – it is syntactically eliminated, but semantically active.¹⁸

(37a) */?Max was worried by the doctor about his health.

worry : ([+c], [-c+m], [-m]) → [+c] and [-m] are indistinct

(37b) The judge was biased by the press against the defendant.

bias : ([+c], [-c+m], [-c]) → [+c] and [-c] are not indistinct

As indicated for (37a) for instance, the unacceptability varies across speakers. Though none of the speakers judges examples like (37a) as perfectly acceptable, some speakers treat them as passing. This could indicate that the Cluster Distinctness Violation can be overridden. A possible explanation for this kind of variability of judgment is offered in Chapter 2.¹⁹

2.2.4 Operations

The existence of lexical operations in the Theta System is tied to one of the core principles of the Theta System, Lexicon Uniformity Hypothesis.

(38) Lexicon Uniformity Hypothesis

Each verb-concept corresponds to one lexical entry with one thematic structure. The various thematic forms of a given verb are derived by lexicon operations from one thematic structure.

The definition in (38) states that each verb is associated with one and only one thematic structure from which other thematic forms can be derived by lexicon operations. Thus, in terms of (38), the unaccusative forms in (39b) and (40b) are derived from the basic transitive forms in (39a) and (40a).

(39a) Peter melted the ice.

¹⁸ Though it is standardly assumed that the *by*-phrase in examples like (33) is an adjunct with respect to the verbal predicates, a semantic link between the saturated role and the adjunct phrase is also recognized.

¹⁹ It should be remembered that the restriction on the co-realization of all three arguments of the verbs covered by the Cluster Distinctness Constraint in the Theta System was originally noted by Pesetsky (1995). Pesetsky also notes that the restriction observed in (32) could be accounted for within a developed theory of theta roles decomposable into features (cf. Pesetsky (1995): p. 301: fn. 60). However, he does not pursue this idea. His account covers cases like (31) as well as cases like (32), which were also pointed out by him. Since the satisfactory presentation of Pesetsky's (1995) account would require the introduction of a completely different and elaborate machinery, the reader is referred to the source itself.

- (39b) The ice melted.
- (40a) Peter froze the ice.
- (40b) The ice froze.

Notice that no particular conceptual problem would arise if the verbs in (39a) and (40a) as well as those in (39b) and (40b) were listed as separate lexical entries. If the lexicon is a list of idiosyncrasies, there would be no problem in assuming that the verb realizations in (39a) and (40b) correspond to two distinct lexical entries. The fact that there is a transitive entry - (39a) and (40a) - for (39b) and (40b) in a particular language would then be treated as just a mere coincidence. Notice, however, that such an approach to the lexicon does not seem to be quite satisfactory. Recall that there is an entailment relation between the causative sentences in (39a) and (40a) and the unaccusative derivations in (39b) and (40b). Namely, from the sentence in (a), any speaker of English can infer the sentence in (b). Notice that there is a strong parallelism with respect to the relation between the causative-unaccusative pairs, on the one hand and the relation between the active-passive pairs in (41a) and (41b), on the other. Namely, there is no *a priori* reason to disclaim that both the entry giving rise to (41a) and the entry giving rise to (41b) are separately encoded in the lexicon.

- (41a) Peter broke the window.
- (41b) The window was broken by Peter.

Just like in the case of causative-unaccusative pairs, however, there is an entailment relation between (41a) and (41b). Consequently, the transitive and intransitive members of the pair in (41) are related by the operation of passivization. Following Chierchia (1989), Reinhart (2000) proposes that passivization saturates the external theta-role (i.e. existentially quantifies over the subject slot).²⁰ The parallelism should be clear. Just as passivization relates the transitive and the intransitive members of the pair in (41), Expletivization relates the transitive and the intransitive members of the pair in (39) and (40).

If one assumes the existence of (38), entries giving rise to sentences in (b) are related to entries that give rise to the sentences in (a) since they are derived from them. Consequently, in the light of the arguments presented here, it should not come as a surprise that on Chierchia's (1989), Reinhart's (1991) Reinhart and Siloni (2003), Levin and Rappaport's (1995) and Pesetsky's (1995) approach, for instance,

²⁰ Since it is not relevant for the discussion here, I am glossing over different proposals in the literature with respect to where and how passivization actually applies. The reader is referred to Bresnan (1982a), Culicover and Wilkins (1984), and Johnson, Baker, and Roberts (1989), to name just a few. Though various approaches differ even in so much as the level of the application of the operation, the important point to make is that in all approaches the relatedness between the active and the passive outputs is preserved.

causative and unaccusative outputs are related with one of them being the basic form and the other one being the derived form.²¹ The assumption of the Theta System in (38) allows us to explain why there is the entailment relation between the sentences in (a) and (b). Finally, one might come across thematic forms of what appears to be one verb that are impossible to relate through operations. If that turns out to be the case, the definition in (38) leaves the option that these are two distinct verbal concepts - accidentally or historically related.

In order for (38) to be a feasible principle, however, the set of lexical operations has to be fully defined. There is a limited set of lexical operations available in the Theta System. There are three types of operations:²²

- a. Reduction (e.g. Expletivization)
- b. Saturation (e.g. Passive)
- c. Entry-changing (e.g. Lexical Causativization)

2.2.4.1 Reduction Operations

Reduction operations reduce the number of roles of the verbal entry. This statement needs a bit of clarification. There are two types of Reductions in the Theta System: Reflexivization and Expletivization. Following Chierchia (1989), Reinhart (1991), (2002) assumes that one-place unaccusatives (i.e. examples in (39b) and (40b)) are derived from two-place predicates (i.e. (39a) and (40a)). In the Theta System, the operation that allows for the derivation of thematic forms in (39b) and (40b) from base thematic forms in (39a) and (40a) is Expletivization. In the case of Expletivization, reduction is the elimination function. Namely, the external role is completely eliminated from both the syntax and semantics.

- (42) Expletivization: Reduction of an external [+c] role (semantically null function)
- a. $V_{acc}(\theta_{1[+c]}\theta_2) \rightarrow R_e V(\theta_2)$
 - b. $R_e(V)(\theta_2) = V(\theta_2)$

The semantic effects of the external role reduction are different from the semantic effect of the internal role reduction (Reflexivization).²³ The argument reduced by

²¹ I am abstracting away from the differences between particular approaches. For instance, Pesetsky (1995) proposes that the unaccusative forms are the basic ones and the causative forms are the derived by the application of Causativization. The reader is referred to Reinhart (2000) regarding the arguments against such an approach.

²² It is important to stress that the operations presented here pertain only to the verb-category. Category-shifting operations (involving cases such as adjectival passives, and nominalizations, for instance) are not covered in the Theta System.

Reflexivization is still present in the interpretation, while Expletivization eliminates the argument altogether. R_e can be viewed as a semantically null function. The reduced entry denotes just the property corresponding to a one-place verb with the remaining argument. In the case of Reflexivization, Reinhart and Siloni (2003) argue that reduction is actually the identification function. In effect, Reflexivization unifies or bundles the external theta-role (θ_1) and an internal theta-role (θ_2). The role targeted by Reflexivization or Bundling is semantically present and linked to the external theta-role.

2.2.4.2 Saturation Operations

The label ‘saturation’ can be equated with the label ‘variable binding’. In the case of saturation, a variable is bound by some operation (e.g. \exists or Gen). Saturation operations make the theta-role unavailable for syntactic purposes. The operation saturates the role – it assigns the role either in the lexicon or in the syntax (i.e. LF). Saturation is taken to be much less restrictive than the Reduction operations. Saturation can apply to either the external or the internal argument of the verb. The most obvious instance of Saturation is passivization. Passive saturation closes existentially the external argument of a verb.²⁴ As a consequence, a role is present semantically, but is syntactically unrealized (43).

(43a) $\text{Max}_{[-c-m]}$ was washed

(43b) $\exists e \exists x$ [washing (e) & [+c+m] (e, x) & [-c-m] (e, Max)]

2.2.4.3 Entry-Changing Operations

Entry-changing operations have radically different properties from both the Reduction and the Saturation operations. The representative of the Entry-changing operations in the Theta System is Lexical Causativization. Lexical Causativization is exemplified in (44) - (45). The English example in (44b) is taken from Levin and Rappaport (1994). The Hebrew examples in (45) are taken from Reinhart (2000).

(44a) The dog walked. \rightarrow She walked the dog.

²³ Reflexivization and reflexive verbs here should not be misunderstood to refer to a construction with a reflexive argumental object - SELF-anaphor (Reinhart & Reuland (1993)) through syntactic binding in (i) but to (ii).

(i) Max washed himself.

(ii) Max washed.

²⁴ Cf. also Chierchia (1989)

- (44b) The horse jumped. → The rider jumped the horse over the fence
- (45a) Danny axal bananot. → aba heexil et Danny bananot
 Danny ate bananas. → Daddy fed (acc) Danny bananas
- (45b) Danny lavash meil. → aba hilbish et Danny meil.
 Danny wore (a) coat → Daddy dressed (acc) Danny a coat.

Lexical causativization involves a change in the original thematic structure, where the crucial difference occurs with respect to the external role. Lexical causativization is a complex operation as it applies in two steps (46). In Chapter 2, we will revisit the issue of the Lexical Causativization to explain why the two-step operation is needed in cases of verbs like (44)-(45).

- (46) Lexical Causativization
- a. Decausativize: Change a /+c feature to a /-c feature.
walk: ([+c+m]) → *walk*: ([-c+m])
- b. Agentivize: Add an agent role.
*walk*₂: ([-c+m]) → *walk*: ([+c+m], [-c+m])

2.2.5 Mapping (Linking) Instructions

Mapping instructions regulate the linking between semantic categories (i.e. thematic roles like Agent) and syntactic positions (e.g. Subject). A systematic linking pattern is observed between certain semantic and syntactic categories. For instance, the role of Agent is systematically associated with the highest position in the clause. This view stems from Jackendoff (1972), where one of the crucial claims is that various grammatical processes behave in accordance with a thematic hierarchy. For instance, there can be rules referring to Agents. Consequently, if linking is predictable, it should not be specified individually for each verb, but it should be governed by a general rule. Indeed, the prevailing view in the literature (cf. Grimshaw (1979), (1981), Pesetsky (1982), (1995), and Chomsky (1986), Reinhart (1996), for instance) is that linking should be deducible from the verb's semantic selection facilitated by the principles of UG that map semantic categories onto syntactic categories. Many Linking Theories have been proposed in the literature (cf. Williams (1981), Perlmutter and Postal (1984), Baker (1988a), Grimshaw (1990), and Pesetsky (1995)). Some of the theories propose universal linking rules; others propose elaborate (role-specific) universal thematic hierarchies.²⁵ Not all the linking rules are as trivial as the linking between Agents and Subjects. The merging patterns of Experiencers (in Experiencing – *worry*-type verbs) and Instruments (in *cut*-type verbs) are a challenging issue for linking theories (cf. Pesetsky (1995) and Reinhart (2001) for Experiencer-mapping and Reinhart (2001) for Instrument-mapping).

²⁵ For an in-depth overview of various mapping theories, the reader is referred to van Hout (1996).

In the Theta System, linking instructions are explained in terms of s-selection (i.e. the type of arguments that are encoded on the verb's grid) and the following set of UG rules and generalizations:

(47) Notation:

- [α] = Feature cluster α .
 / α = Feature (and value) α . (E.g. the feature /+m occurs in the clusters [+c+m], [-c+m], and [+m])
 [α] = A cluster one of whose features is / α . (E.g. [-c] clusters are [-c+m], [-c-m] and [-c].)
 [+] = A cluster all of whose features have the value +.
 [-] = A cluster all of whose features have the value -.

(48) Marking Procedures

Given an n-place verb-entry, $n > 1$

- a. Mark a [-] cluster with index 2²⁶
- b. Mark a [+] cluster with index 1
- c. If the entry includes both a [+] cluster and a fully specified / α , /-c], mark the verb with the ACC feature.

(49) Cluster Classes

Plus-clusters are [+c+m], [+c], [+m], minus-clusters are [-c-m], [-c], [-m]. A cluster can also have a mixed value. Mixed-clusters are Experiencers [-c+m] and Instruments [+c-m].

Unary [-] clusters typically require a preposition for their thematic specification. The syntactic correlate is that a DP realizing such clusters cannot check accusative case. A good example of such a cluster is a dative PP.

(50) CS Merging Instructions

When nothing rules this out, merge externally.
 An argument realizing a cluster marked 2 merges internally; an argument with a cluster marked 1 merges externally.

The examples in (51), (52), and (53) demonstrate the way rules apply to different types of verbal entries. It should be stressed that the derivations in (51), (52), and

²⁶ Reinhart follows the convention of Williams' (1981) notation where the index 1 marks the external role and the index 2 marks the internal role.

(53) are just a sample that illustrates the elegance and power of the Theta System. For instance, the rule in (50) is sufficient to account for the syntactic differences between an unergative in (52) and an unaccusative in (53).

- (51) Transitive Derivations
- a. Max ate an apple.
 - b. Base entry: *eat* ([+c+m], [-c-m])
 - c. Marking: *eat*_{acc} ([+c+m]₁, [-c-m]₂)
 - d. Merging: By (50b), ([+c+m]₁) merges externally, [-c-m]₂ merges internally
- (52) Unergative Derivations
- a. The bell buzzed.
 - b. Base entry: *buzz* ([-c-m])
 - c. Marking: inapplicable (one place entry)
 - d. Merging: External – by (50a)
- (53) Unaccusative Derivations
- a. The vase broke.
 - b. Base entry: *break* ([+c], [-c-m])
 - c. Marking: *break*_{acc} ([+c]₁, [-c-m]₂)
 - d. Expletivization applies to the marked entry, giving rise to (*break* ([-c-m]₂))
 - e. Merging: Internal, by (50b)

During the derivation, some pieces of the outputs of the Theta System are erased, whereas others are preserved. Merging indices and the ACC feature are erased in the derivation, since they are only legible to CS, and not to the inference. The theta-features, on the other hand, are legible to the semantics since they encode the basic causal relations expressed by the verbal concept. Consequently, they are not erased in the CS, but are passed on through the derivation.

2.2.6 The level of the Application of Operations

There are certain generalizations regarding the level at which the operations of the Theta System apply. The generalization in (54) captures the first division of operations into pre-marking and post-marking operations.

- (54) Relevant Generalizations of Lexical Operations
 Reduction and Saturation operations apply to the marked entry.
 Entry-changing operations apply to the verbal concept – before marking.

By (54), Lexical Causativization is radically different from Reduction and Saturation operations. Let us see how this can be justified. Reduction and Saturation operations eliminate a role they apply to either from syntax or from both syntax and semantics. Crucially, the kind of manipulation they involve does not change the value of the cluster. This property of Reduction and Saturation operations has an important implication for the marking procedure. Recall that marking procedure assigns the indices based on the value of the thematic roles. Since the Reduction and Saturation operations do not manipulate the value of the thematic roles, the order of marking is the same for both the base-entry and the derived entry. Consequently, Reduction and Saturation operations apply after marking. Let us illustrate this. Take a base entry like *awaken* in (55). The entry in (55a) can undergo Expletivization (55c) – a reduction operation - as well as passivization (55d) – a saturation operation.

- (55a) *awaken*: ([+c] [-c+m])
 (55b) *awaken_{acc}*: ([+c]₁ [-c+m]₂)
 (55c) Expletivization: *awaken* ([-c-m]₂)
 (55d) Saturation: $\exists x$ (*awaken*(x, [-c-m]₂)
 (55e) Mary_i awakened t_i
 (55f) Mary_i was awakened t_i

Both of these operations apply on the marked entry in (55b). The output of the operation of Expletivization will be the reduced entry in (55c). The passive output is given in (55d). Although the semantic properties of unaccusative and passive derivations are quite different, syntactically, they will both give rise to unaccusative derivations - (55e) and (55f), respectively. Since there is no manipulation of the value, the index is untouched, and hence, the realized argument must merge internally. The sole syntactic argument *Mary* merges in the same way it would if no

operation were to apply on the base entry. Since they do not manipulate the content of the clusters, they apply after marking.

The application of the Lexical Causativization, on the other hand, affects the value of the feature clusters. The change of the value is a by-product of the manipulation of the content of the thematic roles of the base-verb. In (56a), the sole argument of the input-verb (associated with the participant *the dog*) obligatorily merges externally. In the derived entry, the same participant is associated with a mixed cluster that merges internally in (56b). Since the linking is not the same for the base and the derived entry, the entry-changing operations are expected to apply prior to marking.

(56a) The dog_[+c+m] walked

(56b) She_[+c+m] walked the dog_[-c+m]

A further classification of lexical operation pertains to whether they can be parameterized or whether they cannot be parameterized. The parameter is given in (57).

(57) Lexicon-Syntax Parameter
UG arity operations can apply in the lexicon or in syntax (LF)

Let us see how the parameter applies to the lexical operation in the Theta System. Expletivization is not subject to a parameter. Cross-linguistically, Expletivization applies in the lexicon since the type of manipulation it involves cannot apply in the syntax (LF). Deleting constituents either during the derivation, or from the formulas that the syntactic derivations are mapped into, is considered to be prohibited. Let us explain this in a bit more detail. Let us first remind ourselves of how Expletivization operates. As its input, Expletivization takes a verbal concept with a [+c] role (i.e. the entry giving rise to (58a), for instance). Recall that deriving the unaccusative entry from the causative one is not particular to the Theta System. Chierchia (1989) points out that if the basic entry were unaccusative and the transitive entry a derived one, it would be difficult to derive why the sole syntactic argument of (58c), for instance, merges internally. The gravity of Chierchia's question becomes obvious if one recalls that there are basic intransitive entries like *sparkle* and *glitter* whose sole argument Theme, indeed, merges externally (cf. Levin and Rappaport (1995)). Consequently, if the unaccusative-*break* were the basic form, then one would expect its sole Theme argument to merge externally.

(58a) Peter broke the window with a hammer.

(58b) The window was broken with a hammer.

(58c) The window broke *with a hammer

In the Theta System - in order to derive the unaccusative-*break* (i.e. the entry giving rise to (58b)) - Expletivization fully eliminates a [+c] role. That the external role is completely absent from the syntax and semantics can be shown by the inability of the unaccusative derivation to license Instruments.²⁷ Instrument licensing is one of the tests for the presence of the explicit (i.e. syntactically present) or implicit (semantically present) role. As seen in (58a) and (58b), the Instrument is licensed either by an implicit or explicit Agent. As seen in (58c), the unaccusative derivation has no syntactically or semantically present external role that would license the presence of the Instrument.

Control of PRO in the adjunct clauses is yet another test frequently used in the literature to determine the presence/absence of the implicit argument (cf. Chierchia (1989) for instance).²⁸ Just like with the Instrument test, such control is available in the passive derivation, where the Agent is semantically present (59a), but not in the unaccusative derivation, where the Agent is completely eliminated (59b).

(59a) The boat was sunk [PRO to collect the insurance]

(59b) *The boat sunk [PRO to collect the insurance]

Having established the properties of Expletivization, let us now turn to the question of whether Expletivization can apply in the syntax. The answer to this question is negative. In the minimalist program (cf. Chomsky (1995), Uriagareka (2000), for instance) at the level of syntax, the elimination is illegitimate due to structural conservation. The Law of Conservation (60) is one of the fundamental notions in the minimalist program.

- (60) Law of Conservation
 a. No operation can eliminate derivational terms
 b. All interpretable features that are present in the lexical array are present at LF.

Terms are the building blocks of linguistic representation. All syntactic objects are terms.

- (61) Syntactic Object
 σ is a syntactic object if it is
 a. A lexical item or the set of formal features of a lexical term, or

²⁷ That there is no implicit external role in unaccusatives is a standardly assumed claim (cf. Keyser and Roeper (1984), Fellbaum (1986), Fagan (1992), to name just a few).

²⁸ The reader is, of course, aware that semantic control can be accounted for in ways that do not make any reference to the presence of the implicit external role (cf. Lasnik (1984), and Williams (1985), for instance). I will return to the issue of semantic control in more detail in Chapter 3.

- b. The set $K = \{\underline{\gamma}, \{\alpha, \beta\}\}$ or $K = \{<= \{<\underline{\gamma}, \underline{\gamma}>, \{\alpha, \beta\}\}$ such that α and β are syntactic objects and $\underline{\gamma}$, or $<\underline{\gamma}, \underline{\gamma}>$ is the label of K .

For example, by (61), the expletive *there* that contains only formal features as well as a complex syntactic objects like $K = \{hate_x, \{hate, it\}\}$ - formed by the operation Merge (i.e. by merging *hate* and *it*) - are terms. By (60), only uninterpretable nonterms can be eliminated in the course of the derivation. In order to reach LF, CS has to use up the items in the array (numeration) and it cannot simply erase the items from the numeration. The initial array is completely mapped to LF (inclusiveness). Otherwise, the derivation is cancelled. Eliminating a syntactic object - in this case it is a feature of a verb - from the structure leads to derivational cancellation. Since derivations like (58c) are not cancelled, Expletivization takes place prior to syntactic derivations - in the lexicon. Expletivization can only take place in the lexicon since the rules pertaining to the lexicon are such that they allow elimination to take place. It follows then that Expletivization is not subject to a parameter. Cross-linguistically, it always applies in the lexicon.

As argued by Reinhart and Siloni (2003), Reflexivization or Bundling, on the other hand, applies in certain languages in syntax whereas in others it applies in the lexicon. Reflexivization is an identification function. Identification is implemented by associating two theta roles with a single argument. Bundling in the lexicon unifies two roles by forming a new complex role (62a). After the application of the operation, the derived entry has one complex theta-role to assign. Syntax has no means of manipulating two feature clusters to create a complex theta-role. However, the effect of bundling can be obtained in the syntax. Two roles are unified by being assigned to the same argument upon merge (62b). Bundling applies upon merge of the external argument with the unassigned theta-role (θ_k) bundled with θ_i so that both end up assigned to the same argument.

$$(62a) \quad V \theta_1 \theta_2 \rightarrow V [\theta \theta]_1$$

$$(62b) \quad \text{External argument } [\theta_i] + [\theta_k]$$

Thus, the kind of manipulation Reflexivization involves can take place in either the lexicon or in the syntax. Consequently, Bundling can take place in the lexicon or in the syntax (LF). Since the nature of the two components (i.e. the lexicon and the syntax) is different, the specific devices they have at their disposal are different.

Causativization presents an interesting case with respect to the parameterization. Causativization can take place in the lexicon or in the syntax. Some languages utilize only a syntactic causativization operation (e.g. French and Japanese); others utilize both lexicon and syntactic causativization (e.g. English). It is a well-known fact in the literature that Causativization exhibits different properties when it applies in the syntax and when it applies in the lexicon. The output of Syntactic

Causativization in (63) is arrived at by putting two predicates together. The causative verb *make* in (63) comes with its own argument structure (cf. Baker (1988a), Alsina (1992), and Levin and Rappaport (1994)).

(63) Peter makes me laugh.

Secondly, Syntactic Causativization (63) is far less restricted than Lexicon Causativization (64).

(64) *Peter laughs me.

Finally, depending on whether it was created in the lexicon or in the syntax, a verb derived by the application of causativization will exhibit different behavior with respect to the types of roles that are allowed to realize on its grid. Reinhart's (2000) general diagnostics for Lexical Causativization across languages is the following:

(65) Lexical causativization adds a [+c+m] role (Agent) to a verbal entry.

Thus, verbs derived by Lexical Causativization allow only an Agent [+c+m], rather than any [+c] role to be realized. As shown in (61), these derived verbs cannot occur with a cause or with instrument subjects. Examples are taken from Reinhart (2000).

(66) Max/*The leash/*Hunger walked the dog to his plate.

This restriction does not seem to follow from any lexical or semantic property of the verb. For instance, there is nothing semantically or lexically odd in 'hunger being a cause for the dog's movement towards the plate'. Yet, this cannot be expressed with Lexical Causativization. On the other hand, no role-restriction of this type is observed with Syntactic Causativization. As shown in example (67), syntactic causativization allows Causes as readily as Agents to realize externally. Thus, syntactic causativization selects a [+c] role.

(67) Hunger made the dog walk to his plate.

Since they have different selectional restrictions, Lexical Causativization and Syntactic Causativization are not quite semantically identical. The difference between the two types of Causativization can, in turn, be viewed as a reflex of the fact that Lexicon Causativization involves the kind of manipulation of the verbal entry that is prohibited for Syntactic Causativization.

The presentation of the Theta System here is concise and extensive at the same time. On the one hand, the reader should be reminded that the Theta System is an extensive project on the concepts interface that has been developing since 1991. Space prevents us from presenting many of the important findings here. Nonetheless, one should bear in mind that the inventory of rules and operations

presented here is the complete ‘core’ inventory of the Theta System. This highly limited set of rules and operations is a sufficient apparatus that provides an account for a myriad of long-standing linguistic puzzles like reflexive, unaccusatives, and experiencing verbs.

3. A Closer Look at the Lexicon

Having overviewed the Theta System, there is one fundamental issue that needs to be addressed – the structure of the lexicon in the Theta System. The approach of the Theta System is clearly lexicalist. The lexicon contains coded concepts and accommodates for certain rule-governed processes. Recall, for instance, that Expletivization is accommodated in the lexicon – it obligatorily applies prior to syntactic derivations. Arity operations are derivational processes since they operate on basic thematic forms to give rise to derived thematic forms. For ease of reference, I will refer to such a conception of lexicon as an “active” lexicon (cf. Siloni (2003)). The existence of the “active” lexicon has been challenged in the literature (Marantz (1997), (2000) and Borer (2000)). On the radical nonlexicalist view, the lexicon is reduced to a list or Encyclopedia of grammatically unmarked items (Borer (2000)) or roots (Marantz (1997), (2000)) that the syntactic component combines into words and phrases. Namely, on a radical nonlexicalist view, all composition is syntactic. All inflectional and derivational processes are syntactic in nature. Neither *destroyed* nor *destruction*, for instance, is derived in the lexicon. Only the root $\sqrt{\text{DESTROY}}$ is to be found in the lexicon. The same mechanism that is responsible for the building of the internal structure of sentence is responsible for creating the internal structure of words.

The lively discussion centered on the question of whether an active lexicon should be a part of the language faculty or not has been particularly prominent in the last couple of years. The reader should, however, be aware that the lexicalist versus non-lexicalist debate has been around from the very beginning of generative linguistics. During the 50’s and 60’s syntactic transformations were responsible for everything. Transformations were performing both the inflectional and derivational tasks. The lexicalist hypothesis – put forth by Chomsky (1970) – gives inflectional and derivational morphology different status in the system. Namely, whereas transformations were still responsible for inflectional tasks, derivational tasks were accommodated in the lexicon. The idiosyncrasy of derivations and the lack of idiosyncrasy of inflection motivated the split. The derivational morphology was argued to be unpredictable, whereas the inflectional one was argued to be predictable. Namely, not just that all verbs do not nominalize, but those that do – do it in a variety of ways. All verbs, on the other hand, have a past tense form. Furthermore, the semantics of derivational morphology is not transparent – it is not predictable. The semantics of inflectional morphology, on the other hand, is completely transparent. For instance, if one knows the meaning of a verb, one knows the meaning of its past tense. In the Minimalist Program (cf. Chomsky (1993), (1995)), the lexicon accommodates for both derivational and inflectional

morphology. On the strict lexicalist view, words are pulled out from the lexicon ‘ready-made’ – in their final shape. Consequently, both *destruction* and *destroyed* are pulled out from the lexicon.

Since the issue that is relevant to the Theta System is that the lexicon contains operations on the thematic grids, the task of this section is to present the arguments that corroborate the validity of the hypothesis that the active lexicon is a part of the language faculty.

Siloni (2003) shows that cross-linguistic variation with respect to certain arity operations follows straightforwardly under the Lexicon-Syntax Parameter (53). The Lexicon-Syntax Parameter, in turn, presupposes the existence of the active lexicon. Siloni shows that the cross-linguistic variation is fully explicable if certain arity operations apply in certain languages in the lexicon, whereas in others in the syntax. This cross-linguistic variation is expected since the lexicon and the syntax abide by different rules and accommodate different operations. The lexicon contains “manipulative” operations, whereas the syntax does not. The lexicon accommodates for operations that can, for instance, eliminate feature clusters of a predicate. The syntactic component contains operations that can put or move something of the right type into the position of the right type. For instance, the syntactic component has means of putting together distinct predicates (cf. Reuland & Reinhart (1993) and the references there). Complex predicates (cf. (53)) cannot be formed in the lexicon since the lexicon does not contain syntactic operations. Parameterizable arity operations are subject to the rules and constraints at a given level.

Recall that - by its properties - Reflexivization applies either in the lexicon or in the syntax.²⁹ Depending, however, on whether the reflexive output is derived in the lexicon or in the syntax, reflexive verbs will behave differently. Siloni shows that the cross-linguistic variation with respect to Reflexivization can be fully accounted for if Reflexivization applies in the lexicon in some languages and in the syntax in others. For instance, the assumption of the Theta System is that Reflexivization applies in the syntax in French. Since the syntax can put together distinct predicates, Siloni expects French to allow ECM reflexives. As seen in (68a), this prediction is born out. Notice that the parallel behavior can be observed with the SC ECM reflexive in (68b).

- (68a) Jean se considère [intelligent]
 Jean SE considers intelligent (Siloni (2003))
- (68b) Jovan se smatra [intelligentnim]
 Jovan SE considers intelligent

²⁹ The reader is referred to Siloni (2003) for the elaborate presentation. Only a part of her argumentation – the part dealing with Reflexivization – is presented here.

Siloni predicts that ECM reflexives will be impossible in languages where Reflexivization applies in the lexicon, since the lexicon component has no syntactic rules that would allow putting two distinct predicates together.³⁰ In the Theta System, Reflexivization applies in the lexicon in Hebrew and English. Since they are lexicon languages, ECM reflexives should be unavailable in them. As seen in the Hebrew example in (69a) and the English example in (69b), this prediction is borne out. Either in the lexicon or in the syntax, Reflexivization/Bundling involves unification of two theta roles. In ECM constructions, the two relevant theta roles are the roles of two distinct predicates. Since the lexicon does not contain the structure-building devices, only the theta roles of the same predicate can be bundled. In the syntax languages, the two distinct predicates establish their relation in the syntax; hence the two relevant roles can be bundled (68).

(69a) *dan mitxašev inteligenti.
dan self-considers intelligent (Siloni (2003))

(69b) *John considers intelligent.

Another distinction between the behavior of reflexive outputs in the French-type languages and the Hebrew-type languages that is straightforwardly explained in terms of the Lexicon-Syntax Parameter is found in the domain of nominalizations. With respect to nominalization, there are two phenomena that Siloni investigates. On the one hand, unlike in French-type languages, reflexive nominals with reflexive morphology occur in Hebrew-type languages (70).

(70a) hitraxcut
self-washing

(70b) histarkut
self-combing (Siloni (2003))

Siloni argues that the lack of reflexive nominals in French cannot be sufficiently explained in purely morphological terms. Namely, it cannot be explained in terms of *se* (i.e. a morphological marker of Reflexivization in French) being incompatible with nominal morphology. Namely, it is not just that the reflexive nominals marked with reflexive morphology are absent, it is reflexive nominalization as such that is absent from French-type languages. To fully understand the importance of this empirical finding, one should be aware that the unaccusative nominalizations exist in French-type languages (71b). The examples in (71) are from Siloni (2003).

³⁰ The existence of ECM reflexives in Dutch (e.g. *Jan hoorde zich zingen*) might raise a potential problem for this analysis. Namely, though Dutch reflexives are argued to form in the lexicon, Dutch allows ECM reflexives. The reader should be aware that Dutch ECM reflexives and French ECM reflexives (68a) are treated as only superficially analogous (cf. Reinhart and Siloni (2003), and Reuland (to appear)). In short, unlike the instance in (68), the Dutch ECM constructions are analyzed as involving a simplex anaphor *zich* that is syntactically bound by a non-local antecedent.

- (71a) Le pantalon s' est rétréci au lavage.
The pants shrank in +the washing
(Unaccusative)
- (71b) le rétrécissement du pantalon au lavage
the shrinking of the pants in+the washing
(Nominalization)

Recall that the unaccusatives like (71a) are derived by the application of Expletivization. Recall also that due to its properties, Expletivization cannot apply in the syntax. If Expletivization cross-linguistically applies in the lexicon, one would expect it to be able to feed other derivational operations that apply in the lexicon. Assuming that nominalization is an operation that applies in the lexicon, Expletivization (a lexicon operation) can feed it, but Reflexivization (a syntactic operation in French) cannot.

The second argument that Siloni points out comes from the Agent nominals. Unlike in French (72b), Agent nominals in English (72a) allow for the reflexive interpretation. In English-type languages, Reflexivization applies in the lexicon, and consequently, reflexive verbs can feed the nominalization operation. In French-type languages, reflexive verbs are formed in the syntax, so they cannot feed the nominalization operation.

- (72a) She dresses slowly because she is an elegant dresser.
- (72b) Jean est un excellent habilleur/maquilleur.
Jean is an excellent dresser/make-up-er (of others only)
- (Siloni (2003))

To summarize, as shown by Siloni (2003), under the Lexicon-Syntax Hypothesis, one can account for cross-linguistic variation with respect to the behavior of reflexives. The lexicon and the syntax are different in nature. They accommodate different operations and abide by different rules. The lexicon component and the syntactic component are nonredundant systems. Further evidence for the existence of the active lexicon will be given in Chapter 4, where middles in languages like Dutch and English are tackled.

Chapter 2

Feature Clusters

1. Introduction

The goal of this Chapter is to address certain issues that pertain to the properties of feature clusters and the rules that govern their co-occurrences. Feature clusters come as fully specified (e.g. [+c+m] associated with *people* in (1a)) and ‘underspecified’ (e.g. [-c] associated with *acquaintances* in (1a)). Such partitioning of feature clusters raises the question of the implications of notions such as ‘underspecified’ and ‘fully specified’ in syntactic and semantic terms. The sharp contrast between the grammaticality of the middle derivation in (1b) and ungrammaticality of (1c) takes the investigation into rules that regulate the co-realization of feature clusters of the base-verb (1a). Another issue that is discussed in this Chapter is the status of arguments versus adjuncts in the Theta System. This topic is also of importance for tackling the issue of middles in Chapter 4 since – intriguingly enough – whereas (1c) is not an acceptable middle derivation in English, (1d) is.

- (1a) People_[+c+m] don't send expensive presents to acquaintances_[-c]
- (1b) Expensive presents send easily.
- (1c) *Expensive presents send acquaintances easily.
- (1d) Expensive presents do not send easily to foreign countries.

In section 2 of this Chapter, the properties of feature clusters with respect to syntax and semantics are examined. Section 3 sets the background for Section 4 by addressing the issue of conditions on thematic roles that have been assumed in the literature. Section 4 deals with conditions that govern the co-occurrences of feature clusters in the Theta System. The discussion in section 4 will necessitate the discussion of adjunct versus argument status of certain phrases. This issue is addressed in Section 5. Finally, in the light of the findings presented in Section 4, Section 6 views the Cluster Distinctness Constraint through a slightly different prism than standardly assumed. Section 7 sums up the major points of this Chapter.

2. The Input of Feature clusters to the Syntax and the Semantics

Recall that verbs in the Theta System are coded in terms of their theta roles. Theta roles are formally coded in terms of two binary features: +/-c (cause change) and +/-m (mental state). The system operates with eight feature clusters that fall into two groups.³¹ Four of them are fully specified (i.e. [+c+m], [+c-m], [-c+m], and [-c-m]) and four of them are underspecified (i.e. [+c], [+m], [-c], and [-m]). Recall that the information carried by the feature clusters is relevant for both syntax and semantics. In what follows, I will explore the impact of feature clusters, paying particular attention to what the notions ‘fully specified’ and ‘underspecified’ mean in syntactic and semantic terms.

2.1 The Input of Feature clusters to Syntax

Recall further that in order to be legible to the CS, thematic roles in the ‘Theta System’ are formally coded. Notice that the requirement for the formal coding of θ -roles is of absolute necessity for the conception of the CS in Generative Grammar. One of the core claims in the work of Generative Grammar from the 1950s is that syntactic operations are blind to semantics. The syntax takes something of the right type and builds it into the positions of the right type – it never cares about the meaning. The famous argument that no language has a rule of ‘Red Extraposition’ (cf. Bresnan (1972)) that would take a word or a phrase that includes the concept of redness, without caring whether it is an adjective, a verb, or a noun, and move it to the end of the sentence is a good illustration of what the ‘blindness’ or autonomy of syntax means.

Prior to pursuing the issue of the input of feature clusters to syntax, a note of clarification is needed. Following the assumptions of the Minimalist Program (cf. Chomsky (1995)), the CS contains only two transformational operations: Merge and Move. The input of θ -roles to the CS should be understood as having effect on Merge, not Move. The fact that feature clusters have no impact on Move is absolutely a desirable outcome. For instance, a *wh*-phrase will undergo movement (overtly or covertly) regardless of the θ -role that it is associated with.³² As for Merge, the feature clusters have impact in so much as the value of clusters is relevant for the mapping indices. As already said (cf. Chapter 1, section 2.2.3), ideally, one would want linking rules (i.e. rules that ‘instruct’ the operation of Merge) to be predictable and explicable in terms of the verb’s semantic-selection

³¹ As already said, the system actually allows for nine feature clusters. I introduce the ninth – the empty list cluster - in Chapter 4. For ease of presentation, I ignore it at this point.

³² The same is standardly assumed of NP-movement as well; there are no instances of ‘theta-driven NP-movement’.

(i.e. θ -roles). One would also want to preserve the assumption that the CS is blind to the semantic content of the theta roles.

Since the theta roles in the Theta System are formally coded - decomposed in terms of primitive features /c and /m with +/- values, this basic assumption that the CS (i.e. syntax) is blind to the semantic content of the feature clusters is preserved in the Theta System. As already noted in Chapter 1, merging in the Theta System is determined purely based on the +/- values of the cluster. All [+] clusters ([+c+m], [+c] and [+m]) merge externally. All [-] clusters ([-c-m], [-c], and [-m]) merge internally. Finally, the mixed clusters ([-c+m] and [+c-m]) are allowed, in principle, to merge both externally and internally. Let us take a look at the examples in (2) and (3).

(2a) Max_[-c+m] worries about something

(2b) Something worries Max_[-c+m]

(3a) I cut the bread with this knife_[+c-m]

(3b) This knife_[+c-m] cut the bread

The entries giving rise to (2a) and (2b) both contain a [-c+m] role.³³ This same role merges externally in (2a) and internally in (2b). The same is true of the examples in (3). In (3a), the Instrument merges internally whereas in (3b) it merges externally. By allowing the mixed clusters to merge, in principle, both externally and internally, the varying syntactic realizations of Experiencers (2) and Instruments (3) are captured in the Theta System. Recall that they are mixed clusters that do not get an index and will consequently merge externally provided nothing rules it out.³⁴

It is important to notice that the way verbal concepts are formally coded in the Theta System reflects the view of the 'epistemological priority' (Chomsky (1995)) of the primitives of semantic-selection (i.e. theta roles) over the primitives of c-selection (i.e. syntactic categories) as proposed by Pesetsky (1982). The position of Pesetsky (1982), (1995) and Chomsky (1995) is that – just like in the instances of linking - most instances of c-selection must be explained as a consequence of s-selection and principles of UG. It is, indeed, generally assumed that – to a large extent - the c-selection can be reduced to s-selection. For those instances that do not seem to be so easily reducible to s-selection, various proposals have been made in the literature. For instance, contra Grimshaw (1981), Pesetsky (1982) argues that it is not necessary to specify that *ask* c-selects a DP or CP (4), whereas *wonder* c-selects only a CP (5).

³³ The issue of the experiencer-verbs will not be addressed in this study. The reader is referred to Reinhart (2001) and Reinhart (2002) for an elaborate presentation and discussion of experiencer-verbs.

³⁴ For an in-depth account, the reader is referred to Reinhart (2002).

- (4a) Max asked [what time it was]
 (4b) Max asked [the time]
 (5a) Max wondered [what time it was]
 (5b) *Max wondered [the time]

On Pesetsky's (1982) account, the differences between *ask* and *wonder* follow from a Case difference. Namely, whereas *ask* assigns ACC case, *wonder* does not. Consequently, the difference can be stated in terms of Case properties, rather than in terms of c-selection. The view is perfectly in line with the standardly accepted assumption that whereas NPs must receive Case, clauses do not.

I will show that the issue can be elegantly handled in the Theta System. In the Theta System, the Case properties of *wonder* and *ask* are deducible from s-selection (i.e. the information carried by the feature clusters). Let us start by establishing the relevant grids. As for the external role, both *ask* and *wonder* require the participant associated with this role to be sentient. Notice, however, that the external argument of *wonder* is different from the external argument of *ask*. Whereas agentive adverbs like *deliberately* or *intentionally* are licensed to occur with *ask*, they are not licensed to occur with *wonder*. I find the adverbial test quite revealing since in many approaches *volitionality* is among the defining properties of Agents, even volitionality alone as in Dowty (1979).³⁵

- (6a) I deliberately/intentionally asked the question.
 (6b) I *deliberately/*intentionally wondered about the question.

Based on the acceptability of (6a) and the unacceptability of (6b), one can conclude that the external argument of *ask* is a [+c+m] role, whereas the external argument of *wonder* is not. Notice that the external argument establishes no causal relation with the predicate *wonder*. Consequently, it cannot be a [+c] role. As already said, it requires the participant to which it is assigned to be 'mentally involved' or 'sentient'. This being so, the external argument of *wonder* is a [+m] role. This specification is consistent not just with the 'sentience' entailed here, but also with the syntactic fact that this argument merges externally.³⁶

Let us now turn to the internal arguments of these two verbs. The internal argument of *ask* is consistent with the Theme [-c-m] interpretation. The participant assigned this cluster establishes no causal relation with *ask* and its mental status is not

³⁵ As seen in (6b), once the preposition is inserted for Case reason, DPs can occur as complements of *wonder*.

³⁶ Alternatively, the role could also be [-c+m]. For the purposes of the discussion here, the choice of [+m] over [-c+m] is not relevant. Some interesting differences that the two choices can bring about are outside the scope of our discussion.

relevant (i.e. it is not required to be sentient or perceiving). Consequently, the grid of *ask* is given in (7).

- (7) *ask*_z: ([+c+m], [-c-m])

As for the internal argument of *wonder*, the participant associated with this role is not sentient and/or perceiving. As will be clear shortly, its causal status is different from that of the internal role of *ask*. Let us then encode it as [-m] (8).

- (8) *wonder*: ([+m], [-m])

Let us now explore the differences between the internal roles of *ask* and *wonder*. Recall (Chapter 1) that though ‘cause’ is not a logical, but a perception driven notion, sentences where one of the participants is perceived as a cause of an event or change in another participant are paraphrasable in terms of sentences that contain verbs like *cause* and *make*. Recall further that the causal paraphrase is not just available in cases of explicit /+c coding, but also in case of [-m] - where the causal status of the participant is left undetermined. In Chapter 1, it was argued that the causal paraphrase is available for a [-m] cluster since - unlike [-c-m] - the feature cluster [-m] is consistent with both a [-m-c] interpretation (roughly, theme) and a [-m+c] interpretation (roughly, cause, without sentience). On the [-m+c] expansion of this cluster, one would expect the sentence to be paraphrasable with a sentence that contains *cause/make*. As argued in Chapter 1, this prediction is borne out. Recall that on the [-m +c] expansion of the [-m] cluster associated with *his health* in (9a), (9b) is the adequate paraphrase of (9a). Recall further that the causal entailment is absent if a participant is associated with a cluster that contains a /-c feature since the participant is not perceivable as the cause of the event or the change in another participant.

- (9a) His_i health_[-m] worried every patient_i
 (9b) His health caused every patient to worry.

Let us now apply the test to the internal arguments of *ask* and *wonder*. Just like in the case of *break*, the internal role of *ask* is argued to be a fully specified [-c-m]. Consequently, one would not expect the participant assigned the internal role of *ask* to establish a causal relation with the verb. This prediction is borne out: a sentence like (10a) does not entail something like (10b). Unlike (10a), the sentence in (11a) is paraphrasable as (11b). This confirms our hypothesis that the internal role of *wonder* is [-m], which is consistent with both the [-c-m] and the [+c-m] interpretations.

- (10a) John asked the question_[-c-m]
 (10b) *The question made/caused John (to) ask.

(11a) John wondered about the question [-m]

(11b) The question caused/made John (to) wonder.

Having established the validity of the verbal grids in (7) and (8), let us now turn to the case issues. Recall that whereas *ask* is the ACC Case assigner, *wonder* is not (cf. Pesetsky (1982)). Notice now that the grid of *ask* (7) meets both of the criteria for ACC marking in the Theta System. Namely, the verb contains both a [+] cluster and a fully specified [-c,α] (cf. Chapter 1, Subsection 2.2.5). The grid of *wonder* (8), on the other hand, fails to satisfy one of these conditions as it does not have a fully specified [-c,α] on its grid. Consequently, the facts that *wonder* is not an ACC case assigner follows from the s-selection – from the properties of the feature clusters encoded on its grid.

To sum up, the fact that some of the pieces of information encoded on the grid are relevant for formal properties should not come as a surprise since the theta roles in the Theta System are coded so that they are legible to both the syntax and the semantics. What is relevant for the merging instructions, for instance, and consequently for the syntax is the value of the cluster. Namely, the syntax will not merge the feature clusters according to their ‘sentient’ or ‘causal’ semantic content, but according to whether they have a ‘plus’, a ‘minus’, or a ‘mixed’ value. The syntax, thus, is not directly sensitive to the semantic import of the theta roles. Since all the clusters – regardless of whether they are fully specified or underspecified – have a value, in terms of pieces of information that are relevant for the syntax, the impact of both fully specified clusters and underspecified clusters is straightforward.

2.2 The Input of Feature clusters to Semantics

Things seem to be more intriguing with respect to the input of underspecified and fully specified clusters in semantic terms. In these terms, feature clusters encode the basic causal relationships. Notice further that - in interpretative terms – ‘being fully specified’ means that the causal and the mental status of a participant assigned this role are made fully explicit. Consequently, a [-c- m] cluster is consistent only with the Theme role.³⁷ Underspecified clusters seem to be more intriguing in this respect. For instance, a [-c] cluster is, in principle, equivalent to [-c+m] and [-c-m] i.e. it is consistent with more than one thematic role. This immediately raises the question of how the interpretative component treats such ‘ambiguous’ relations. Conceptually, the existence of underspecified clusters may pose a problem since a situation may arise where the system seems to allow, at the interpretative level, two identical thematic relations. This does not seem to be a desirable result.

³⁷ For the discussion here, it is irrelevant whether a theme is ‘affected’ or ‘unaffected’. The important point is that both ‘affected’ and ‘unaffected’ Themes are interpreted as not being the cause of the event in question (/c) and so that their mental status is irrelevant (/m).

Interestingly enough, this issue can also be related to one of the ‘long-standing mysteries’ in the literature – the Animacy Restriction with the Double Object Constructions. Namely, it has long been noted in the literature (cf. Green (1974), Partee (1979), Oehrle (1976), Levin (1993), Greenberg (2002), to name just a few) that the Recipient argument in the Double Object Construction requires to be animate. In terms of the ‘Theta System’, ‘being underspecified for / α ’ means that the feature α is irrelevant for the participant to which the role is assigned. In view of this claim, notice the puzzle posed by the following example:

(12) Peter shipped Lucie/*NY_[-c] a parcel

The participants *Lucie* or *NY* are assigned a [-c] role in the Theta System. Note now that if the interpretative component were free to interpret this role ‘at face value’ - as a [-c] role, no selectional restriction should be observed. Consequently - contrary to (12) - the role should be assigned to both animate and inanimate participants.

To make the issue even more intriguing, this kind of selectional restriction on the [-c] role is observed only when it co-occurs with some clusters, and not when it co-occurs with others.

I will argue that that all of these problems can be accounted for within the Theta System provided more attention is paid to the conditions that govern the co-occurrences of these clusters. Before addressing these issues, however, one needs to be acquainted with the conditions on thematic roles that have been assumed in the literature.

3. Conditions on Thematic Roles

‘Thematic relations’ (Gruber (1967)), ‘case roles/case relations’ (Fillmore (1968)) or ‘thematic roles’ -often abbreviated as ‘theta roles’ (Chomsky (1981), Williams (1981), and Pesetsky (1982)) have been in the generative literature from its very beginnings. The gist of the classical assumptions about theta roles that is generally still maintained in the literature can be summed up as follows: (a) there is a limited number of distinct roles with labels like ‘Agent’, ‘Theme’, ‘Instrument’, and ‘Goal’ (b) they have direct semantic import, and (c) there are certain conditions pertaining to them. For instance, they are assigned to the arguments of verbs.³⁸

³⁸ One should take even such broad generalizations on theta roles with caution. On the one hand, not just the nature, but even the very existence of thematic role has been questioned in the literature. Ravin (1990), for instance, treats them as epiphenomena. On the other hand, there are different views with respect to whether thematic roles are accommodated in the lexicon. For instance, whereas theta roles are accommodated in the lexicon in the Theta System, on Borer’s (2000) view, the arguments structure is licensed by syntactic structure, which may have the effect of ‘verbalizing’ or ‘adjectivizing’ a structure. Finally, notice that something like (c) is not true of every system. Namely, though syntactic literature frequently

As evident from the discussion in the previous section, the basic assumptions (a)-(c) are shared by the Theta System. Namely, there is a limited set of feature clusters with semantic import that are assigned to arguments. The fact that (a)-(c) are generally agreed upon in the literature should not come as a surprise. On the one hand, it seems reasonable to say that knowing the meaning of a verb involves knowing the thematic roles of the participants in the action/state expressed by the verb. On the other hand, the outputs where thematic roles are not assigned to arguments (13), are, at least, semantically deviant (cf. Bošković (1994)) or semantically deviant and non-converging (Chomsky (1994)).

(13) *Peter hit

On either account, there must be some sort of rule regulating the assignment of theta roles to arguments. Two criteria pertaining to the assignment of theta roles to arguments have been dominant in the literature: the Theta Criterion (Chomsky (1981)) and the Uniqueness Criterion (stemming from Bresnan (1982a), (1982b)).

3.1 The Theta Criterion

In Government and Binding framework, (Chomsky (1981)), the condition that couches the assignment of theta roles to arguments is the Theta Criterion. A frequently cited definition of the Theta Criterion is given in (14)

(14) The Theta Criterion
Each argument bears one and only one theta-role and each theta-role is assigned to one and only one argument.

As seen in (14), the Theta Criterion is a biuniqueness criterion.³⁹ It requires that there is a one-to-one correspondence between the theta roles and the arguments. Different researchers have argued that the Theta Criterion as given in (14) must be weakened. Following Jackendoff (1972), Culicover and Wilkins (1984), for instance, claim that thematic roles can be multiply assigned to a given NP with respect to a situation characterized by a single verb or a set of verbs. In Culicover

imports Jackendoff's work, one sometimes overlooks the noted fact that the basic notion like 'sisterhood' with respect to 'the argument of' relation are not assumed in Jackendoff's system (cf. Jackendoff (1987), for instance).

³⁹ A note of clarification is needed here. Though Chomsky himself states the Theta Criterion as given in (14), he also weakens it in the very same work. Namely, in fn. 14, p. 139 he makes it clear that the prime objective of the Theta Criterion is not to prevent arguments from getting more than one theta-role, but to prevent them from getting more than one theta-role in the course of the derivation. It is, however, the 'biuniqueness' Theta Criterion (14) that has often been treated as the core of the constraint. The reader is referred to Jackendoff (1987) and Bošković (1994) who explicitly point out that the essential point of the Theta Criterion is the ban on 'role-acquisition' through movement.

and Wilkins (1984), for instance, an argument can possess more than one theta-role provided there is no dual assignment by a verb of intensional (perception) roles, or of extensional (action) roles, where “the extensional thematic roles categorize objects as physical entities in terms of their perceived properties” (Culicover and Wilkins (1984): p. 212). In their system, an object that changes position or state belongs to the class of extensional roles. Thematic relations of source, goal and theme are of this type (cf. Culicover and Wilkins (1984), after Gruber (1967)).⁴⁰ The intensional thematic roles are those that categorize objects according to their status as actors in an action. “The notions such as agents, patients, instruments, benefactee are assigned to objects based on our natural theories of human action” (Culicover and Wilkins (1984): p. 212). Consequently, on their account, a DP can have more than one thematic role. Jackendoff (1987) explicitly questions the biuniqueness requirement by arguing that there are cases where an NP receives more than one theta role. In Jackendoff (1987), verbs like *buy*, *sell*, *exchange*, and *trade* are examples that corroborate this claim. For instance, Jackendoff (1987) claims that (15) involves at least the components given in (a) and (b). This being the case, he argues, X and Z have two semantic roles each.⁴¹

- (15) X buy Y from Z
 a. Y changes possession (from Z) to X
 b. money changes possession from X to Z

Taking the data from Choctaw as his starting point, Broadwell (1986) argues for the revision of the Theta Criterion (16).

- (16) Th-criterion (revised) (Broadwell (1986))
 Each argument is assigned one and only one complex th-role,
 and each complex th-role is assigned to one and only one
 argument.

On his account, at the lexical level, verbs are decomposed into a small number of abstract predicates (cf. Jackendoff (1972), (1976) and Dowty (1979), for instance). Two or more theta roles can be merged into a complex theta role, which can be assigned to a single argument if each component theta role is assigned by a different abstract predicate. A complex Agent-Theme role is attested with *run* and Agent-Goal is attested with *receive*, for instance. A further prediction of his account is that if two theta roles may not be combined, then they are assigned by the same predicate.

Last but not least, Chomsky (1986) explicitly allows an argument to bear more than one theta-role. For instance, in (17) *Peter* is assigned two theta roles: by *left* and by *angry*.⁴²

⁴⁰ In Gruber (1967), Theme is the object in motion or being located and Source is the object from which motion proceeds.

⁴¹ For quite a different account of *buy-sell*-type pairs, the reader is referred to Parsons (1990).

⁴² Cf. also Chomsky (1981).

- (17) Peter left angry.

On Chomsky's (1986) account, an argument can bear more than one theta-role provided it is not a result of movement. The crucial point with (17) is that it does not involve movement into the theta-position. *Peter* in (17) is assigned both of its theta roles in its base-generated position. Consequently, Chomsky incorporates the Theta Criterion into the Chain condition. As seen in (18), the only requirement on theta roles is for them to be assigned to the foot of the chain.

- (18) The Chain Condition
 If $C = (\alpha_1 \dots \alpha_n)$ is a maximal CHAIN, then α_n occupies its unique theta-position and α_1 its unique Case-marked position.

This position of Chomsky (1986) is reiterated by Chomsky and Lasnik (cf. Chomsky (1995)), where they claim that a chain cannot have more than one theta-position (namely α_n), "though any number of semantic roles can be assigned in this position" (Chomsky (1995): p.46). Just like in (17), the DP *the wall* in (19) receives two theta roles: a role from the verb *pain* and a role from the adjective *red*.

- (19) We painted the wall red

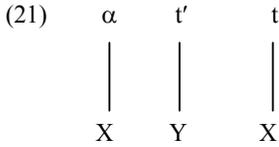
Bošković (1994) argues that the ban on movement into the theta-position is syntactic in nature and reducible to the independently motivated Principles of Economy. Bošković (1994) follows Massulo (1992) in assuming that SpecCP and SpecIP are nontheta-positions, whereas SpecVP is a theta-position. Theta-positions (T-position) and nontheta-positions (T'-positions) are crucially different kinds of syntactic positions (cf. Chomsky (1981)). Consequently, on Bošković's (1994) account, instances like (20a) and (20b) are instances of Improper Movement.

- (20a) *John [_{VP} remarked⁴³ [_{IP} t to t like Mary]]

- (20b) *John [_{VP} t remarked [_{IP} t to seem that Peter likes Mary]]

Bošković (1994) adopts Saito's (1992) and Takahashi's (1992) account of Improper Movement. Let us take a look at (21), where X and Y are different syntactic positions. Instances like (21) are ruled out by Principles of Economy of Derivation since in order to form a single X-chain (α , t), the derivation in (21) creates two chains: a Y-chain (t', t) and an X-chain (α , t'). The movement is deemed improper since there is a more economical derivation (i.e. the derivation in which α moves directly to X creating a single X chain).

⁴³ Following Pesetsky's (1982) claim that verbs that cannot take NP complements cannot assign ACC, based on the ungrammaticality of examples like **John remarked Mary's arrival*, Bošković (1994) assumes that *remark* does not have the ACC case feature.



On Bošković's (1994) account, the derivation in (20a) involves movement from a T-position via T' into a T-position and the derivation in (20b) involves movement from T'-position to T-position and back to T'-position.⁴⁴ Consequently, on Bošković's account, both (20a) and (20b) are uniformly accounted as instances of Improper Movement.^{45 46}

Having reviewed the arguments that require the weakening of the Theta Criterion as given in (14), it is clear that the problematic part of it is the 'bi-uniqueness condition' that requires every argument to be associated with one and only one theta-role. A natural question, then, to ask is what can be maintained about the assignments of theta roles to the arguments. A version of the Theta Criterion that is maintained in the literature (cf. Chomsky (1981), Bošković (1994), and Lasnik (2000), for instance) is given in (22).

- (22)
- a. All theta roles must be assigned to arguments.
 - b. Every argument must have a theta-role.

The definition in (22) simply states that all theta roles of the predicate must be discharged and that every argument must be related to some theta-role. It does not require a one-to-one correspondence between the theta roles and the arguments. Brody (1993) and Bošković (1994) argue that something like (22) holds by virtue of interpretation. On their view, something like (22) follows from general considerations on interpretation. For Chomsky (1994), theta roles are formal features of predicates that must be discharged. On his view, (22a) follows from lexical properties of theta-assigners (e.g. verbs). On either view, there does not seem to be anything semantically wrong with more than one theta-role being associated with one argument. Whatever the nature of the Theta Criterion in (22) is, it seems conceptually and empirically a necessary condition to maintain.

⁴⁴ Recall that neither [Spec, IP] nor [Spec, VP] can be skipped. The [Spec, IP] position needs to be filled for EPP reasons, whereas [Spec, VP] is the position where the external theta-role is assigned.

⁴⁵ As further pointed out by Bošković (1994), though (20a) could be accounted as a violation of the Theta Criterion at LF, (20b) cannot.

⁴⁶ The reader should be aware that the presentation here includes only the instances of Improper Movement. Instances like *_[IP] John _[VP] t _[V'] hit t_]] that do not involve Improper Movement, for instance, are also accounted for by Bošković (1994) by appealing to Principles of Economy.

3.2 The Uniqueness Criterion

There is another condition on theta roles and arguments that needs to be examined. The requirement in question is the uniqueness of assignment of theta roles to arguments with respect to other arguments of the same verb. The notion of uniqueness stems from Bresnan's (1982) work. Since the uniqueness criterion is embedded in the wider set of principles of Lexical Functional Grammar (LFG), I will first review the key points of Bresnan's (1982) LFG approach to the thematic-role assignment to the arguments and only then pursue the investigation of the notion of uniqueness.

The predicate argument structure positions of LFG are identified with theta roles. They are associated with grammatical functions (SUBJECT, OBJECT) by means of the grammatical function assignment. When a grammatical function is assigned to a predicate argument, the functional subject (or object) is said to be bound to that argument. In Bresnan (1982a), the possible mappings from thematic roles to grammatical functions are limited by three principles of the universal grammar given in (23).

- (23a) Functional Completeness requires that every predicate argument (i.e. theta-role) be bound to a functional argument of the type specified by the lexical form.
- (23b) Functional Coherence requires that every meaningful functional argument of the type specifiable by a lexical form must be bound to a predicate argument.
- (23c) Uniqueness implies that all mappings must assign a unique function to each thematic role (or predicate argument) and a unique thematic role (or predicate argument) to each function which is associated with a predicate argument.

Bresnan's (1982a) example in (24) violates functional completeness since there is no object bound to the second predicate argument in the lexical form "ADMIRE ((SUBJ), (OBJ))".

- (24) *John admired

Bresnan's (1982a) example in (25) violates functional coherence since there is a second object Mary which cannot be bound to a predicate argument in the lexical form "BITE ((SUBJ), (OBJ))".

- (25) *Fred bit John Mary

It should be evident that the Functional Completeness and the Functional Coherence cover exactly what the Theta Criterion in (22) covers. Functional Completeness corresponds to the rule in (22a). Just like *admire* in (24) the verb *hit* in (26) has a theta-role that has not been assigned to an argument. Consequently, both (22a) and (23a) render examples like (26), at least, semantically deviant.

(26) *Mary hit

An example like (27) is illegitimate by Functional Coherence (23b) and by (22b).⁴⁷ Just like (25), the verb *sparkle* is one theta role ‘short’ in (27).

(27) *Mary sparkled the diamond

The requirement that remains to be examined is the Uniqueness Conditions (23c). In Bresnan (1982b), the following types of examples are excluded by Uniqueness:

(28) *She ate supper_[THEME] quickly every pizza_[THEME]

The example in (28) is illegitimate since it contains two identical theta roles: the role assigned to *supper* and the role assigned to *every pizza*. It should be noted that the uniqueness requirement under consideration here is actually a part of Bresnan’s (1982b) Biuniqueness of Function-Argument Assignment Condition which, in fact, requires – just like the Theta Criterion in (14) – a one-to-one correspondence between the theta roles and arguments (cf. 23c)).

As shown in the previous subsection, it is clear that a one-to-one correspondence between the theta roles and arguments cannot be maintained. I think that ‘unidirectional’ uniqueness should be maintained. For instance, the way it is formulated in (29), thematic uniqueness, however, can and should be maintained without maintaining the one-to-one correspondence between the theta roles and arguments.

(29) Uniqueness (Carlson (1998), after (Bresnan (1982)))
Each argument of a verb is assigned a unique theta-role (with respect to the other arguments of that same verb).

Let us examine the merits of (29). The definition in (29) is in the spirit of neo-Davidsonian (cf. Carlson (1984), Parsons (1985), (1990)) notion of uniqueness. On a neo-Davidsonian analysis, theta roles constitute relations between a participant (i.e. an entity) and an event (i.e. *e*). The neo-Davidsonian analysis of the sentence *I ate a cake* is, for instance, roughly, (30).

⁴⁷Carlson (1998) sums up Functional Coherence as “No two roles are ever assigned to the same argument” (p. 36). If this is taken to be the reading of Functional Coherence, the rule is falsified by examples such as *Peter left angry*.

- (30) $\exists e$ [Eating(e) & Agent(e, I) & Patient (e, a cake)]

Events have participants of various kinds. In Parsons' (1990) analysis, uniqueness is a requirement on thematic relations, not participants. Namely, participants are related to an event through unique (i.e. distinct) thematic relations. "Each event possesses at most one Agent, at most one Experiencer, and so on" (Parsons (1990): 74). Consequently, an event cannot possess two identical thematic relations. Carlson's (1998) uniqueness seems to capture the same idea (31):

- (31) An event has at most one entity playing a given thematic role.
(in slogan form: 'Two agents, two events!')

Though Carlson (1998) does not explicitly discuss it, for his approach to uniqueness it does not seem to matter whether an entity (i.e. a participant) is playing two thematic roles (i.e. is assigned two thematic roles), or not. What crucially matters is that the thematic relations that relate the participant to an event are distinct from thematic relations that relate other participants to the same event. "The basic prediction of thematic uniqueness is that any verb meaning is going to lead to intuitions of asymmetry in the relation" (Carlson (1998): 37). The asymmetry in relation is readily apparent in the cases of most verbs. For instance, (32b) does not follow from (32a)

- (32a) Peter is hitting Mary.

- (32b) Mary is hitting Peter.

In cases of the so-called 'symmetric predicates' like *marry* and *embrace*, Carlson (1998) argues that the asymmetry is present – even though it might not be readily apparent. For instance, from the standpoint of (33) it is *Joni*, not *Johnny* who is the Agent since it is only *Joni* who can intentionally bring that state of affairs in (33) into being.

- (33) Joni married Johnny. (Carlson (1998))

If the semantic import of theta roles is to describe the 'mode of participation' of arguments of a predicate in a given event (cf. Carlson (1998)), then there should be nothing semantically wrong if one participant establishes more than one 'mode of participation'. The problem arises if more than one participant establishes the same 'mode of participation' in the same event. This is something that should not be allowed. "Suppose we were to label as themes both the direct and the indirect objects. Then, the logical form of a sentence containing both such items would be logically equivalent to the sentence with the direct and indirect object interchanged. "If you gave a fish to Mary, you would thereby give Mary to a fish" (Parsons (1990): fn. 5: p.293).

Finally, it should be noted, that Carlson (1984), (1998) poses an even more fundamental question with respect to the notion of uniqueness: why there are no verbs with two identical roles. The question is directly related to the assumption that the conceptual system does not generate (realizable) concepts with identical theta roles. Carlson's (1984) fictional verb *skick* can be used as an illustration of this assumption. The fictional *skick* would mean the same thing as *kick* except that - in thematic terms - *skick* has two Agents so that the sentence (34) means *John and Bill (each) kicked the ball*. In other words, both *John* and *Bill* are the Agents of the event of *skicking* in (34).

(34) John skicked the ball Bill.

As Carlson (1984) further notes, the puzzle is universal. Namely, there does not seem to be a verb of any language that acts like the fictional *skick*. It is crucially important that the essence of the puzzle raised by Carlson (1984) can be understood as a question of thematic uniqueness at the level of the verbal concepts themselves. Namely, it raises the question of why no (realizable) verb in natural language is encoded in terms of identical thematic roles. The problem with the fictional *skick* is not that the thematic roles are not discharged or that arguments end up theta-less. The essence of the problem of the fictional *skick* is that two identical theta roles are present on the same grid.

One should be aware that the concept of uniqueness is not tied to the particular theoretical model one adopts. For instance, Jaeggli (1986a) proposes the following principle:

(35) All θ -roles must be uniquely assigned.

As stated by Jaeggli (1986a) the principle in (35) ensures that one theta-role cannot be assigned to more than one element by a predicate. Pesetsky's (1995) Thematic Diversity (36) captures the same core idea in a framework quite different from the framework of event semantics. The requirement in (36) correctly bans predicates with two Agents or two Themes.

(36) Thematic Diversity
If α and β are distinct arguments of a predicate P, the thematic role assigned to α must be distinct from the thematic role assigned to β .

Uniqueness - in the sense advocated here - boils down to the ban on assigning the same role to two distinct arguments of the same predicate. For ease of reference, I will label it 'role-sharing'. In the sense it is understood in this study, note that uniqueness should not prevent one argument from being assigned more than one theta-role - 'argument-sharing'. As a matter of fact, we have already encountered one instance of 'argument-sharing'. Namely, in the case of Reflexivization/Bundling (cf.

Chapter 1, subsection 2.2.4) two thematic roles are bundled and assigned to one syntactic argument.

Uniqueness - in the sense advocated here - has been challenged in the literature. Following Gruber (1967) Jackendoff (1987) points to the examples in (37) to argue for “role-sharing”. Namely, according to Jackendoff, the examples in (37) constitute cases where one theta-role is shared by more than one NP.

- (37a) The box has books in it.
- (37b) Bill brought/carried some books with him.
- (37c) The list includes my name on it.

In (37a), Jackendoff argues, *the box* and *it* do not have distinct theta roles. Firstly, he points to the synonymy with *There are books in the box*, where there is only one participant. Secondly, he points to impossibility of questioning the object of the preposition * *What does the box have books in it?* Jackendoff further argues that similar considerations apply to (37b) and (37c) where *with him* and *on it* do not seem to add any information. They can be omitted without loss, and they cannot be questioned (**Who did Bill bring some books with?*, **What does the list include my name on?*). No other NP can be substituted in (37b) **Bill brought some books with Harry*, and only NPs that express some location within the list can be substituted in (37c) as in *The list includes my name on its/the first page*. Consequently, Jackendoff (1987) concludes that in each of these cases, two different NPs in the sentence appear to share one thematic role.

The behavior of the NPs in question is curious. However, it does not constitute an argument against uniqueness as advocated here. Namely, the NP in the prepositional phrase in (37) is not an argument with respect to the verb in question. As Jackendoff (1987) himself points out, there is clearly a ‘subject-oriented reading’ with all the examples in (37). The ability to co-index the pronoun *it* and the DP in (37a) is, in turn, expected if *it* is, indeed, not an argument of the verb. It is exactly what is expected in Reinhart and Reuland’s (1993) binding theory. Unlike in (38b), the pronoun in (38a), for instance, cannot be co-indexed with Max because they are co-arguments of the verb. In (38b) this is possible since the pronoun is not an argument of the verb – it is embedded within an adjunct PP. The fact that these phrases are adjuncts, rather than arguments is corroborated further by Jackendoff’s (1987) claim that they can be omitted with no impact whatsoever.

- (38a) Max speaks with himself/*with him_i
- (38b) Max_i saw a snake near him_i (Reinhart and Reuland (1993))

Consequently, the phrases *in it*, *with him*, and *on it* in (37) are not arguments of the verbs in question. They are not encoded on the grid of the verbs in question. If *Bill* and *him* are not co-arguments of the same predicate, the data in (37) cannot be used to argue against uniqueness as advocated here. Recall that the thematic uniqueness advocated here applies only to arguments of the same predicate. The notion of the thematic role itself would need radical re-examination in order to implement such argument-adjunct ‘role-sharing’.⁴⁸ One should recall that the crucial relation for the theta-role assignment is the ‘argument of’ relation. One should remember that though every DP must have some function – some interpretation - in the sentence, not all the DPs are in the ‘argument of’ relation to some verb. Finally, since it is the ‘argument of’ relation that is important for theta-role assignment – though every DP has to have some interpretation - not every DP has to have a theta role. Typical examples of NPs that do not have a thematic role are adjuncts like *yesterday* in (39). I will return to the issue of the status of *yesterday* in Section 4 of this Chapter.

(39) Max killed Peter yesterday.

Though ‘Full Interpretation’ will require *yesterday* to have some function – some interpretation – in the sentence, its function is not the ‘argument of’, and consequently, it does not have a thematic role. The ‘argument of’ relation should best be viewed as in Williams ((1995), who argues that every NP must get some sort of interpretation in the sentence and that bearing the ‘argument of’ relation is only one way of getting one. A further important point is that one of the characteristics of the ‘argument of’ relation is the structural locality defined in terms of strict ‘sisterhood’- c-command (Williams (1980)) or (alternatively) m-command (Williams (1995)). One should be aware that this is the tightest of all grammatical relations. For examples, it is often noted in the literature that whereas there is exceptional Case marking (whereby a verb assigns case to the subject of the embedded clause), exceptional Theta-marking, whereby a verb would assign a theta-role to the subject of the embedded clause is not attested in natural language.

Though the examples in (37) cannot be considered as arguments against uniqueness as advocated here, it is important to stress that they are nonetheless extremely interesting and puzzling. The first interesting thing to notice is that in examples (37) co-reference between the subject DP and the pronoun is not just an option – it is obligatory. This is indeed an unusual state of affairs. Namely, this behavior of the pronouns in (37) is in sharp contrast with instances like (38b) - repeated here as (40) - where the pronoun – not being a co-argument of the verb - can pick out any referent from the universe of discourse. It can be co-indexed with *Max*, but – crucially - it does not have to be (40).

(40) Max_i saw a snake near him_{ij}

⁴⁸ This, of course, is not a problem for Jackendoff’s system, per se. It becomes a problem if one utilizes Jackendoff’s system and at the same time assumes that thematic role assignment is based on ‘argument of’ relation of Williams’ (1980).

It is possible that the co-indexation in (37) is enforced by a high degree of semantic restriction imposed by the verbs in question. Namely, the examples might be reminiscent of the famous *Max craned his_{i/*j} neck*-type of examples which are analyzed as exhibiting an extreme degree of semantic selection whereby the second argument must be interpreted as the agent's inalienably possessed neck (cf. Bresnan (1982a), for instance). Notice, however, that the co-indexation is forced only in the case of *with*-phrase (cf. (37b)). If, for instance, the adjunct *about him* replaces *with him* in (37b), the pronoun can be co-indexed with *Bill*, but - crucially - does not have to be.

As seen in (41), the second interesting thing - pointed out by Jackendoff (1987) himself - is the unexpected inability of reflexives (or logophors) to occur in the position occupied by pronouns. This is indeed puzzling since (41) constitute the environment where logophors are expected to occur.

(41a) The box has books in it (*self).

(41b) Bill brought/carried some books with him (*self).

(41c) The list includes my name on it (*self).

As noted in Reinhart & Reuland (1991), the long-distance (logophoric) use of SELF-anaphors is pervasive in English. Namely, as Reinhart and Reuland (1991), (1993) show, it is exactly the environment where an anaphor and a pronoun are embedded in an argument or an adjunct PP that both are allowed to occur. Notice further that the logophoric use of SELF-anaphors would fit perfectly with the interpretation of (37) since SELF-anaphors are always "subject-oriented" when used logophorically. If, however, the semantic restrictions in (37) are, indeed, of such a high degree as with the verb *crane* to enforce bound variable reading, then it should not be surprising that it is impossible to execute the "discourse binding" necessary for the logophoric use of SELF-anaphors.⁴⁹

⁴⁹ A possible solution - suggested by E. Reuland - for the inability for logophors to be licensed in (37) is that the discourse cannot 'override' the semantic restrictions. Alternatively, the use of the SELF-anaphor in these cases could be viewed as superfluous in the sense that they are superfluous with lexically reflexive predicates. As seen in (i), intrinsically reflexive predicates favor SE over SELF anaphors.

- (i) Oscar schaamt zich/*zichzelf
Oscar shames SE

On Reinhart and Reuland's (1993) account, this follows from principles of economy - the same property should not be marked twice. If the semantic requirements in (37) are on a par with those of *crane*, then the semantic restrictions require the bound anaphor reading. In that sense, the use of the SELF-anaphor would be superfluous in examples (37a) - (37c), just like the use of the intensifier *own* is superfluous in (ii)

To sum up, the examples in (37) seem extremely puzzling and interesting. Due to the fact that the DPs in question are not co-arguments of the predicate, they should not, however, be considered as constituting an argument against uniqueness. Consequently, from the perspective of the theta-theory, the two conceptually and empirically necessary conditions to maintain are the Theta Criterion as in (22) and Uniqueness, the precise definition of which is given in the Section that follows.

4. Conditions on Feature clusters in the Theta System

Recall from the overview of the Theta System that the Cluster Distinctness Constraint is the only requirement that is explicitly formulated in the system. Notice, however, that the Theta Criterion as given in (22) is maintained in the Theta System. Namely, all syntactically projected positions are assigned theta roles and all theta roles that are not discharged are eliminated by lexical operations (cf. Chapter 1 section 2).

4.1 The Non-Identity Constraint

The notion of uniqueness is also important in the Theta System. Though not explicitly formulated in the system, something like (42) is implicit in the Theta System.

- (42) The Non-Identity Constraint
An n-place verb, $n > 1$, is encoded in terms of non-identical feature clusters.

Verbal concepts in the Theta System are encoded in terms of non-identical feature clusters. As stated in the previous section, something like (42) is not just implied in the Theta System, it is a core constraint assumed in all frameworks.⁵⁰ Namely, the generally accepted assumption is that the system of concepts does not generate verbal concepts with two identical theta roles.⁵¹

Furthermore, following the discussion in the previous section, I will assume that the Non-Identity Constraint holds at all relevant levels (43).

-
- (ii) ??/*John craned his own neck.

⁵⁰ The reader is referred to Carlson (1998) for an insightful account of why natural language works this way.

⁵¹ Just like any assumption, this one might be wrong. If that turns out to be the case, then the definition in (44) should be reformulated to cover realizable n-place verbs.

- (43) The Non-Identity Constraint holds at the interface between the system of concepts and the computational system and at the interface between the CS and the conceptual-intentional systems.

Namely, the distinct syntactic arguments of a single predicate must be assigned distinct thematic roles. Finally, in the mapping from syntax to LF each participant must stand in unique/distinct relation(s) to the event in question with respect to other participants of the same event.⁵²

Since mapping from the Lexicon to LF should be uniform, one might pose the question of whether (43) is redundant. The answer to this question is negative. Recall that underspecified clusters are consistent with more than one thematic role. Since they are consistent with more than one thematic relation, it must be insured that if they are expanded, they are expanded so they do not clash in identity with co-occurring feature clusters. We will return to this point shortly.

Let us first see how (42) operates in natural language. To illustrate this, let us revisit Lexical Causativization (Chapter 1, Subsection 2.2.4). The operation is repeated here as (44).

- (44) Lexical Causativization
- (a) Decausativize: Change a /+c feature to a /-c feature.
walk ([+c+m]) → *walk* ([-c+m])
- (b) Agentivize: Add an agent role.
walk ([-c+m]) → *walk* ([+c+m], [-c+m])

Recall that a verb derived by the application of the Lexical Causativization allows only an Agent [+c+m] role (45), rather than the [+c] role (consistent with Agent, Cause and Instrument).

- (45) Max/*The leash/*Hunger walked the dog to his plate.

The clause in (44b) captures this well-known property of verbs derived by the application of Lexical Causativization. What about (44a)? Recall that the feature cluster derived by (44a) contains the /+m feature, the presence of which, in turn, accounts for a well known peculiarity of the causative derivations like (45): “the demoted subject still retains some ‘agentive’ responsibility for the act, though it is no longer its cause” (Reinhart (2002): 244).

⁵² It is an interesting thing to observe that though uniqueness is presumed in many works, it is rarely explicitly formulated. Cf. Pesetsky (1995) for the same conclusion. In addition to the works noted here, one can add Williams (1981) and Lasnik (1988), mentioned by Pesetsky (1995): fn. 58: p.301).

Typical instances that undergo Lexical Causativization belong to the set of Agentive one-place verbs. Apart from *walk*, the set includes verbs like *march*, *run*, *gallop*, and the like. The definition in (44), thus, captures the core properties of instances of Lexical Causativization with Agentive one-place verbs.

Note, now, that Agentive one-place verbs are not the only entries that allow for Lexical Causativization. The following Theme-unergatives (collected from various examples from Levin and Rappaport (1995)) undergo this operation as well:

- (46) beam, shine, flash, buzz, ring, clatter, clink, jiggle, rattle, rustle, toll, burp, and bleed

As illustrated in (47a), Reinhart's (2000) diagnostics for Lexical Causativization (47b) is true for Theme unergatives as well.

- (47a) The postman/*the short circuit buzzed the bell.

(Levin & Rappaport (1995))

- (47b) Lexical Causativization adds a [+c+m] role (Agent) to a verbal entry.

Consequently, (44b) applies in these instances as well. What about (44a)? As argued by Reinhart (2002), (44a) does not apply in all instances of Lexical Causativization. Indeed, there is no indication that *the bell* in (47a) is interpreted any differently than *the bell* in (48). Since *the bell* is not interpreted with some sort of 'agentive' flavor in (47a), I conclude that the need for (44a) must reside somewhere else.

- (48) The bell_[-c-m] buzzed

For verbs in (46), then, Lexical Causativization could then be simply stated as follows:

- (49) Agentivize: Add an agent role
buzz ([-c-m]) → *buzz* ([+c+m], [-c-m])

In the light of (49), observe, now, what happens in the cases of verbs like *walk* (50).

- (50) *walk* ([+c+m]) → *walk* ([+c+m], [+c+m])

As seen in (50), the derived *walk* has two identical theta roles. As such, it is in direct violation of the Non-Identity Constraint in (42). Recall (cf. 3.2. of this Chapter) that no (realizable) verbal concept in natural language is encoded in terms of identical theta roles. For the derived *walk* in (50) to become a realizable concept, it needs to have two distinct theta roles. I argue that it is the need to 'conform' to the

Non-Identity Constraint that (44a) stems from. The manipulation of one of the [+c+m] clusters in (50) results in a verbal concept that does not violate the Non-Identity Constraint (51). Note, importantly, that since the clusters come unordered (cf. Chapter 1), it does not matter which [+c+m] of the *walk* in (51) is manipulated.

(51) *walk* ([+c+m], [-c+m])

It is reasonable to assume that the minimal manipulation is preferred in such cases. It is further reasonable to assume that the change affects the value of the /c, rather than the /m, as the feature /m seems to be tied to more semantic restrictions than the feature /c. The most obvious of them being that whereas /+m obligatorily entails animacy (52a), the feature /+c does not (52b).

(52a) Max/*the armchair_[+m] loves the stream-of-consciousness novels.

(52b) Max/the storm_[+c] destroyed the painting

In the light of the discussion here, the operation of Lexical Causativization/Agentivization is given in (53).

(53) Lexical Causativization

- (a) Add a [+c+m] role
buzz: ([-c-m]) → *buzz*: ([+c+m], [-c-m])
walk: ([+c+m]) → *walk*: ([+c+m], [+c+m])
- (b) Ensure that the grid contains non- identical feature clusters – ‘deagentivize’ one of the clusters: change a /+c feature to a /-c feature
walk ([+c+m], [+c+m]) → *walk* ([+c+m], [-c+m])

The rule in (53b) applies only to those derived verbal concepts that stand in violation of the Non-Identity Constraint (42). In order for such verbal concepts to be realizable in natural language, (53b) must apply.

4.2 The Cluster Distinctness Constraint

The Cluster Distinctness Constraint (henceforth: CDC) is a rule explicitly formulated in the Theta System. Unlike the Non-Identity Constraint, the CDC does not deal with the type of feature clusters that can be encoded on the verbal grid. It deals with the restrictions on the type of clusters that can realize together.

- (54) Cluster-Distinctness Constraint
- a. Two indistinct theta-clusters cannot be both realized on the same predicate.
 - b. Distinctness: two feature clusters α and β are distinct iff
 - i) they share at least one feature, and
 - ii) there is at least one feature or value which they do not share.

By (54), the following pairs come out as indistinct:

- (55a) [-m] and [-c]
 (55b) [-m] and [+c]
 (55c) [+m] and [+c]
 (55d) [+m] and [-c]

The constraint in (54) defines the following unary clusters as distinct: [-c] and [+c], on the one hand, and [+m] and [-m], on the other. The following example illustrates this. The example in (56a) is taken from Reinhart (2002).⁵³

- (56a) The press biased the judge against the defendant.
 (56b) *bias*_z: ([+c], [-c+m], [-c]) → [+c] and [-c] are distinct

An example of the Cluster-Distinctness violation is given in (57a).

- (57a) ?/*The doctor worried Max about his health.

(Reinhart (2002), citing Pesetsky (1995))

- (57b) *worry*: ([+c], [-c+m], [-m]) → [+c] and [-m] are indistinct

In the Theta System, the CDC is treated as a formal restriction. Such restrictions arise from the formal incompatibility of feature clusters. As noted by Pesetsky (1995) there is no “semantic incoherence” with examples like (58a): there is nothing semantically wrong with realizing both the [+c] and [-m] role. As seen in (58b), the content of (58a) can be expressed with a different construction. For that reason, I will refer to the CDC as a “formal constraint”.

- (58a) ?/*The article angered Bill at the government.

⁵³For quite a different account of why the restriction is not observed with verbs of accustoming and alienation, the reader is referred to Pesetsky (1995).

(58b) The article made Bill angry at the government.

It is further interesting to notice that though examples like (58a) are not fully acceptable for any native speaker; their unacceptability is graded among speakers.⁵⁴ Pesetsky (1995), also, points out examples of verbs that are expected to obey his “T/SM restriction” (i.e. restriction of co-realization of all three arguments), but fail to do so. The examples in (59) illustrate the point.

(59a) ?*The Loom of Language* interested many people in linguistics.

(59b) ?Mary’s lecture interested me in mathematics.

(59c) ?Bill managed to excite him about linguistics.

(Pesetsky (1995))

Pesetsky (1995) further notes that “if the content of the impossible third argument is given as an afterthought (or right-dislocated), it often becomes more acceptable” (fn.57: p. 300-301). In other words, when the third DP is not introduced as an argument of the verb, the output becomes far more acceptable (60).⁵⁵

(60a) ?The article in the Times angered Bill – but not at the government.

(60b) ??The television set worried John –but not about the veracity of Bill’s alibi.

To summarize, both of the principles – constraints - examined here are operative at the interface levels. The CDC operates on the interface between the system of concepts and syntax, whereas the Non-Identity Constraint is an interface requirement relevant to the interface between the system of concepts and computational system as much as for the interface between the computational system and semantics. All the restrictions on the co-occurrences of clusters should be explained in terms of their uniqueness (42) or distinctness (54). For instance, the illegitimacy of (57a) follows from the CDC (54), whereas the illegitimacy of *skick-*

⁵⁴ The fact that they are graded in their unacceptability came as an unexpected comment from native speakers of English I use as informants. I should stress that Pesetsky (1995) grades examples like (58a) as completely impossible.

⁵⁵ It is important to notice that the third argument of both *anger* and *worry* is [-m] in Reinhart’s system, whereas in Pesetsky (1995), the former is labeled as a Target and the latter is labeled as Subject Matter. The reader is referred to Pesetsky (1995) for a detailed account.

type verbs of Carlson (1984), (1998) follows from The Non-Identity Constraint (42).⁵⁶

In what follows, I will show that there are interesting puzzles that cannot be accounted for straightforwardly in terms of either the Non-Identity Constraint or the Cluster Distinctness Constraint.

4.3 The Puzzle of *Escape-Type Verbs*

4.3.1 *A Puzzle: Selectional Restriction with Escape-type Verbs*

Psychological verbs that pattern with *escape* are uncontroversially, considered to be unaccusatives (cf. Belletti and Rizzi (1988), Pesetsky (1995) for instance).⁵⁷ A psychological verb (psych-verb) can be defined as a verb that carries an entailment that one of its arguments is in a certain mental state. For instance, *scare* is a psych-verb since *Max scared Peter* entails that *Peter* is in a certain mental state – i.e. his mental state is relevant. *Hit*, on the other hand, is not a psych-verb since in *Max hit Peter*, *hit* carries no entailment regarding *Peter's state of mind*. Verbs that pattern with the unaccusative psych-verb *escape* are *appeal to*, *occur to*, and *matter to*.⁵⁸ There are two properties characteristic of unaccusatives. First, they lack the external argument (i.e. all their arguments merge internally). Second, they lack the ability to assign accusative case (cf. Burzio (1986)).⁵⁹ The crucial test that corroborates the unaccusative nature of *escape-type* verbs comes from their incompatibility with passive. In some languages, there is also a correlation between unergative/unaccusative properties of the verbs and the auxiliary selection in

⁵⁶ As pointed out by Terence Parsons (p.c.) under the assumption that the Lexical Causativization involves feature-manipulation, it is hard to see how the entailment relation between the causative (e.g. *Max walked the dog*) and intransitive (*The dog walked*) can be captured. If no manipulation of a cluster occurs, on the other hand, one ends up with a verbal concept with two identical theta roles, quite like *skick*. As a solution to this problem, I find Parsons' dual-event analysis (cf. Chapter 1) a worthy ally to explore. Namely, one could hypothesize that transitive verbs like *walk* have two Agent roles, but can still be realizable because one is dealing with two and not one event. In that case, the Non-Identity Constraint would have to be reformulated to hold of events, not verbal concepts. I leave this issue for further research.

⁵⁷ A note of clarification might be in order here. Whereas Belletti and Rizzi (1988) argue for the unaccusative analysis of both the *escape-type* verbs (*piacere-type* verbs in their analysis) and *worry-type* verbs (*preoccupare-type* verbs in their analysis) Pesetsky (1995) successfully argues against the unaccusative analysis of *worry-type* verbs (cf. also Hoekstra (1991)), but he also argues that *escape-type* verbs are, indeed, unaccusatives.

⁵⁸ Cf. Pesetsky (1995), for instance.

⁵⁹ Burzio's Generalization (Burzio (1986)) directly relates these two characteristics. I am glossing over the important questions that arise from Burzio's Generalization (1986). For different approaches in deriving Burzio's Generalization, the reader is referred to Reuland (2000).

compound past tenses.⁶⁰ The auxiliary selection is taken to correlate with the status of the surface subject. Namely, if the subject is base-generated as the internal argument, cognates of *be* are selected, whereas if it is base-generated as the external arguments, cognates of *have* are selected. In Italian *essere* (“be”) is selected with unaccusatives and *avere* (“have”) is selected with unergatives and transitive verbs. As seen in (53), the *essere*-selection classifies these verbs as unaccusatives in Burzio’s (1986) sense.⁶¹

- (61a) A Gianni è sempre piaciuta la musica.
to Gianni is always please music
(Belletti and Rizzi (1988))
- (61b) L’idea è sfuggita a Max
The idea is escaped to Max

Consequently, on Belletti and Rizzi’s (1988) analysis both the Theme argument (i.e. *la musica* (61a) and *l’idea* (61b)) and what they label the Experiencer argument (i.e. *a Gianni* (61a) and *a Max* (61b)) are base-generated VP-internally, as in (62).

- (62) [e] è [_{VP} [_V piaciuta la musica] a Gianni]
(Belletti & Rizzi (1988))

A second characteristic of unaccusative verbs in many languages is their incompatibility with passive. The property is discussed by Perlmutter and Postal (1984), Perlmutter and Zaenen (1984), Marantz (1984), Burzio (1986), and Baker, Johnson and Roberts (1989), among many others. Though the researchers offer different accounts with respect to this incompatibility, at the core of all accounts is the fact that verbs that do not have the base-generated external argument cannot undergo passivization. Since unaccusatives are argued to have derived subjects, they are expected to be incompatible with passive. As seen in (63b), *escape*-type verbs do not undergo passivization. The examples in (63a) and (63b) are from Pesetsky (1995), after Perlmutter and Postal (1984).

- (63a) Smith’s name escaped us for some reason.
- (63b) *We were escaped by Smith’s name for some reason.

⁶⁰ Though English is not sensitive to this distinction, other languages are. In Dutch, for instance, auxiliary selection is argued to correlate with the unergativity/unaccusativity of the verb (cf. Hoekstra (1984), Everaert (1986), for instance).

⁶¹ One should be aware that the correspondence between unergativity/unaccusativity and auxiliary selection though significant, it is not absolute. For instance, following Benincá and Venelli (1984), Belletti and Rizzi (1988) point out that in the Véneto dialect clitic anaphors can freely co-occur with both *essere* and *avere*. Everaert (1986) points out that in Dutch that though most instances of “inherent reflexives” (i.e. verbs that seem to be frozen in the lexicon with *zich*) take *hebben* (“have”), some of them take *zijn* (“be”).

Just like their English counterparts, *escape*-type verbs in Italian disallow passivization (64) - (65).^{62 63}

- (64a) A Gianni piace questo libro.
to Gianni pleases this book
"This book appeals to Gianni"
- (64b) *Questo libro é stato piaciuto (da Gianni).
this book was appealed by Gianni
- (64c) *(A) Gianni é stato piaciuto (da questo libro).
to Gianni was appealed by this book

(Pesetsky (1995))

- (65a) L' idea é sfuggita a Max
The idea escaped Max
- (65b) *L' idea é stata sfuggita (da Max).
The idea was escaped by Max
- (65c) *(A)Max é stato sfuggito (dall'idea).
Max was escaped by the idea

It is generally agreed in the literatures that *escape*-type verbs do not assign structural ACC. It is also standardly assumed that *escape*-type verbs assign Dative. Unlike in English where the case marking is not morphologically discernible so dative and accusative morphology may end up identical - in Italian, for instance, Belletti and Rizzi's Experiencers of *escape*-type verbs are uniformly assigned Dative Case (e.g. *a Max, a Gianni*). Since the arguments in question are Experiencers and henceforth +animate, this should not be surprising. Languages seem to find ways of marking the +sentience of the Experiencers. Notice, for instance, that in Icelandic - a language superseding Slavic, Romance, or other Germanic Languages in the sheer number of verbs governing Dative Case - the semantic correlation between Experiencer/Recipient/Benefactor roles and morphological Dative is significant. It has also been noted in the literature (cf. Sigurðsson (1989) and Maling (2002) and the references there) that certain predicates exhibit case alternations with respect to whether the subject is Experiencer or not. Namely, the subject is marked Dative if it is Experiencer (66a), but Nominative if the argument is Theme, for instance (66b).

⁶² Bear in mind that Pesetsky (1995) successfully argues that the counterpart of Italian *piacere* is not *please*, but *appeal* in English.

⁶³ Unlike English, Italian patterns with German or SC, for instance, in disallowing the suppression of Dative Case. Consequently, in isolation, this could be the reason for the ungrammaticality of the outputs in (64c) and (65c). Such an account, however, will not extend to explain the English data like (63b) nor will it account for the data like (65b) and (66b).

- (66a) Henni *batnaði* strax.
She-Dat recovered immediately
- (66b) Veðrið *batnaði*.
The weather-Nom improved (Maling (2002))

Finally, the *págufallsýki* ‘dative-sickness’ - the spread of dative which affects the case-marking of Experiencer subject is pervasive in Icelandic (cf. Smith (1994) and Maling (2002)). Namely, the inherent accusative on Experiencer subjects of the so-called impersonal verbs, e.g. *dreyma* –“dream”, *langa* “want” has been giving way to either Dative or Nominative since at least the 19th century. Maling (2002) notes that the spread clearly reflects the psychological reality of the correlation between dative case and the thematic role Experiencer that native speakers share. Even more striking evidence for the correlation comes from the instances of Dative Case replacing default Nominative on the subjects of psych-verbs like *hlakka* ‘look forward to’ and *kviða fyrir* ‘be apprehensive about’. Since English lacks any direct morphological evidence for the Case of ‘escape’ and in the light of arguments presented here, I will proceed by assuming that the Experiencer in *The idea escaped Peter* is assigned Dative.

In the Theta System, the feature cluster specification of *escape*-type verbs is given in (67). The ‘identity-card’ of *escape*-type verbs (67) captures that fact that both arguments of *escape* are merged internally. Recall that by Marking Instructions, all [-] are be marked with the index 2. In interpretative terms, the fact that both of the clusters are encoded with a /-c feature captures the noted lack of causality of any of the *escape*-type verbs (cf. Pesetsky (1995)). Namely, the way the clusters are encoded in (67) captures the fact that neither of the participants assigned these clusters establishes a causal relation with the verb.

- (67) *escape*: ([-c-m], [-c])

In the Theta System, *escape* allows two derivations: (68a) and (68b).

- (68a) The *idea*_i escaped t_i Max
- (68b) Max_i escaped the police t_i (Reinhart (2002))

The difference between the two derivations in (68) is that in (68a), it is the Theme argument – *the idea*- that moves, and in (68b), it is the [-c] argument – *Max*- that moves.⁶⁴

Having established the ‘identity card’ of *escape*-type verbs, let us turn to the following pairs of sentences:

⁶⁴ For the movement analysis, cf. Reinhart (2002), section 1.2.4.

- (69a) The solution_[-c-m] escaped Max_[-c]
- (69b) *The solution_[-c-m] escaped the desk_[-c]
- (70a) Max_[-c] escaped Mary/the police/the tornado_[-c-m]
- (70b) *The paper_[-c] escaped Mary/the police/the tornado_[-c-m]

It is striking to notice that whereas (69a) and (70a) are perfectly acceptable, (69b) and (70b) are – at best – extremely odd. Neither (69b) nor (70b) can be accounted for in terms of the Non-Identity or Cluster Distinctness Constraint. On the one hand, participants (*the paper* and *the tornado*) are assigned unique roles. On the other hand, a [-c] and [-c-m] cluster are not indistinct by the CDC.

Notice first that the restriction illustrated in (69b) and (70b) is not a formal restriction. The restriction in (69b) and (70b) is a selectional restriction or is of the s-selection type. It seems that the participants assigned the [-c] role in (69) and (70) must be animate. The notion selectional restriction was introduced by Chomsky (1965) to account ‘oddness’ of cases such as the famous (71) from Chomsky (1957).

- (71) Colorless green ideas sleep furiously.

In Chomsky (1965), it was argued that the lexical entry of *think* or *drink*, for instance, carry the information – ‘selectional features’- that pertains to the semantic sub-categorization of its arguments, e.g. that their subject is an animate being (+animate). NPs, on the other hand, were assumed to receive feature specification from their head nouns. A head noun like the *idea* in (71) is marked as +abstract. Since *sleep* in (71) carries the selectional specification -abstract or +animate, the violations would arise from mismatches between features.

It is standardly assumed that anomalous sentences like (71) are semantically ill-formed. It is important to stress that the semantic ill-formedness of anomalous sentences is a very peculiar one. One cannot discard most of the anomalous sentences as contradictions. There are ways of interpreting most of the anomalous sentences. The most adequate description of the majority of anomalous sentences seems to be that they are inappropriate for use in most contexts. Consequently, I will say that outputs like (69b) and (70b) infelicitous, unless in the ‘fairy-tale context’. For instance, in a ‘fairy-tale context’, something like (72) can be perfectly true.⁶⁵

⁶⁵ Some of the selectional restrictions that are derivable in terms of causal relations are easy to capture in terms of theta-selection. The cluster marked 1 of both *drink* and *think* contains a /+m feature. In the case of *drink*, it is a [+c+m] cluster, whereas in the case of *think* it is a [+m] cluster. If the participant assigned this role cannot be perceived as ‘sentient’, the output will be infelicitous. The restriction like +concrete (or perhaps even +liquid) originally proposed for the object of *drink* seems to be a part of the meaning of *drink* in the sense that *drinking* can only be predicated of certain sorts of objects. This type of information is not derivable in terms of theta selection, and, thus, not in the Theta System.

(72) The cunning paper escaped the tornado.

If one looks at the base entry for *escape*, however, the source of this selectional restriction will not be obvious. Neither [-c-m], nor [-c] impose any animacy requirements on the type of participants they can be assigned to. It is only the feature /+m that entails animacy. Since neither of the two roles has this feature, animacy of the participants should not be among the requirements. The ‘animacy restriction’ is a one-way implication. Namely, the feature /-m neither imposes nor excludes animacy of the participant. Consequently, the theme argument (i.e. [-c-m]) creates no problem regardless of whether the participants assigned this role are animate or inanimate (cf. (70a)). It is, however, quite surprising that a [-c] role seems to impose restrictions on the animacy of the participants (as observed in (69b) and (70b)).

To account for this type of puzzle, the set of assumptions about feature clusters will be expanded to include a new assumption – the Full Interpretation of Thematic Roles.

4.4 The Full Interpretation of Thematic Roles

Recall that formally thematic roles can be fully specified or underspecified. Recall also that with respect to the CS, the impact of both fully specified and underspecified clusters is straightforward.

In interpretative terms - unlike fully specified clusters - underspecified clusters were argued to be potentially problematic. Namely, recall that, conceptually, the existence of underspecified clusters may pose a problem since the system seems to allow, at the interpretative level, two distinct participants to realize identical thematic relations. Recall that the [-c] role can be interpreted as [-c-m] since it is ambiguous in that it is consistent with more than one thematic cluster. This would, in turn, violate the Identity Constraints giving rise to illegitimate semantic representations. For example, given a verbal entry like *appeal* that selects both a [-c-m] and a [-c] clusters, if nothing prevents [-c] from being interpreted as [-c-m], then *The idea appealed to Max* would entail *Max appealed to the idea*. As noted by Parsons (1990), however, such ‘symmetric’ – mutual - entailments do not seem to occur in natural language. Consequently, there must be a mechanism preventing such violations from occurring.

As we will see shortly, the ‘underspecified’ cluster must be expanded – a [-c] role cannot be interpreted at ‘face value’ as [-c].

To tap into this mechanism, the following principle needs to be added to the assumptions of the Theta System:

- (73) Full Interpretation of Thematic Roles (henceforth: FITR)
For the purposes of interpretation, all clusters must be fully specified.

The FITR is a mechanism that applies to underspecified clusters to render them fully specified. By (73), underspecified clusters must be expanded. The FITR is guided by the Non-Identity Constraint i.e. underspecified clusters are expanded so that The Non-Identity Constraint can apply to check that they are not identical to other clusters of the same predicate. Consequently, an underspecified cluster [+ α] is expanded to yield either [+ α + β] or [+ α - β].⁶⁶

4.4.1 The Intuition behind the FITR

Before pursuing the idea of the FITR further, let us check the intuition behind it. Let us take the following example:

- (74) Nixon gave Mailer a book. (Oehrle (1976))

As noted in the literature (cf. Oehrle (1976) and Pesetsky (1995)), there are two distinct readings for (74): Agentive - whereby Nixon either lends a book to Mailer or gives it to him as a present, and Causative – which Oehrle paraphrased as follows: “Mailer wrote a book which he wouldn’t have been able to write if it hadn’t been for Nixon”.

In terms of thematic clusters, the external role of *give* must then be an underspecified [+c] role, rather than the standardly assumed Agent [+c+m]. If the intended reading is Agentive, the [+c] role will be expanded to yield [+c+m], as in (75a). If, on the other hand, the intended reading is Causative, the [+c] role will be expanded to yield [+c-m], as in (75b).

- (75a) Nixon_[+c+m] gave Mailer a book.

- (75b) Nixon_[+c-m] gave Mailer a book.

Notice that under either of the truth conditions (cf. Oehrle (1976)), the underspecified role gets to be expanded to a fully specified cluster.

⁶⁶ Technically, the FITR is not subject to the Non-Identity Constraint, but is an independent mechanism that is a part of the interpretative procedure at the C/I interface.

4.4.2 Motivating the FITR

Let us now check further evidence for the FITR. As a first step, let us examine *escape*-type verbs.

4.4.2.1 The Solution to the Selectional Restriction with Escape-type Verbs in Terms of the FITR

Though the Goal role is formally underspecified (i.e. [-c]), the FITR requires it to be fully specified as either [-c+m] or [-c-m]. If the FITR were to expand it into a [-c-m] cluster, the Non-Identity Constraint would be violated. Namely, the output it would create would contain two identical theta roles. Consequently, the only expansion a [-c] can get is [-c+m]. If the participants assigned this role are *bona fide* +animate – everything will work out fine (cf. (76a) and (76c)). If not, the output will be infelicitous (cf. (76b) and (76d)).

- (76a) The solution_[-c-m] escaped Max_[-c+m]
 (76b) *The solution_[-c-m] escaped the desk_[-c+m]
 (76c) Max_[-c+m] escaped Mary/the police/the tornado_[-c-m]
 (76d) *The paper_[-c+m] escaped Mary/the police/the tornado_[-c-m]

In terms of the FITR, it becomes, now, perfectly clear why (77) is only acceptable in ‘the fairy-tale context’.

- (77) The cunning paper_[-c+m] escaped the tornado

Other verbs that pattern with *escape* like *appeal to*, *occur to*, and “*matter to* do not allow for both of the syntactic derivations, but they do show the same restriction with respect to the participant assigned the [-c] cluster (78). Just like in the case of *escape*, the FITR expands the underspecified [-c] into the [-c+m] cluster with the verbs in (78). Since the relation which the participant assigned the [-c] cluster in (78) establishes with respect to *appeal*, *occur* and *matter* is that of Experiencer, this is the desired output.⁶⁷

- (78) This idea_[-c-m] appeals /occurs/matters to Max_{[-c]→[-c+m]}

⁶⁷ Finally, in terms of the FITR, the criticism of the Theta System in terms of its inability to capture the ‘sentient’ i.e. Experiencer-flavor of [-c] roles of *escape*-type verbs (cf. Landau (2001)) disappears.

The analysis of *escape*-type verbs is also pertinent to the issue of the type of the requirement the FITR is. The FITR is an interpretative requirement. Firstly, recall that anomaly is a case of semantic ill-formedness. Secondly, recall that the impact of underspecified clusters to the syntax is as straightforward as the impact of fully specified clusters. There is no syntactic need to expand the underspecified clusters. Last but not least, notice that based on the analysis of *escape*-type verbs, the FITR, indeed, cannot apply prior to the marking procedures (procedure that gives instruction to syntactic Merge). Namely, if it were to apply prior to marking one would expect *escape*-type verbs to have an external argument. By the FITR, the [-c] cluster of *escape*-type verbs is expanded to yield [-c+m]. Be reminded that mixed clusters can merge externally or internally. If the FITR were to apply before marking, [-c+m] would be forced to merge externally (since no role of the basic entry *escape* is assigned index 1).

4.4.3 Predictions

The FITR does not restrict the set of possible verbal concepts. Indeed, we could hypothesize that there are verbal concepts that end up unrealizable. The FITR cannot help us in defining the set of possible verbs or concepts. It can, however, predict the set of realized concepts. Firstly, one would expect a highly restricted number of theta roles to realize on an entry. This prediction is empirically attested. The standard assumption that there is no verb with more than four arguments follows straightforwardly from the FITR. Namely, by the FITR, only four fully specified roles can realize on the same entry.⁶⁸ The second prediction is that the animacy requirement observed with the *escape*-type verbs should be found in other instances where the verbal concept contains both a [-c-m] role and a [-c] role. To test the validity of this claim, alternating verbs will be examined. The third prediction of the FITR is that in the presence of a [-c+m] role, a [-c] cluster will be expanded as [-c-m] and no animacy restrictions should be observed. To investigate the validity of this claim, *accustom*-type verbs will be examined.⁶⁹

⁶⁸ There are certain restrictions on realizations of clusters that do not relate to the FITR. On the one hand, due to the Case reasons, [-c-m] and [-c+m] do not normally generate together on a three-place grid that contains a [+] cluster. They are expected to co-occur on two-place grids where the [-c+m] cluster can generate externally. On the other hand, due to the particular nature of the instrument role - due to the principle that licenses the instrument role - instruments are, most dominantly, generated as adjuncts.

⁶⁹ Other predictions of the FITR are that a [-m] will always be expanded as [-c-m] in the presence of [+c-m] and as a [+c-m] in the presence of a [-c-m]. Since no animacy conditions can be observed in these cases, these predictions will not be tested here.

4.4.3.1 Alternating Verbs: Dative Alternation

Alternating verbs are the ideal testing ground for the second prediction since they occur with both a Theme [-c-m] and a dative Goal argument [-c].⁷⁰

Give-type Verbs

Give-type verbs have the following feature specification in (79).⁷¹

(79a) *give*: ([+c], [-c-m], [-c])

The external argument is a [+c], which means that it can realize as either an Agent [+c+m] or a Cause [+c-m]. That latter interpretation surfaces in Oehrle-type examples like *The Interview gave Mailer a book* (Oehrle (1976), Pesetsky (1995)). It is interesting to notice that with the *to*-alternation, only the [+c+m] construal is possible. Since the behavior of this cluster does not concern us here, let us spell it out as [+c+m] in (79b) and (79c).

The kind of puzzle posed by the [-c] role on the grid of these verbs is illustrated in (79b) and (79c).

(79b) Max_[+c+m] gave the book/the baby_[-c-m] to Lucy_[-c]

(79c) *Max_[+c+m] gave the book/the baby_[-c-m] to London_[-c]

The Goal role [-c] is underspecified with respect to the /+m feature. Since a /+m feature is not present in the Goal cluster, no animacy restriction should be observed. Notice, however, that this is not the case. Namely, the output in (79c) is not acceptable.

The FITR gives us a straightforward explanation for the restriction. The underspecified [-c] cluster must be expanded as [-c+m] (due to the Non-Identity Constraint). If the participant assigned this role can be endowed with a /+m feature, the output is acceptable. If not, the output is not acceptable, unless, of course, one is in the 'fairy-tale' context as in (80):

(80) The dwarf_[+c+m] gave the unicorn baby_[-c-m] to the good tree_[-c+m]

⁷⁰ Unlike the fully-specified [-c+m] cluster, the [-c] cluster cannot trigger the ACC marking on the verb. Unlike [-c+m] and [-c-m] roles, a [-c] role cannot check the thematic accusative (cf. Reinhart and Siloni (2003)).

⁷¹ The classification of verbs is given as standardly assumed (cf. Levin (1993), for instance). Note, however, that *give* is among the rare verbs in this group that has a [+c] and not a [+c+m] cluster on its grid. Since the feature specification of this cluster is not relevant for our discussion here, I am glossing over this issue.

Let us take a look at a few more examples that get their straightforward explanation in terms of the FITR.

(81a) Max_[+c+m] gave all his money_[-c-m] to one of his charities_[-c]

(81b) Max_[+c+m] sold his dog_[-c-m] to the police_[-c]

Although *one of his charities* and *the police* might seem like inanimate participants, they are not. Compare (81a) to (82a) and (81b) to (82b).

(82a) *Max_[+c+m] gave all his money_[-c-m] to one of his accounts/to that place_[-c]

(82b) *Max_[+c+m] sold his dog_[-c-m] to the building/to that place_[-c]

From the unacceptability of (82), it should be clear that *one of his charities* and *the police* carry the +animate flavor. It seems obvious that one is not talking about the *accounts* or *buildings*, but rather about the *people who work for the charity* and *the people who work for the police*, respectively. Consequently, the [-c] cluster in (81a) and (81b) is expanded as indicated in (83a) and (83b).

(83a) Max_[+c+m] gave all his money_[-c-m] to one of his charities_[-c+m]

(83b) Max_[+c+m] sold his dog_[-c-m] to the police_[-c+m]

Verbs that pattern together with *give* are *feed*, *lease*, *lend*, *loan*, *pay*, *peddle*, *refund*, *rent*, *repay*, *sell*, *serve*, and *trade*, for instance.

Send-type Verbs

‘The feature specification of these verbs is given in (84).⁷²

(84) *send*: ([+c+m], [-c-m], [-c])

As with the *give*-type verbs, the only possibility for the [-c] role of *send*-type verbs is to be expanded to yield [-c+m]. As seen from (85), if the participant can be endowed with a /+m feature, the output is felicitous. If not, the output is not acceptable.

(85) Max sent Mary/*the building_[-c] the book_[-c-m]

⁷² The difference in the feature specification of the external role of *give*-type verbs and *send*-type verbs does not bear any relevance for the discussion here.

As with the *give*-type verbs, the seemingly inanimate participants can be assigned the [-c] role (86).

- (86) Bill sent London a package. (Levin (1993))

The example in (86) comes with a telling explanation. “The notion of animate extends to include organizations and corporate bodies. Sentence is acceptable if *London* is used to represent - via metonymy - the London office or a company or the British Government” (Levin (1993)). In other words, it is acceptable if *London* in (86) is interpreted as having a +animate flavor ([-c+m]).

To sum up, if the analysis here is correct then *send*-type verbs behave *on a par* with *give*-type verbs. Namely, due to the FITR, the [-c] role needs to be expanded as either [-c+m] or [-c-m]. Due to the ban on the realization of two identical theta roles (i.e. The Non-Identity Constraint), a [-c] role of *send*-type verbs must be expanded as [-c+m]. Consequently, the participant carrying this role will necessarily be interpreted as having a +animate flavor.

A sample of verbs that patterns with *send* includes *forward*, *mail*, *hand*, *post*, *ship*, *slip*, *smuggle*, and *sneak*.

Send-type verbs, however, are more intriguing from the standpoint of the FITR. There is an interesting difference between the behavior of *give*-type verbs and *send*-type verbs. Namely, (87) is a perfectly acceptable output that “mirrors” (79b).

- (87) Max_[+c+m] sent a book_[-c-m] to Lucie_[-c+m]

However - contrary to (79c) - (88) is also a perfectly acceptable output.

- (88) Max_[+c+m] sent a book_[-c-m] to London_[?]

Note, further, that - unlike in (86) - it is clear that ‘London’ in (88) is not interpreted as metonymical to some group of people. If it were to be expanded by the FITR, then the role assigned to *London* would have to be [-c-m]. This, on the other hand, would be a direct violation of the Non-Identity Constraint since two [-c-m] roles can co-realize. Cross-linguistically, we know of no exceptions with respect to the Non-Identity Constraint. Should we, then, take (88) as counterevidence to the existence of the FITR? The answer to this question is negative. An alternative path whereby the Non-Identity Constraint is not operative in (88) will be explored in Section 5. For the time being, let us, then, continue by testing the predictions of the FITR that were given in 4.4.3 of this Chapter.

4.4.3.2 *Accustom-type verbs*

Recall that the third prediction of the FITR is that in the presence of a [-c+m] role, a [-c] cluster will be expanded as [-c-m]. To corroborate this claim, *accustom*-type verbs will be examined. In the Theta System, the thematic composition of *accustom*-type verbs is given in (89).

- (89) *accustom* : ([+c], [-c+m], [-c]).

As seen in (90), the internal argument of *accustom*-type verbs is, indeed, a [-c+m] cluster. It requires the participant to be animate and it checks the thematic ACC and requires. The third argument is a [-c] role.⁷³

- (90a) Lack of money accustomed him/*the desk_[-c+m] to cheap
food/cheap women_[-c]
- (90b) Wealth_[+c] habituated Max_[-c+m] to luxury_[-c]

If the FITR holds, one would expect this [-c] role to expand to either [-c-m] or [-c+m]. Since the FITR is guided by the Non-Identity Constraint, this role will obligatorily be expanded to [-c-m]. If the role is, indeed, expanded to [-c-m], one would expect both +animate and -animate participants to be perfectly acceptable. As seen in (90), this prediction is born out.

Verbs that pattern with *accustom* are *acclimatize*, *alienate*, *estrangle*, and *habituate*.

To summarize, the FITR restricts the number of thematic roles that can realize on a verbal entry (cf. 4.4.3). It also provides us with the explanation of the long-standing puzzle of ‘animacy restriction’ with *give*- and *send*-type verbs and, allows us to explain why *accustom*-type verbs are not expected to exhibit this type of restriction. Recall that participants must stand in a distinct relation to the event. As already noted, ‘underspecified’ clusters do not present distinct relations since they are not well-defined. Consequently, they must be expanded. The claim here is the following: fully specified clusters represent unambiguous (i.e. well defined) relations, whereas underspecified roles do not. For instance, a [-c] cluster is an ‘ambiguous shorthand’ for [-c-m] and [-c+m]. Consequently, the FITR must apply in order for the relation between the participant assigned an underspecified role and the event in question to become well defined.

⁷³ The other logical option for this cluster would be [-m]. Recall, however, that [-m] and [+c] cannot felicitously realize on the same entry due to the Cluster Distinctness Constraint. Recall that the [+c] and [-m] roles of *worry*-type verbs do not felicitously co-realize in the same derivation (i).

- (i) */??Max_[+c] worried Peter about his health_[-m]

4.4.4 Teach-type Verbs in English and SC

To elaborate further on the underpinning of the FITR, let us examine the verb *teach* in English and its SC counterpart. In both languages, the external argument of teach-type verbs is a [+c] role.⁷⁴ In English, the PP-alternate indicates that *a nice song* is assigned a Theme (i.e. [-c-m]) role, and *us* is assigned a Goal (i.e. [-c]) role (91b).⁷⁵

(91a) A nice song was taught to us.

(91b) We were taught a nice song (by the professor)

Consequently, the grid of *teach* in English is given in (92)

(92) *teach*_Z: ([+c], [-c-m], [-c])

Following the discussion so far, I assume that the FITR expands the [-c] role to [-c+m]. If the participant assigned this role is +animate, everything is fine. If not, the output is not felicitous (93).

(93) The professor taught us/*the desk a nice song.

The verb *teach* in SC, however, seems to exhibit slightly different behavior. First, both *us* and *a nice song* in (94), appear to be marked with a morphological accusative.⁷⁶

(94) Profesor nas/acc je naučio jednu lepu pesmicu/acc.
Teacher us-acc is-AUX.CL taught-part.sg.m one nice song-acc
'The teacher taught us a nice song.'

With respect to passivization, SC *teach* shows an even more puzzling behavior. Whereas the *one nice song* in (94) will not be available for passivization - as seen in (95b) - *us* from (94) is (95a).

(95a) Mi smo naučeni jednoj lepoj pesmici.
we-Nom are-AUX.CL taught-Part.PL.Masc. one nice song-Acc
'We were taught a nice song.'

⁷⁴ In both languages, the external argument of *teach* allows for both Agentive and Causative reading.

⁷⁵ Whether this relation is actually more Experiencer or Benefactor than Goal is irrelevant here. The fluctuation between the Goal and Experiencer is well noted in the literature. This should not come as a surprise since both are [-c+m], the desired result after the FITR has applied.

⁷⁶ There are only a handful of verbs that pattern with *teach* in SC: *pitati* "ask" and *moliti*, roughly, "ask politely" are among them.

- (95b) *Jedna lepa pesmica nas je naučena.
 one nice song-Nom us-Acc is-AUX.CL taught-Part.Sg.Fem.

Since only structural case can be suppressed through passivization in SC, I conclude that *us* is associated with structural ACC, whereas the case marking on *one nice song* is inherent. To corroborate the fact that the accusative on *one nice song* is somewhat quirky, one should also notice that, in some cases, this argument surfaces with morphological Dative (96).⁷⁷

- (96) Profesor nas je naučio jednoj lepoj pesmici.
 professor-Nom us-Acc is-AuxCL taught-Part.Sg.Masc. a nice
 song-Dat
 ‘The professor taught us a nice song.’

Consequently, in SC, the Theme is encoded as a [-c] cluster, whereas the Recipient Goal/Experiencer is encoded as a [-c+m] cluster (97).

- (97) *naučiti* (teach): [+c], [-c+m], [-c]

It is worth noting that SC is not unique with respect to the fact that Dative can be associated with Theme arguments. Though not in great numbers, Dative Theme arguments exist in Icelandic (cf. Maling (2001), (2002)) and German, for instance. Note, further, that the [-c+m] is one of the instantiations of the [-c, α] cluster. As such, its presence ensures that one of the conditions for ACC marking is met (cf. Chapter 1; 2.2.5). Further, as already noted, unlike [-c], [-c+m] can check the ACC feature of the verb.⁷⁸

Though the grids of SC *teach* and English *teach* are somewhat different, notice that the relation between the participant *a nice song* and the event of teaching as well as the relation between the participant *us* and the event of teaching in both languages are the same.⁷⁹ How can this be accounted for?

Recall, first, that the [-c] role is an ‘ambiguous shorthand’ for [-c-m] or [-c+m]. Prior to the application of the FITR, the relation between the participants assigned this role and the event of *teaching* (in either English or SC) is ambiguous in the

⁷⁷ As seen in (i), sometimes the inherent Accusative is not even available for the argument.

- (i) Profesor nas je naučio lepim manirima-Dat/*lepe manire-Acc
 the professor taught us good manners-Dat/*good manners-Acc

⁷⁸ For an elaborate discussion, the reader is referred to Reinhart and Siloni (2003).

⁷⁹ Though it is outside of the scope of our discussion here, let me note that the abstract concept TEACH is not the only concept that is encoded differently across different languages. In other instances that I am familiar with, the permitted differences among languages go as far as the underspecification of one of the clusters, just like in the case of TEACH here.

sense that it is opened to two distinct interpretations: [-c-m] and [-c+m]. After the FITR applies, the relation between the participants assigned the [-c] role in English and SC will be disambiguated. Due to the Non-Identity Constraint, it will be expanded to yield [-c+m] in English, whereas in SC it will be expanded to yield [-c-m]. Consequently, the semantic representation for both English and SC looks, roughly, as in (98):

- (98) $(\exists e)$ [teaching(e) & [+c+m] (e , the professor) & [-c+m] (e , us) & [-c-m] (e , a nice song)]

To sum, every participant of an event stands in a distinct relation to that event. For a relation to be distinct –with respect to other relations - it must be unambiguous. It cannot be consistent with more than one thematic role. Underspecified clusters are ambiguous in that they can stand for more than one relation. The FITR needs to expand underspecified clusters so they could result in unambiguous, well-defined relations. Expanding turns ambiguous underspecified clusters into unambiguous fully specified clusters. The expansion (disambiguation) is guided by the Non-Identity Constraint.

5. A Closer Look at Arguments, Adjuncts, and the FITR

5.1 Dative *To* versus Locative *To*

Section 4.4.3.1 left us with one mystery unexplained. Namely, the question was raised about the treatment of examples like (99a) and (99c).

- (99a) $\text{Max}_{[+c+m]}$ shipped his clothes $_{[-c-m]}$ to $\text{NY}_{[?]}$
- (99b) $\text{Max}_{[+c+m]}$ shipped his clothes $_{[-c-m]}$ to $\text{Mary}_{[-c+m]}$
- (99c) $\text{Max}_{[+c+m]}$ sent a book $_{[-c-m]}$ to $\text{London}_{[?]}$
- (99d) $\text{Max}_{[+c+m]}$ sent a book $_{[-c-m]}$ to $\text{Mary}_{[-c+m]}$

Recall that Gruber (1967), Fillmore (1986), and Jackendoff ((1972) and subsequent work)) posit the existence of the abstract GOAL relation that encompasses both the relation of the abstract change of property (i.e. Recipient Goal (99b) and (99d)) and a physical change in location (locative Goal (99a) and (99c)).⁸⁰ The set of primitives in Jackendoff (1987) consists of five functions: GO, BE, STAY, CAUSE, and LET. Representation of any verb is given in terms of one or the permissible combination

⁸⁰ The labels ‘locative Goal’ and ‘Locative *to*’, are used here interchangeably for PPs that are headed by *to* and have a directional meaning as in (99a) and (99c).

of the functions. For instance, the common element in the semantic representation of (100a) and (100b) is the function GO in (101).

(100a) The hawk flew from its nest to the ground

(100b) Harry gave the book to the library (Jackendoff (1987))

(101a) GO_{positional} (THE HAWK, NEST, GROUND)

(101b) GO_{possessional} (THE BOOK, HARRY, THE LIBRARY)

As seen in (101), the difference between (100a) and (100b) is represented by means of restrictive modifiers on the semantic function. Locative modes: Position, Possession, and Identification are restrictive markers on the functions. The combination of the three modes with each function yields a particular class of verbs. The functions and the markers are semantic primitives common to all languages. For physical motion, the modifier is *Positional*, for verbs of possession, the modifier is *Possessional*.⁸¹

The functions GO makes the claim that an event consisting of the motion of x from y to z has taken place. The first variable of GO corresponds to the Theme (i.e. the moving object), the second to the Source (initial position, objects of the preposition *from*), and the Third to the GOAL (final position, objects to the preposition *to* or *into*). Thus, in (101a), THE HAWK is the Theme, HARRY is the Source, and GROUND is the GOAL. In (101b), THE BOOK is the Theme, HARRY is the Source, and THE LIBRARY is the Goal. The marker Positional indicates that the Location (Source) and Goal specify WHERE the Theme is, and the marker Possessional indicates that they specify WHOSE the Theme is.

Jackendoff's analysis gained wide support. It is evident that some sort of intuitive relatedness exists between (100a) and (100b) i.e. that some sort of transfer is taking place in both (100a) and (100b). The critics have, however, often pointed out that instances of abstract GOAL differ so radically in their semantics that it is far from obvious to explain how the interpretative component would determine which meaning GOAL has in a particular example. For instance, Dowty (1996) notes that *kick the ball to the fence* cannot mean that the fence acquires possession of the ball, any more than *Mary explained the memo to John* can mean that the memo itself moved to John's location" (Dowty (1996): 9)).

⁸¹ I am ignoring the *Identificational* mode of the function GO (e.g. *the metal melted*) and *Circumstantial* location since they bears no relevance to the discussion of Dative versus Locative Goals. The reader is referred to Gruber (1967), Jackendoff (1972), (1987), for instance.

Furthermore, instances that should have the same restrictive modifier on the same semantic function do not actually seem to be easily captured together. Let us first take a look at (102). In Jackendoff's system, an implication that the Recipient possesses the transferred entity after reception (102b) should always be present.

- (102a) Phil gave the bill to Cathy.
CAUSE (PHIL, GO_{poss} (THE BILL, PHIL, CATHY))
- (102b) Bill had the bill, and then Cathy had it.

This however, is not the case. For instance, as noted by Goldberg (1995), the implication that the Recipient actually possesses the transferred entity after reception, is simply absent even in the cases like (103).

- (103a) Jo gave Mary an insult. (Goldberg (1995))
- (103b) This book gives me pleasure.

The Possessional modifier should - though it is not clear how - extend to the data in (104).

- (104a) Phil offered the bill to Cathy.
- (104b) Mary explained the memo to John.
- (104c) Phil refused the hearing to the prisoner.
- (104d) Phil denied requests to all of them. (Dowty (1996))

Provided the choice of the preposition *to* usually indicates Goal (as stated in Jackendoff (1987)), it is also unclear how the abstract GOAL relates to the following types of examples:

- (105a) It seems to me that he is unhappy.
- (105b) His idea appeals to me.

However, along with the criticism of Jackendoff's system, Dowty (1996) points out an important valuable insight of the system – the insight about the relatedness that exists between Dative and locative Goals. As argued by Dowty, there is evidence that there is some deeper connection between Locative and Non-Locative Sources and Goals. For instance, Dowty points out that language-acquisition studies like that of Clark & Carpenter (1989) show that English-speaking children make systematic “errors” in acquiring the ways that Source is expressed in English. This, in turn, implies that children, at some stage, work with an underlying Jackendoffian concept of Source and, by extension, Goal.

To sum up, on the one hand, the point of this brief presentation is to show that there is some sort of relatedness between Dative Goals and Locative Goals. Consequently, one should preferably try to preserve it. On the other hand, the point of this brief presentation is to point to the facts that even the most elaborate and rich machinery – like the system of Jackendoff is – does not seem to be able to capture all the data that need to be captured.

Consequently, in what follows, I will restrict myself to accounting for the data in (99a) – (99b) that are directly relevant for our discussion here. At the same time, I will try to account for the data by leaving the insight that there is some deeper connection between dative and directional phrases that can be preserved. To maintain the insight, I will allow for the option that both Dative Goals and Locative Goals are encoded as [-c]. Though I will limit the discussion here to the data relevant for our investigation, the discussion has broader implications, since – unlike Dative Goals – Locative Goals are not given any treatment in the Theta System.

5.2 Adjuncthood of Directional PPs

Let us first present the problem that (99a) – (99d) raise. As already said, I will hypothesize that both the Recipient Goal and the directional-goal are encoded as [-c]. Provided this is true, and provided the FITR expands ambiguous – underspecified clusters, one would expect the FITR to expand the locative Goal cluster, just like it expands the Recipient Goal cluster. As neither *NY* in (99a) nor *London* in (99c) carries animate flavor, the FITR would have to expand the Locative Goal cluster to [-c-m]. If this were the case, the derivations in (99a) and (99c) would be illegitimate since one would end up with two identical theta roles. Since there are no known exceptions to the Non-Identity Constraint, one could interpret examples in (99a) and (99c) as directly falsifying the existence of the FITR. Such an argument would leave us completely puzzled regarding the animacy ban in the Double Object Construction that receives an account in terms of the FITR, but it would, nonetheless, constitute a strong argument against the existence of the FITR.

There are, however, alternative solutions to the Locative Goal mystery. In what follows, I will present two such alternatives (i.e. hypothesis A and hypothesis B); both of which share the premise that Locative Goals like the ones in (99a) and (99c) are adjuncts. The second premise for Hypothesis A is that adjuncts are not feature clusters. What follows from these two premises is Hypothesis A: Locative Goals are not feature clusters. If they are not feature clusters, they are not encoded in the Theta System. If they are not encoded in the Theta System, they must be exempt from all the rules that govern the co-occurrences of feature clusters. The second premise for the hypothesis B states that only elements of the same status count for the Non-Identity Constraint. The hypotheses in effect test the validity of the Non-Identity Constraint as defined in (42). What follows from the two premises of the Hypothesis B is the following: in terms of the Non-Identity Constraints, Locative Goals and

Dative Goals do not count *on a par*. Hypothesis B is silent with respect to whether adjuncts are feature clusters or not, but it disallows elements of different status to count *on a par* with respect to the Non-Identity Constraint.

Since both approaches share the premise that Locative Goals are adjuncts, let us start the discussion by examining the validity of this premise. Let us start by taking a closer look at PPs in (99a) and (99b) repeated here as (106a) and (106b). The claim here is that the Recipient Goal (106a) is an argument whereas locative Goal (106b) is an adjunct. It is standardly assumed that adjuncts and arguments differ in their semantics and in their syntax. If their status is syntactically different, one would expect them to exhibit different syntactic behavior.

(106a) Max sent a book to Lucie.

(106b) Max sent a book to NY.

As seen in (107a) and (107b), these two prepositional phrases do not behave the same way, syntactically. Namely, whereas *Lucie* in (107a) participates in the Double Object Constructions, *NY* in (107b) does not.

(107a) Max sent Lucie_[c+m] a book

(107b) *Max sent London_[LOCATION] a book

Passive is another environment where Recipient Goals and locative Goals do not behave in the same way in English. Compare (108a) with (108b).

(108a) Lucie_[c+m] was sent a book_[c-m] (by Max)

(108b) *London_[LOCATION] was sent a book_[c-m] (to) (by Max)

It is standardly assumed that - unlike arguments (cf. *Lucie* in (108a)) - adjuncts (cf. *NY* in (108b)) are not expected to undergo passivization. The ungrammaticality of the example in (108b) is particularly striking if one recalls that passivization with prepositional verbs (109a) and even with the so-called pseudo-passives (109b) is available in English.

(109a) The play was not cared for (by Max).

(109b) This bed was slept in (by Max).

The outputs like (109b) have been analyzed as instances of P-incorporation (cf. Jaeggli (1986a), Neeleman (1996)). If, indeed, the preposition in (109b) incorporates into the verb, one would not expect such verb-preposition complexes to be 'interrupted' by other material. Indeed, as seen in (110b), the complex cannot be broken up with an adverbial.

(110a) John slept (comfortably) in this bed.

(110b) This bed was slept (*comfortably) in. (Neeleman (1996))

Notice, however, that on the P-incorporation account (cf. Neeleman (1996), for instance), the DP in (109b) must be an argument of the verb – not an adjunct. Jaeggli and Neeleman, the DP in question is assigned its theta-role jointly by the verb-preposition complex. Importantly for our discussion, it must be the argument of the verb *sleep* in (110). Bearing this in mind, compare (110b) to the ungrammatical (111b). *London* in (111) is not an argument of the verb *sleep*. It is assigned the theta-role solely by the preposition *in*. If the DP in (111a) is an adjunct with respect to the verb *sleep*, it should not exhibit the syntactic behavior of an argument. This prediction is borne out. The output in (111b) is completely ungrammatical since adjuncts do not passivize.

(111a) Peter slept in London.

(111b) *London was slept in (by Peter).

To sum, Dative Goals (106a) and Locative Goals (106b) are two distinct constituents. Whereas the latter is an adjunct, the former is an argument of the verb. Dative Goals are fully-fledged argument of the verb. Notice, for instance, that the familiar binding constraint is observed in the case of the Recipient Goal – either when they are realized as DPs (112a) and (112c) or when realized as PPs (112b) and (112d). It is stardardly assumed that the inability to co-index the pronoun *him* and the DP in (112) stems from the fact that *him* is an argument of the verb in question (cf. Reinhart and Reuland (1993)).

(112a) *Max_i gave him_i a book

(112b) *Max_i gave a book to him_i

(112c) *Max_i sent him_i a parcel

(112d) *Max_i sent a parcel to him_i

The type of role assigned to a DP is also indicative that the element in question is in the ‘argument of’ relation to the verb. On Jaeggli’s (1986a) account, the DP (110a) is not just syntactically, but also thematically different from the DP in (111a).

Take, for instance, the derivations in (113a) and (113b). The DP *the bed* in (113a) is interpreted as a Theme – not as a Location. *England* in (113b), on the other hand, cannot be interpreted as Theme. *England* can only be interpreted as a location.

(113a) This bed was slept in by George Washington.

(113b) *England was slept in by George Washington.

(Jaeggli (1986a))

On Jaeggli's account - the verb-preposition complex assigns the role of Theme. If so, *England* cannot be the argument of the verb-preposition complex since it is assigned Locative role – not the Theme role (i.e. the role that the verb-preposition complex assigns). The question that now arises is where does the theta-role of *England* come from? On Jaeggli's account, *England* is thematically dependent only on the preposition *in*. The ability to assign Locative role is not limited to *to* and *in*. Notice, for instance, that the preposition *by* has a dual status in this respect. *By* can appear in passive derivations as well as in active ones. The preposition *by* in passive outputs can easily be analyzed as a semantically vacuous Case assigner (cf. Rooryck (1996)). Its semantically contentfull counterpart (114), however, cannot.

(114) John is killing Mary by Bill.

(Jaeggli (1986a))

The interpretation of (114) is *John is killing Mary in the vicinity/next to Bill*, which, in turn, means that in (114), *by* assigns Locative role to *Bill*. In the light of what has been claimed about the capability of Locative prepositions to assign theta roles, it seems reasonable to maintain the standard assumption that Locative prepositions are semantically contentfull. To further corroborate this claim note that in SC – a language with fully-fledged morphological case system – prepositions are only obligatory in case of Locatives, and not in the case of Recipient Goals. Following the discussion so far, I will proceed by assuming that though locative prepositions can assign theta roles, they are limited to assigning Locative roles.

Translated to our discussion of dative and directional goals, one can conclude that whereas *NY* in (106a) – repeated here as (115a) – is, indeed fully thematically dependent on the preposition *to*, *Mary* in (106b) - repeated here as (115b) is not. Minimally, as assumed by Neeleman (1996), the role is jointly assigned to *Mary* by the verb and the preposition. Alternatively, as I will argue here, it is assigned by the verb alone. I will return to this issue shortly.

What is crucially important for the discussion at this point is that the Locative role assigned to *NY* in (115a) cannot come from the verb, but can only come from the preposition alone. This, in turn, means that the *NY* is an adjunct with respect to the verb *send*.

(115a) Max_[+c+m] shipped his clothes_[-c-m] to NY_[?]

(115b) Max_[+c+m] shipped his clothes_[-c-m] to Mary_[-c+m]

To sum, there seems to be enough evidence to corroborate the validity of the shared premise of Hypothesis A and Hypothesis B, which states that Locative goals in (99a) and (99c) are adjuncts. Whereas the Recipient Goal argument readily passivizes in languages like English and participates in double object construction, the Locative Goal – as would be expected of an adjunct – does not participate in either. Furthermore, the thematic status of Locative DPs is such that the only source for their theta role can be the locative prepositions. This, in turn, makes them adjuncts with respect to the verbs in question.

Let us go back to Hypothesis A. The second premise of Hypothesis A states that adjuncts are not encoded as feature clusters. Let us – just for a moment – take this premise as a valid one. Provided both of the premises are valid, Hypothesis A exempts Locative Goals from all rules that govern the co-occurrences of feature clusters since they are not coded in the Theta System. Namely, it follows that if they are not feature clusters, they are not subject to rules that govern the co-occurrences of feature clusters.

I think that such a treatment is well-suited for adjuncts like the one in (116a).

(116a) Yesterday, Max killed Peter.

How does an adjunct like *yesterday* get its interpretation? I find Parsons (1990) treatment of adjuncts like the one in (116a) highly illuminating. ‘Frame adverbials’ (e.g. *yesterday* in (116a)) are argued to set the frame within which the rest of the sentence is to be interpreted. Parsons provides the following logical form which includes spatial and temporal locatives:

(116b) Frame [(\exists I) [Tense (I) & Time-Constraint (I) & (\exists e) (\exists t) [t \in I & Verb(e) & Role (e)ⁿ & Mod(e)^m & Cul (e,t) & Temporal-Mod(e)]]].

In (117), *in China*, for instance, function as a frame adverbial.

(117) In China, doctors are unpaid (Parsons (1990))

Such spatial and temporal phrases can also combine with the variable I (where I is construed to range over spatiotemporal regions in general and the t ranges over

spatiotemporal points). Following Parsons, the logical form of (118a) is as given in (118b).

(118a) Yesterday, Lucie kissed Max.

(118b) $(\exists \mathbf{I}) [\mathbf{I} < \text{now} \ \& \ \mathbf{I} \subset \text{Yesterday} \ \& \ (\exists e) (\exists t) [t \in \mathbf{I} \ \& \ \text{Kissing}(e) \ \& \ [+c+m](e, \text{Lucie}) \ \& \ [-c-m](e, \text{Max}) \ \& \ \text{Cul}(e, t)]]]$

If several of these adverbials occur together, they all constrain the same variable in the same way. Consequently, *Cul* (e, t) tells us *where* and *when* e culminates. The same seems to be true of locatives (even when they appear as verb modifiers). It has been widely noticed in the literature that several locative-verb modifiers can occur together (cf. Parsons (1990), for instance). The possibility to reiterate such syntactic constituents is of crucial importance for our discussion. Namely, if these syntactic constituents were to be encoded in the Theta System, it would be impossible to explain how they can violate the Non-Identity Constraint. The fact that such elements can be indefinitely reiterated speaks for their exemption from the Non-Identity Constraint since the Non-Identity Constraint can be taken as a crucial test of argumenthood. Recall that only one thematic role of each type can appear in a single sentence. Consequently, one does not find sentences with two distinct Agents or Themes. Multiple locatives, however, do occur together. Notice that such locative modifiers do not need to be interpreted as a single complex. This is one of the standard arguments that they are distinct constituents (cf. (119b) and (119c)).

(119a) Mina met Mel *on the beach in California near the boardwalk*.

(119b) *In California*, Mina met Mel on the beach near the boardwalk.

(119c) Near the boardwalk Mina met Mel on the beach in California.

(Goldberg (2002))

If, by virtue of being adjuncts, these constituents are not encoded in the Theta System, then it follows that they are not expected to be subjects to the rules that regulate the co-occurrences of feature clusters. Consequently, on such an account, the data in (99a) – (99d) would be accounted for by stating that only arguments – and not adjuncts – are encoded in the Theta System. It follows, then, that no rule of the Theta System applies in cases of adjuncts because they are not feature clusters.

Notice, however, that Hypothesis A carries certain problems that need to be addressed. The fact that directionals like the ones in (99a) and (99c) are adjuncts with respect to the verbs in question seems straightforward and clear. The question that arises, however, is whether ‘being an adjunct’ should automatically be equated with ‘not being encoded as a feature cluster’. Namely, it raises the question of whether the second premise of hypothesis A is valid. In some cases (e.g. frame

adverbials), I find that the correlation between ‘being an adjunct’ and ‘not being encoded as a feature cluster’ is absolute and well-grounded. Notice however, that with respect to directional phrases like the ones in (99a) and (99c), this is not so straightforward. Firstly, Parsons (1990) points out that though locatives and directionals can both appear as modifiers, it is only locatives that can be indefinitely reiterated. Secondly, given that every directional adjunct is completely unrelated to dative arguments, why is it that we use the same ‘vocabulary’ to talk about both adjuncts and arguments? In other words, if *to Mary* in (99b) and *to NY* in (99a) are completely different, how is one to explain the intuitive relatedness between the two, which, as we saw, has led many scholars to view them as one and the same abstract role? Finally, though directionals in (99a) and (99c) are adjuncts with respect to the verbs in question, there is nothing to exclude that they are arguments with respect to the preposition *to*.

Bearing this problem in mind, let us see whether Hypothesis B takes us further than Hypothesis A. In other words, let us see whether the data in (99a) – (99d) can be accounted for without being committed to the claim that directional PPs are not feature clusters. The immediate advantage of Hypothesis B is that it allows us to capture the relatedness of Dative and Locative Goals by allowing them to be encoded as [-c] constituents. What remains to be explained then is how to account for the grammaticality of (99a) and (99c). Notice first, that sentence like (120) are acceptable for native speakers.

(120a) Lucie sent/shipped **Max**_[-c] his clothes **to NY**_[-c]

(120b) She offered **me**_[-c] a ride **to the airport**_[-c]

Given the assumption that both *Max* and *NY* in (120a) and *me* and *the airport* in (120b) are assigned the same abstract role –GOAL (i.e. [-c]), one has to conclude that *NY* and *Max* in (120a), have a different treatment with respect to the Non-Identity Constraint. If both encode the same abstract relation and if they were to be treated *on a par* with respect to the Non-Identity Constraint, then (120a) and (120b) should be in violation of the Non-Identity Constraint on the same grounds as an example in (121a), taken from Baker (1998). As indicated in (121a), the ungrammaticality is due to the fact that two arguments of the same verb are associated with identical theta roles (i.e. [-c-m]).

(121a) *John drives a truck_[-c-m] a 14-wheeler_[-c-m]

Notice further, that there is a way for (121a) to come out as a grammatical output. As noted by Baker (1998), if the intonation is not neutral and there is a heavy pause between *a truck* and *a 14-wheeler*, the sentence becomes grammatical since *a 14-wheeler* is then given as an afterthought. In other words, (121a) becomes grammatical if the second DP is not treated as an argument of *drive* in (121b).

(121b) John drives a truck – a 14-wheeler.

Consequently, both (120) and (121) point to the fact that adjuncts and arguments do not count *on a par* with respect to the Non-Identity Constraint. In other words, the premise that only elements of the same status are treated *on a par* with respect to the Non-Identity Constraint seems to be valid. Since the first premise of the Hypothesis B – the premise that directional phrases like the ones in (99a) and (99c) are adjuncts – is also valid, it follows then, that the hypothesis B is valid. Consequently, whatever the status of *NY* in (99a) is with respect to the FITR is irrelevant, since it does not count for the Non-Identity Constraint *on a par* with the co-arguments of the verb *send*, where ‘the argument of’ is understood as in Williams (1995). Recall that the semantic representation of a sentence is subject to various well-formedness conditions. The condition on selectional restriction is, for instance, one of them. If it is violated, it leads to an anomalous or even ungrammatical output. More importantly, any semantic representation is also subject to a general condition that every syntactic constituent must be integrated into the semantic representation. Recall, however, that not every syntactic constituent has to have the same relation in a sentence. Namely, some of the syntactic constituents are in the ‘argument of relation’ with respect to the predicate P, others are not. Consequently, *Max* and *NY* in (120a) can co-occur since *Max* is an argument of the verb and *NY* is not.

To sum up, the Non-Identity Constraint protects the uniqueness of thematic-roles only with respect to a single predicate. This being so, there is nothing more that needs to be said about Locative Goals but that they are not the co-arguments of the verb *send* (92a) and *ship* (92c), respectively. No new assumptions or stipulations need to be added to account for the grammaticality of sentences like (120a). Thus, Hypothesis B allows one to capture the data in (99a) – (99d) in a straightforward fashion. Furthermore – unlike Hypothesis A – Hypothesis B allows directional adjuncts to be feature clusters. In doing so, it also allows one to capture the relatedness between Dative and Locative Goals.⁸²

5.3 Fine-Grained Approach to Prepositions

There is one more issue that needs to be addressed concerning the Dative Goals. If the FITR needs to be activated to expand its underspecified cluster, what is the role of the preposition *to* with respect to such an argument? The assumption here is that *to* with Dative Goals is a semantically vacuous case preposition. Namely, I will hypothesize that there are two types of prepositions: Case-prepositions (or functional prepositions) that are semantically vacuous and Lexical-prepositions that are semantically contentfull. The distinction between lexical prepositions and functional prepositions has been claimed to exist in many languages (cf. Kayne (1975), (to appear) for French *à* (“to”), Stowell (1981) for English *to*, Tremblay and Kabbaj (1990) for Amharic, Weerman (1997) for *aan* (“to”) in Dutch, for instance). In some

⁸² Notice also that Hypothesis B leaves the option that all feature clusters obey the Non-Identity Constraint. Although the issue requires further research, recall that Parsons (1990) explicitly states that – unlike locatives – directionals can occur only one of the types per one event.

languages, functional Case-markers seem easier to detect than in others. For instance, Tremblay and Kabbaj (1990) successfully show that in Amharic postpositions are lexical categories (a finding that is perfectly congruent with Amharic being an SOV language) whereas prepositions appear only as case-markers.

The most uncontroversial case of the semantically vacuous preposition in the literature is the preposition *of*. Following Chomsky (1981) the preposition *of* as in (122) is analyzed as a semantically vacuous case-assigner (cf. Neeleman (1996), Rooryck (1996), for instance).

(122) The destruction of the city

Let us sum up the kinds of considerations that are taken into account when advocating for the status of *of* as a semantically vacuous Case assigner. Firstly, unlike verbs, nouns do not assign case. Consequently, a ‘dummy’ case assigner is necessary for the complement of the noun *destruction* to receive case. The status of *of* as a case-assigner is further argued on the basis of it being incompatible with modifiers *right* and *straight* (123). Since *right* and *straight* are P⁰ modifiers, they are expected to occur only in Specifier of PPs.

(123) The destruction (*right) of the house (Rooryck (1996))

Notice, further the dummy Case marker *of* may not be realized once the DP is not Case-dependent on it (cf. Stowell (1981) and den Dikken (1992)).

(124) the city’s destruction *of

Finally, the functional preposition *of* is argued not to play a role in selecting the complement of the head nouns. Genitive *of* is argued to take NPs of various thematic roles.

With respect to the semantically vacuous prepositions, there are different implementations in the literature. It is either argued to be inserted after the assignment of a theta role has taken place or the PP could be an extended projection of DP (cf. Grimshaw (1991), (2000)) assuming that it bears functional, but not lexical information. Whether the complement in (122) should be regarded as an NP, with *of* adjoined, or a PP with *of* the head of a phrase is still a matter of discussion in the literature.

The important point for our discussion is that there is a striking parallelism between the behavior of Genitive *of* and Dative *to*. As mentioned, P⁰ modifiers such as *right* and *straight* have been argued to occur with *bona fide* prepositions such as *at*, *out*, *after*, *towards*, *from*, *away*, *back*, *off*, *before*, directional *to*, *up*, and the like (cf. Edmonds (1986), and Rooryck (1996), for instance), but crucially not with Dative *to* (125).

(125) Karl slowly gave the book (?*right) to Fred

(Rooryck (1996))

Furthermore, notice that Dative *to* does not seem to impose thematic restrictions on the NPs it introduces. Recall that the preposition *to* sometimes introduces a role that corresponds to the traditional notion of Theme (e.g. *teach*-type verbs in SC⁸³), Recipient Goal (e.g. *give*-type verb), Perceiver (e.g. *seem* in *It seems to me that he is not happy* (Jackendoff (1987))), and Experiencer (e.g. *appeal* and *scare*-type verbs).⁸⁴

The status of Dative *to* as a vacuous Case-assigner is further corroborated by the fact that in passivization (126), the dummy Case assigner *to* must be omitted since the DP is no longer dependent on it for Case (cf. Stowell (1981), for instance).

(126) *Max was given a book to

Moreover, note that - with *give*-type verbs – *to*-dative alternation was not available in Old English (cf. McFadden (2002), for instance), while the double object appeared with both object orders.⁸⁵ It has been argued in the literature that the use of the semantically vacuous preposition as a case repair mechanism correlates with the collapse of the morphological case system in a language. McFadden (2002) connect the appearance of the *to*-dative in Early Middle English to the collapse of the morphological cases system that occurred in most dialects in the early phase of Middle English.⁸⁶ The same correlation has been claimed to hold in other languages that have undergone deflexion of case morphology. Weerman (1997) draws the same conclusion about the vacuous Dative preposition *aan* “to” in Dutch. The preposition introducing the Recipient *de mannen* in (127) - is a vacuous Case-assigner.

⁸³ As already said, Dative-Themes are not numerous, but not unheard of. Among verbs in German that take Dative-Themes are *vertrauen* “trust”, *mistrauen* “mistrust”, and *gehorschen* “obey”, for instance.

⁸⁴ It is interesting to notice that Dative *to* is not the only preposition in the verbal domain that has been argued to be a dummy Case-assigner. For instance, in addition to Dative *to*, Rooryck (1996) also argues that the preposition *by* in passive outputs has the status of a vacuous Case-marker.

⁸⁵ The limited amount of counterexamples to this statement (cf. Mitchell (1985)), seem to be predecessors of the *to*-dative that appeared productively in Early Middle English (cf. McFadden (2002) for this view). Certain texts from the period show no occurrences of *to*-dative, whereas in those texts in which *to*-datives can be found, their number is close to insignificant. As noted by McFadden, in *Ormulum*, for instance, out of 115 instances of double object constructions, only 8 are *to*-datives. For elaborate discussions of the double-object construction in OE, the reader is referred to van Kemenade (1987), Koopman (1990), and McFadden (2002).

⁸⁶ It might be interesting to notice that in SC – just like in OE – the double object appears with both object orders, though it seems to me that the basic order is IO –DO.

- (127) dat de vrouw de film aan de mannen toont
 that the woman the picture to the men shows
 that the woman will show the picture to the men

The correlation becomes strikingly obvious when languages that have undergone the deflexion of case morphology like English and Dutch are compared with languages that have a fully-fledged morphological case system like SC. The Recipient in SC (128b) is not just marked with the morphological dative, but also that there is no prepositional counterpart of it. Note, now, that the Dutch sentence in (128a) and the SC sentence in (128a) are verified in exactly the same situations: they have the same truth conditions.

- (128a) Hij geeft een boek *aan* Marie.

- (128b) Daje knjigu Mariji.
 pro gives-3PsSg book Marija-dative
 'He is giving a book to Mary.'

Finally, if Dative *to* is a semantically vacuous Case-marker, one would not expect semantic differences between the prepositional and the non-prepositional alternates of *give* in English. As seen in (129), the overt *to* does not make any semantic contribution to the sentence. There is a mutual entailment between (129a) and (129b). In accordance with it, one would predict that (129c) is a contradiction.

- (129a) I gave a book to Mary.

- (129b) I gave Mary a book.

- (129c) *I gave the book to Mary, but I didn't give Mary the book.

The output in (129c) is a contradiction since the two sentences have the same truth conditions. This follows if the overt *to* does not contribute anything to the meaning of the sentence in (129a).

Notice, however, that the data like (130) may raise a question about the validity of the hypothesis here. Unlike (129c), (130) is not necessarily a contradiction.

- (130) Max sent a book to Mary, but he didn't send Mary a book.

Does this falsify the claim here about the status of Dative *to* in English? The answer to this question is negative. Namely, the reason why (130) does not necessarily come out as contradictory is because both the Dative *to* and Locative *to* are licensed with verbs like *send*. The claim here is that in instances like (130), a PP is ambiguous between the recipient and the directional interpretations. If the PP is taken to be a Dative argument, (130) comes out as a contradiction. If it is taken to be a Locative adjunct, it is not contradictory. This, on the other hand, is perfectly in line

with the assumption that directionals and recipients are both feature clusters. The ambiguity that arises with *send*-type verbs is expected from a diachronical point of view. Namely, it has been argued in the literature that the sentences of the type in (131) played a pivotal role in the development of Dative *to* in Early Middle English (cf. McFadden (2002)).

(131) Mary sent a book to London.

In the view of what has been said here, the preposition *to* then has a dual status in English; as a vacuous case assigner (in the case of Dative Goals) and as a semantically meaningful lexical element (in the case of Locative Goals).

The question that now arises is how these two different relations are represented in semantic terms. Parsons (1990) offers an adequate treatment of these two different relations. Recall, first, that neo-Davidsonian analyses (Carlson (1984), Parsons (1990), for instance) incorporate thematic roles into the event semantics of Davidson (1967). Recall also that not every relation, however, qualifies as a thematic relation in Parsons' system. Parsons' criterion identifies as thematic roles only those relations that can project in subject, direct object, and indirect object positions (i.e. relations that can occur unmarked by an overt preposition). For Relations that always project in syntax with an overt preposition the logical form contains a relational formula *Preposition (e, x)*.⁸⁷ Such relations are not considered thematic relations. Thus, in Parsons' system, Recipients (i.e. Dative Goals) count as thematic relation, whereas Directionals (i.e. Locative Goals) do not. Following Parsons, I will assume that the logical form of (99a) and (99c) contains a relational formula *to (e, NY)* and *to (e, London)* since the locative *to* in (99a) and (99c) is semantically contentfull. The relation between the Recipient (99b) and (99d)), on the other hand, will not be mediated by the preposition since the dative *to* is semantically vacuous. The preposition *to* will not appear in the logical form of the sentence. The fact that locative *to* appears in the logical form of a sentence is congruent with the standard assumption that Locative preposition are semantically contentfull.

Notice that the fine-grained approach to prepositions might have interesting repercussions for arguments and the FITR. Namely, one could, further, hypothesize that not all prepositions that introduce arguments are devoid of semantic content. That being the case, one could hypothesize that the FITR will not apply to arguments that are introduced by prepositions that are semantically contentfull. Namely, one could argue that the thematic role gets to be fully specified either via the FITR (in the cases of semantically vacuous prepositions), or via the semantic input of the semantically contentfull preposition. The FITR would not apply to certain underspecified clusters because the relation is disambiguated - sufficiently defined - by the preposition. Though I will leave this issue for further research, I would like to briefly present one of the instances of such a preposition. Let us take a

⁸⁷ As already said, the criterion is easily amendable to languages like French, for instance, where the DP-DP alternate does not exist, by treating the Dative *a* ("to") preposition as a purely syntactic device, as proposed by Kayne (1975), for instance.

look at the data in (132). Unlike the sentences in (129), the sentence in (132a) and the sentence in (132b) are quite different in meaning. As pointed out by Botwinik-Rotem (2002), they can easily be conjoined while negating one of the conjuncts as in (132c).

(132a) We believe in Dan.

(132b) We believe Dan.

(132c) We don't believe Dan, but we believe in him.

(Botwinik-Rotem (2002))

Consequently, unlike the dative *to* in (129), the prepositions *in* in (132a) could be viewed as an instance of a semantically contentfull preposition, where 'being semantically contentfull', means that it somehow contributes to the interpretation of the sentence.⁸⁸ One could further hypothesize that in such cases, due to the presence of a semantically contentfull preposition, the FITR would not be activated. Consequently, from the point of view of theta-role assignment, one could hypothesize that there is a three-way partition of prepositions: a) dummy Case markers (*of* and Dative-*to*) whose presence is necessary as a Case-repair mechanism, b) prepositions that contribute to the interpretation of a sentence, possibly by jointly assigning a theta role with a verb, and c) prepositions that are sole assigners of a theta-role to their complement (e.g. locative-*to*). The FITR is activated only in the first case. In the latter two-cases prepositions are semantically contentfull enough for the FITR not to activate.⁸⁹

⁸⁸ As such, it could fit into the analysis like Neeleman (1996), who proposes that in cases like (126a), the verb and the preposition jointly assign a theta role. I leave the issue of their actual contribution for further research. It is important to notice that Neeleman (1996) extends his account to Dative *to*. I find no reasons to pursue this line of reasoning for Dative *to*. Consequently, as one could speculate that the V+P jointly assign a theta role to the DP in instances like (126a), I am not inclined to accept the same analysis for Dative *to*. It should also be noted that Botwinik-Rotem (2002) draws quite different conclusions about the status of the preposition *in* in (132) than suggested here. For two elaborate and different approaches regarding the status of various instances of prepositions, the reader is referred to Neeleman (1996) and Botwinik-Rotem (2004), respectively.

⁸⁹ Directional locative applicatives (e.g. in Chichewa and Chaga, for instance), could be argued to be exempt from the FITR by virtue of having a locative class prefix that creates a noun that denotes a location of a particular type. Such elements cannot simply be set aside as adjuncts with respect to the verbs simply because they are not. Namely, as it would be expected of applied arguments, the directional locative applicative can passivize, pronominalize, and undergo *wh*-movement in these languages. For elaboration of various types of applicative constructions, the reader is referred to Baker (1988b), Bresnan and Moshi (1990), and Marantz (1993). I leave the issue for further research.

6. The Cluster Distinctness Constraint Revisited

6.1 Questions that Arise from the Cluster Distinctness Constraint

Recall that the CDC is a formal constraint that ‘filters out’ co-occurrences of certain theta-clusters. The definition of the CDC (54) is repeated here as (133).

- (133) Cluster-Distinctness Constraint (henceforth: CDC)
 a. Two indistinct theta-clusters cannot be both realized on the same predicate.
 b. Distinctness: two feature clusters α and β , are distinct iff
 i) they share at least one feature, and ii) there is at least one feature or value which they do not share.

Though the CDC offers an account for a very interesting phenomenon of natural language, it might raise certain questions. The first question pertains to the scope of the CDC. Although the definition in (133) does not explicitly state it, the CDC is – indeed correctly – operative only in the environment where two underspecified clusters occur. Let us illustrate this. The three logically possible environments in which clusters can co-occur are given in (134).

- (134a) all clusters are fully specified
 e.g. verbal concept: ([$+\alpha+\beta$], [$-\alpha-\beta$], [$+\alpha-\beta$])
 (134b) one of the clusters is underspecified
 e.g. verbal concept: ([$+\alpha+\beta$], [$-\alpha-\beta$], [$-\alpha$])
 (134c) two clusters are underspecified
 e.g. verbal concept: ([$+\beta$], [$-\alpha-\beta$], [$-\alpha$]) or
 verbal concept: ([$+\alpha$], [$-\alpha-\beta$], [$-\alpha$])

Empirical evidence easily corroborates the claim that the CDC is, indeed, operative only in the third environment. The examples in (135) illustrate the first environment. It is clear that the CDC is not operative in this environment since all three clusters can realize together.

- (135a) Max_[+c+m] cut the meat_[-c-m] with a knife_[+c-m]
 (135b) Max_[+c+m] ate the meat_[-c-m]

The examples in (136) illustrate the second environment. As in (136), all clusters are permitted to realize together, since the CDC is not activated in this environment.

- (136a) Max_[+c+m] sent Mary_[-c] a present_[-c-m]

(136b) Max_[+m] loves Mary_[-c-m]

The examples in (137) illustrate the third environment. As seen in (137), the two underspecified clusters can realize together in (137b), but not in (137a).

(137a) */?The doctor_[+c] worried Max_[-c+m] about his health_[-m]

(137b) The doctor_[+c] biased Max_[-c+m] against his wife_[-c]

Consequently, the first conclusion to draw about the CDC is that it is only operative in the environment where two underspecified clusters occur. This conclusion immediately raises the question of why the CDC gets to be activated only in this environment.

As seen in (137), the CDC does not render every co-occurrence of underspecified clusters indistinct: (137b) is a perfectly legitimate output. Consequently, the second conclusion to draw about the CDC is that only certain co-occurrences of underspecified clusters are ‘filtered out’. This immediately raises the question of why the CDC ‘filters out’ only some co-occurrences of underspecified clusters. In other words, one would like to understand better the mechanism by which the CDC compares two seemingly distinct entities (e.g. [+m] and [-c]) in (137a) and renders them indistinct.

The next question pertains to the existence of such a constraint. Given the existence of the Non-Identity Constraint, why would natural language need the Cluster Distinctness Constraint in the first place? The final question that it raises is how can some speakers apparently ‘override’ the CDC (cf. (137a), for instance). Notice further that such outputs will never pass with ‘flying colors’, but they are judged as passing.

Provided the FITR, I argue that the logic, the mechanism, and the answers to the above questions might become obvious and straightforward.

6.2 The Cluster Distinctness Constraint through the Prism of the Full Interpretation of Thematic Roles

The CDC exists in natural language to prevent co-occurrences that would violate the Non-Identity Constraint. The Non-Identity Constraint can be violated since the interpretative component renders all underspecified clusters fully specified i.e. the FITR applies. The co-occurrences that are ‘filtered out’ are exactly those that would violate the Non-Identity Constraint after the FITR has applied. The CDC is not operative in the cases where a fully specified and an underspecified cluster occur because the FITR expands the underspecified cluster so it does not clash in identity with a fully specified cluster. The computational burden in such an environment is relatively light. The CDC is operative in the environment where two underspecified

clusters occur together because the computational burden such an environment imposes is heavy. Compared to the environment where a fully specified and an underspecified cluster occur, the work in this environment is, at least, doubled. First, both underspecified clusters need to be expanded. This renders the creation of four clusters. Then, these clusters need to be put through four separate construals in order to check which one is the illegitimate one, and which ones are acceptable. Since this is a heavy task, the CDC is activated and computations like (138a) are generally avoided.

(138a) *The doctor_[+c] worried Max_[-c+m] about his health_[-m]

Although overriding is costly, nothing, in principle, prevents one from computing further. The CDC is a formal constraint – it applies on the verbal entry itself. The FITR, on the other hand, is an interpretative requirement. Thus, the CDC can be ‘overridden’ by the FITR. Using the FITR, one can expand the underspecified clusters so that they do not violate the Non-Identity Constraint. For instance, ‘overriding’ the CDC, the FITR could expand the underspecified clusters as in (138b). As indicated in (138b), the Non-Identity Constraint is not violated. However, since the overriding is costly, it is predicted to be disfavored.

(138b) ??The doctor_[+c+m] worried Max_[-c+m] about his health_[-c-m]

Consequently, even though the burden is heavy, one can continue on computing – thus, salvaging the formal inadequacy that occurs with *worry*-type verbs. The output will never be perfect, but it can be salvaged to yield relatively acceptable outputs. The FITR will not be applied to salvage such outputs all the time simply because it is too ‘costly’, where ‘costly’ means that the computational burden is too heavy.

Last but not least, let us answer the question regarding the mechanism by which the CDC compares seemingly distinct entities (e.g. [+c] and [-m]) and renders them indistinct. In terms of the FITR, the ‘hidden’ common denominator of indistinct clusters becomes obvious. Namely, the only cases open to the violation of the Non-Identity Constraint are the pairs that are rendered indistinct by (133) (i.e. the pair [+c] and [-m], [+m] and [-c], [-c] and [-m], and [+m] and [+c]). Pairs like [+c] and [-c] can never give rise to the violation of the Non-Identity Constraint since they will never be able to come out as identical roles as they already contain a feature value that will distinguish the fully specified clusters they can expand to.

Given what has been said so far, I propose a redefinition of the Cluster Distinctness Constraint in (139).

(139) Cluster Distinctness Constraint Revisited
Two underspecified clusters are indistinct if there is a construal under which they are identical.

In its empirical coverage, (139) is identical to the previous CDC. By (139), the following pairs come out as indistinct:

(140a) [-m] and [-c] - illicit construal: [-m-c] [-c-m]

(140b) [-m] and [+c] - illicit construal: [-m+c] [+c-m]

(140c) [+m] and [+c] - illicit construal: [+m+c] [+c+m]

(140d) [+m] and [-c] - illicit construal: [+m-c] [+m-c]

By (139), the following pairs of clusters are distinct since there are no illicit construals from them:

(140e) [+m] and [-m] - no illicit construals

(140f) [+c] and [-c] - no illicit construals

Since there are no illicit construals for (140e) and (140f), these clusters can always co-realize.

The advantage of the Cluster Distinctness Constraint Revisited is that it is tied to the Non-Identity Constraint. As we saw in Section 3, the Non-Identity Constraint is a core - primitive notion in the theta theory. The Cluster Distinctness Constraint Revisited provides an account for why only certain co-occurrences of underspecified clusters are filtered out by this formal constraint.

6.3 A Note on Middles

The discussion in this Chapter was opened with some interesting data about middles in English. Though English middles will be discussed in Chapter 4, it is worth stressing that, even at this point, one is able to draw certain conclusions about the data in (1)– repeated here as (141).

(141a) Expensive presents don't send easily.

(141b) *Expensive presents send acquaintances easily.

(141c) Expensive presents do not send easily to foreign countries.

(141d) Expensive presents do not send easily */? to acquaintances.

Since all the rules regulating the co-occurrences of feature clusters are tied to the Non-Identity Constraint, one is able to conclude that if there is some restriction on the co-occurrences of feature clusters operative in (141b), its effect should be absent from (141c) since the rules regulating the co-occurrences of feature clusters are operative only on feature clusters of a single predicate. As seen in (141c), this prediction is born out. Namely, it was argued that though both Dative Goal (141b) and Locative Goal (141c) might be encoded as [-c] clusters, it is only the former that counts *on a par* with other feature clusters of the verb *send*. In the light of the discussion about the ambiguity between Locative Goals and Dative Goals with *send*-type verbs, it also gives us an answer to the conditions under which (141d) can come out as an acceptable output. That is, the acceptability of (141d) depends on whether the *to*-phrase in (141d) is construed as both a location and a recipient. If it is construed as a location, it follows that that the requirement on the co-occurrences of feature clusters will not be activated since Locative Goals do not count as co-arguments of the verb *send*. If, on the other hand, it is construed as a recipient, it is in violation of some requirement on the co-occurrences of feature clusters (cf. 141b). Finally, an account of why (141a) is a grammatical output whereas (141b) as well as its PP-alternate are illegitimate derivations will be offered in Chapter 4.

7. Concluding Comments

The aim of this Chapter was to examine feature clusters with respect to their properties and with respect to the rules that govern their co-occurrences. With respect to the former issue, the focus of the inquiry was on properties of ‘being fully-specified’ and ‘being underspecified’. In terms of the CS, the implications of both underspecified and fully specified clusters are argued to be straightforward. In interpretative terms, underspecified clusters are argued to be potentially problematic in that they are ‘thematically deficient’. In the discussion that followed some light was shed on the type of ‘thematic deficiency’ underspecified clusters have and the way this “thematic deficiency” is repaired.

Utilizing tools available in the Theta System, I have enriched the inventory of constraints by formulating the Non-Identity Constraint and adding the Full Interpretation of Thematic Roles. The former – implicit in the Theta System – as well as other theories dealing with thematic roles – is a core constraint operative at the interface between the system of concepts and the computational system as well as at the interface between the computational system and semantics. The Full Interpretation of Thematic Roles (FITR) is guided by The Non-Identity Constraint and it ensures that all participants stand in distinct and fully-defined relation to the event in question. The FITR allows an account for the long-standing puzzle of the animacy restriction that occurs with certain types of verbal entries. Finally, the existence of the FITR allows a better understanding of the necessity of the Cluster Distinctness Constraint as a constraint of natural language and a better understanding of the reasoning behind the variation that occurs among speakers regarding the *worry*-type verbs. Finally, through the prism of the FITR, a

redefinition of this formal constraint was given. The Cluster Distinctness Constraint Revisited is equal to the original Cluster Distinctness Constraint with respect to their empirical results. Being tied to the Non-Identity Constraint, the redefinition, however, has explanatory power with respect to the environment in which this formal constraint is active, as well as with respect to the notion of ‘indistinct clusters’.

The issue of what should count as a feature cluster is also addressed. It is argued that some adjuncts are best analyzed as not being encoded in the Theta System, whereas an alternative account is proposed for others. The findings also have broader implications since the status of various elements that are not in the ‘argument of’ relation with the verb is not determined in the Theta System. The data under discussion confirmed the correctness of the Non-Identity Constraint as defined here. Namely, The Non-Identity Constraint protects the uniqueness of feature clusters with respect to a single predicate. On the account presented here the ‘thematic deficiency’ of the cluster of Dative Goals (i.e. [-c]) is argued to be repaired by the FITR. This naturally led to the question of the role of the Dative *to*. The answer to the question led us to a fine-grained approach to prepositions. Namely, it was argued that prepositions fall into two groups: semantically vacuous prepositions and semantically contentfull prepositions. The presence of semantically vacuous prepositions was argued to be motivated by Case reasons. Following Parsons (1990), I argue that they do not appear in the logical form of a sentence. Semantically, contentfull prepositions contribute to the meaning of the sentence. As such, they are always present in the logical form of the sentence. This allows us to capture the relatedness of Dative Goals and Locative Goals, on the one hand, and their differences, on the other hand. Namely, the relatedness of Dative and Locative Goals was formally represented here by encoding them both as [-c] clusters. Their differences reside in the dual status of the preposition *to*. Following Parsons (1990), I assume that the locative *to* is a semantically contentfull preposition and will appear in the logical form of the sentence. Dative *to* is semantically vacuous and does not appear in the logical form of the sentence. The FITR obligatorily applies in the former case enforcing the expansion of the cluster. I further suggested that it does not need to apply in the latter due to the presence of the semantically contentfull locative *to*. This, in turn, provides an explanation of why the [-c] cluster is, in principle, consistent with either Recipient/Experiencer/Perceiver (i.e. [-c+m]) or Theme (i.e. [-c-m]) interpretations in the latter case, whereas it uniformly gets the locative interpretation in the former.

Last but not least, as said in the introduction, the discussion in this Chapter has important implications for the account of middles in Chapter 4. Whatever the rule that regulates the co-occurrences of feature clusters in middles is - even at this point - one can draw one conclusion about the intriguing data that opened this Chapter. Namely, following our discussion here, it should be clear that the rule (to be made precise in Chapter 4) will apply only in cases of co-arguments, not in the cases of adjuncts. The data in (141) clearly corroborate this claim.

Chapter 3

Clearing the Ground for Middles

1. Introduction

The purpose of this Chapter is to define as well as to delimit the scope of inquiry into the middle construction across languages by examining the properties that are commonly associated with middles as well as the diagnostics that are often used to identify middles. Though the conclusion here is that there is enough evidence to grant the middle the status of a cross-linguistic semantic category, not all characteristics proposed in the literature can, in fact, be taken as the defining characteristics of middles. Some of the properties that are assumed in the literature (e.g. the aspectual stativity of middles), will be argued to be uncontroversial properties that hold of middles across languages. With respect to others, (e.g. i-level/s-level status of middles) arguments will be presented that warrant caution in lightly granting such status to middles. The examination of the characteristics that hold of middles across different languages will also facilitate the delimitation of the scope of the inquiry. This delimitation is essential since in language after language one finds constructions that – though very similar to middles – should not be treated as middles. This abundance of ‘middle imposters’ is undoubtedly related to the fact that across languages, middles do not come ‘dressed up’ in particular – middle – morpho-syntactic clothes. Middles in Dutch – just like in English - have a verb in active form and no morphological marking of any sort. Consequently, they might look – at the first glance - just like unaccusatives (1b).

(1a) This dress buttons. (middle)

(1b) The vase broke. (unaccusative)

Middles in SC and Italian are similarly conspicuous. Take a look at the examples in (2) from SC. In all sentences in (2), the verb is in its active form, the notional object is in the subject position, and they are marked with the presence of the clitic *se*. Yet, - as indicated in (2b) and (2c) - they instantiate two different semantic categories. In principle, an output like (2a) is ambiguous between a passive and a middle reading. On its middle – property reading, it is paraphrasable as *a red-while stain is*

removable/clean-able with white wine. If the sentence is furnished with an adverb like *easily*, the middle reading becomes particularly prominent (2b). On its passive reading, it reports an ongoing activity – an eventive reading. This becomes clear if the sentence is furnished with an adverbial like *upravo* “at the moment” (2c).

- (2a) Mrlja od crnog vina se skida belim vinom.
red wine stain SE cleans/removes white wine-instrumental
- (2b) Mrlja od crnog vina se lako skida belim vinom.
red wine stain SE easily cleans/removes white wine-instrumental
‘A red wine stain removes easily with white wine.’
- (2c) Mrlja od crnog vina se upravo skida belim vinom.
red wine stain SE at the moment cleans white wine-instrumental
‘At the moment, a red wine stain is being removed/cleaned with white wine.’

The discussion in this Chapter is directly related to several ongoing debates in the literature regarding, for instance, the module in which the middle formation operation applies and the issue of whether there is a middle alternation that is distinct from the causative-unaccusative alternation (1b) or whether they represent a single alternation. In attempting to recognize middles across different languages, one necessarily needs to examine the diagnostics used in the literature to tease out middle derivations. With respect to some of the proposed tools, I will argue that they are unreliable not because middles do not pass the tests in question, but because one is not sure what the tests diagnose. As it will be shown, constructions with properties different from middles in crucial respects also pass some of these standard tests.

2. Properties of Middles

2.1 The Semantics of Middles

2.1.1 Aspectual Properties of Middles

The core property of middles cross-linguistically is to attribute properties to entities (cf. Cinque (1988), (1995) and Fellbaum and Zribi-Hertz (1989)). In (3), the verb ‘wash’ predicates a property of the subject - i.e. in both SC and English examples like (3a) and (3b), respectively, are, roughly speaking, interpreted as *silk dresses are washable*.

- (3a) Silk dresses wash easily. (English)

(3b) Svilene haljine se lako peru. (SC)

The fact that middles are used to ascribe properties to entities requires middles to be aspectually stative. There is a general agreement and ample evidence of the stative nature of middles in a variety of languages (cf. Cinque (1988), Fagan (1988), Keyser and Roeper (1984), Roberts (1985), Abraham (1986) to name just a few).⁹⁰ A sample of tests statives are sensitive to includes a) Licensing of Agentive Adverbs, b) Imperatives, and c) Progressive Construction.⁹¹

It is standardly assumed that the inability of middles to license adverbs such as *deliberately* and *intentionally* (i.e. Roberts' (1985) Class I adverbs), stems from their stative nature.⁹² Compare the middle in (4) with the statives in (5a) and (5b).⁹³

⁹⁰ There is one account to my knowledge -Steinbach (1998) - that challenges this core characteristic with respect to German data. Some comments are needed here. Firstly, it is not quite clear to me what Steinbach argues against. Using examples like the one in (i), Steinbach claims that "a verb in a middle construction yields an achievement interpretation" (Steinbach (1998): p. 69). According to Steinbach, the "achievement interpretation" he identifies in (i), in turn, falsifies one of Fagan's (1992) conditions on middles: the condition that the verb is not an achievement or state. Both of these statements require a thorough look. Let me first note that the native speakers I have consulted agree that (i) allows for middle interpretations, roughly equivalent to *The TV is switchable*.

(i) Der Fernseher schaltet sich schnell aus.
The TV switches SICH quickly off.

Going back to Steinbach's claims, notice first that it is not clear what the "achievement interpretation" is meant to be understood as. If it is understood to mean "achievement" as in Vendler's (1967) work, then one would expect *in X time* adverbials to be licensed in (i). This however, is not the case. The fact that (i) fails the *in X time* test is extremely important since *in X time* is among the rare tests that differs achievement (e.g. *recognize* and *spot*) from states (e.g. *love* and *admire*) (cf. Vendler (1967)). Since (i) fails this test, it cannot be considered as an eventive output. Secondly, Steinbach uses (i) to argue against Fagan's (1992) condition on Middle Formation that states that the V is not an achievement or a state. From other arguments he presents, it is quite obvious that Steinbach is quite aware that Fagan's criterion applies to the input to Middle Formation, not to the output of Middle Formation. Namely, what Fagan claims is that achievement verbs cannot be felicitous input to middles. In that respect, the value of (i) is considerable. Namely, it falsifies Fagan's claim that achievement verbs cannot be input to middles. Finally, if German middles can be eventive – the point which should then be corroborated with data different from (i) -then German indeed requires a more serious look since other authors - Abraham (1986) and Fagan (1992), for instance – claim that middles in German are stative.

⁹¹ For an in-depth elaboration of tests statives are sensitive to, see Dowty (1979), and Vendler (1967), for instance.

⁹² See also Jackendoff (1972).

⁹³ The example in (4) –taken from Fellbaum (1985) – is illustrative of the fact that middles do not need adverbs to be licensed. (cf. section 2.3). The reason why I opted for (4), rather than for a prototypical middle like (1) lies in the fact that the middle-adverb *easily* (i.e. with the meaning *without difficulty*) and *intentionally/deliberately* are not compatible to start with.

- (4) *This dress buttons *deliberately/*intentionally.
- (5a) He loves her *deliberately.
- (5b) He hates her *intentionally.

Apart from the inability to license Agentive Adverbs, the middle's stative nature becomes obvious if tested through imperatives (6a) and progressive constructions (6b).⁹⁴ The incompatibility of middles and stative verbs with imperative constructions and progressive is usually attributed to the fact that imperatives and progressives imply some sort of action which, again, is incompatible with the stative nature of *love*-type verbs and middles since both are "without activity and successive stages" (Bland (1988) and Keyser & Roeper (1984), for instance).

- (6a) Imperatives
- (i) *Love! (stative)
- (ii) *Wash (easily)! (middle)
- (6b) Progressive constructions
- (i) *He is loving her. (stative)
- (ii) *The dress is washing easily. (middle)

One should notice that middles – just like statives - can sometimes occur in the progressive. However, even when they do, they are argued not to be eventive (cf. Sag (1973), Roberts (1985), Bland (1988), Fagan (1992) to name just a few).

- (7a) Bureaucrats are bribing more than ever in Reagan's second term.
(Roberts (1985))
- (7b) This manuscript is reading better every day.
(Fagan (1992))

Consequently, an output like (i) will be out since these two adverbs occupy different slots (cf. Vendler (1984)).

⁹⁴ One should be aware of the fact that no test is bulletproof. Namely, one could challenge the validity of the imperative test with examples like 'Don't hate!' Such a line of reasoning does not seem prudent, however. Namely, the existence of one (or few) isolated case(s) should not be taken as an indication that the generalization is invalid. A systematic pattern of counter-examples should challenge a generalization, not a random isolated example.

- (7c) Your kids are knowing more and more about sex and violence these days.

(Bland (1988))

- (7d) The baby's resembling his father more and more every day.

(Sag (1973))

It has been pointed out in the literature (cf. Sag (1973), Fagan (1992)) that there are certain restrictions placed on progressive statives. They are ungrammatical if they contain an adverbial expression 'at the moment'. The example (8) is taken from Sag (1973).

- (8) *At the moment the baby's resembling his father.

Following Bland (1988), Fagan (1992) argues that middle like (7a) and (7b) are acceptable because they express successive change – a “progressive requirement” – but the change they express is between the successive states. The sentence in (7b) implies that the manuscript is being revised daily and that *each revision reads better than the previous one*. Fagan also points out that the adverbial phrases *better* and *every day* in (7b) are necessary for this type of progressive interpretation. In that sense – she argues – they are not used to describe events. Just like ordinary middles, the middles in (7a) and (7b) ascribe certain properties to their subjects. The difference between the regular middles and progressive middles lies in the fact that the latter group expresses a change in these properties over time.

Middles are not felicitous with specific time reference – punctual interpretation – in either preterit or present (cf. cf. Keyser and Roeper (1984), Roberts (1985), Abraham (1986), Bland (1988), Cinque (1988), Fagan (1992) and Franks (1995) to name just a few). Middles occur with generic reference time. Though they typically occur in present simple tense, they are not bound to it (9a). The example in (9a) is from Roberts (1985), (9b) is from Cinque (1988), and the example in (9c) is from Keyser and Roeper (1984).

- (9a) In XIX century, bureaucrats bribed easily.

- (9b) *?Il sindaco ha il vantaggio di essersi già corrotto ieri.
The mayor has the advantage of already si being bribed yesterday.
'Yesterday, the mayor bribed easily, according to the newspaper.'

- (9c) ?At yesterday's house party, the kitchen wall painted easily.

2.1.2 Individual-Level and Stage-Level Predicates

The issue of whether middles are i-level predicates or not is widely discussed in the literature. The i-level status of middles has been both asserted and disputed in the literature. As will become clear shortly, the point of this sub-section is not to argue either ‘for’ or ‘against’ the treatment of middles as i-level predicates, but to caution against both granting the i-level status to middles or dismissing middles as i-level predicates too lightly and then using this stipulated property of middles as a backbone in accounting for their behavior. More importantly, the evidence presented in this discussion warrants caution with respect to approaches to middles that build up on the premise that states do not have an e-role and then use this to explain why states like *love* cannot be felicitous input to the middle formation operation in some languages.

The criterion of ‘permanence’ i.e. whether middles assign permanent or transitory properties to entities is taken as a core criterion in the deliberations regarding the i- or s-level status of middles. For instance, in arguing against the i-level status of middles, Fagan (1992) gives examples like (10). Fagan argues that if, for instance, “the book was revised for a new edition in some way that has now made it more difficult to read”, then it is the actual property of the book that is restricted. Thus, it seems that there is a way to temporarily restrict the property in middles.

- (10) Das Buch las sich leicht.
‘The book read easily.’

(Fagan (1992), after Wagner (1977))

Should the data like (10) be considered as conclusively arguing against the status of middles as i-level predicates? The answer to this question seems to be negative or, rather, inconclusive. Namely, though “permanence” is very often cited as a necessary and sufficient condition for something to be treated as an i-level predicate, it has been noted in the literature that this is not quite so. For instance, to illustrate the point Carlson (1977) compares *alive* with *young*. Though life usually lasts longer than youth, *alive* is an s-level predicate while *young* is i-level predicate (11a).

- (11a) Max saw Peter alive.
(11b) *Max saw Peter young.

A further type of argumentation that one often finds in the literature on middles is that middles are i-level predicates since they receive a generic interpretation. Here, again one has to note that it is a well-known fact that the generic reading is not just available but actually preferred with certain instance of s-level predicates. *Naked*

and *drunk* are typically considered to be s-level predicates and, yet, the preferred interpretation of (12) is generic, not existential.

- (12) Emperors are naked/drunk. (Jäger (2001))

Consequently, in arguing either “against” or “for” the i-level status of middles, the notion of “permanence” and “generic interpretation” should be handled with due care. Namely, not everything that is “permanent” or receives generic interpretation is automatically an i-level predicate. Consequently, if one commits oneself to the claim that middles assign permanent property to entities, or receive generic interpretation, one should be aware that he/she might not be actually claiming that middles are i-level predicates.

Notice further that the tests standardly assumed to uniformly diagnose the i-level nature of a predicate do not actually come out quite that neatly. The perception report test has a prominent place among the tests used to argue that middles are i-level predicates. Namely, middles do not occur as the complement of perception verbs. In Carlson (1977), the perception-verbs test is taken to be the crucial test in differentiating between stage-level and individual-level predicates. Consequently, the pivotal role of the perception report test with respect to middles should not come as a surprise. On Carlson’s account, i-level predicates are argued not to be able to occur as complements of perception verbs since perception is a relation between stages rather than between individuals. Consequently, (14a) is out and (14b) is a perfectly acceptable sentence. Since middles cannot occur as complements of perception verbs, it follows- according to some researchers - that they are i-level predicates (13). The Dutch example (13) is from Ackema and Schoorlemmer (2003).

- (13) *Ik zie het boek moeilijk lezen
I see the book with difficulty read
- (14a) *I saw Max tall. (i-level predicate)
- (14c) I saw Max drunk. (s-level predicate)

Another test that is standardly assumed to flesh out the i-level nature of a predicate is adverbial modification. Namely, i-level predicates do not allow temporal adverbials (15a), frequency adverbials (15b), and locative adverbials (15c).

- (15a) *Max was tall three minutes ago.
- (15b) *Max was tall several times.
- (15c) *Max was tall in Paris.

From the behavior of the predicate *tall* in (14) and (15), one could conclude that both of these tests conclusively diagnose the same property. It has been, however,

noted in the literature that this is not quite so. Some authors (cf. de Hoop & de Swart (1989), McNelly (1994), and Jäger (2001) and the references there) have challenged the claim that the i-level versus s-level contrast is uniform and have argued that the tests standardly used to sort out i-level from s-level predicates do not actually do so. Namely, what they argue is that instead of revealing a single contrast, the tests reveal several similar but, crucially, independent contrasts. For instance, Jäger (2001) takes three standard tests in the literature on i-level predicates: a) admission of weak/existential reading of indefinite subjects, b) admission to occur as a complement of verbs of perception, and c) admission of transitory property. Individual-level predicates are said to fail all three tests. If the tests in question were to flesh out one property of predicates only, then one would expect 2 groups of verbs: a) s-level predicates, which should pass all of three tests and i-level predicates, which should fail all three tests. As a matter of fact, he finds that there are 8 groups of predicates attested in natural language.

Let us illustrate this lack of uniformity of diagnostics with an example. It is often said that i-level predicates can be easily coerced into s-level predicates. For instance, provided the right context, (16a) becomes fully acceptable. If, for instance, one were to be stuck in a world where by drinking a portion one could change his/her height in a matter of minutes uttering (16a) would be perfectly fine.

(16a) Alice was tall three minutes ago/several times.

The same is true of examples like (16b). Kratzer (1995) notes that (16b) has two possible interpretations: s-level and i-level. The s-level reading arises if *Henry* in (16b) used to be French but is now an American citizen. What is important for our discussion here is that once this i-level predicate is coerced into an s-level predicate one would expect it to behave as an s-level predicate, with respect to the diagnostics in (14) and (15).

(16b) Henry was French.

Examining data like (16b), Jäger (2001), however, challenges the claim that these tools claimed to identify i-level predicates indeed diagnose the same thing. Namely, he points out that even in the context where one would imagine a very strange treaty between France and US that states that citizens from either country may decide to be American citizens on sunny days and French citizens if it is rainy, it would not help (16c) to become less odd that it is. Consequently, despite the past tense and supporting context which should help to reinterpret *(be) French* as an s-level predicate, *(be) French* cannot occur as a complement of perception verbs.

(16c) *We saw Henry (be) French (Jäger (2001))

Notice further that this is not so for adverbial tests. Namely, Jäger (2001) notes that provided the context given above, *(be) French* indeed behaves like an s-level

predicate with respect to adverbial modification tests. Jäger's (2001) examples (16d) and (16e) illustrate this.

(16d) Henry was French last week.

(16e) Henry was American several times.

Since the predicate (*be*) *French* passes the tests in (16d) and (16e) and fails the test in (16c), Jäger (2001) draws the logical conclusion that the perception report and adverbial modification do not diagnose the same thing. Simply put, if the two tests were to diagnose the same thing, the outputs in (16c) – (16e) would either all be legitimate or illegitimate.

Consequently, if one commits oneself to the claim that middles are i-level predicates one has to be careful in choosing the diagnostics he/she uses to corroborate this claim. Notice further that there is evidence that the old-time favorite perception report test is not a good candidate to rely on. Jäger (2001), for instance, lists the typical s-level predicates (17a) that apparently cannot appear as complements of perception verbs (17b). The example (17b) is taken from Jäger (2001).

(17a) Peter was available/present several times/ yesterday/in Paris.

(17b) *We saw Peter available/present.

To complicate the issue even further, one should be aware that exceptions are found with respect to the adverbial modification as well. Frequency adverbials are argued not to be legitimate with i-level predicates since i-level predicates are 'once only' i.e. they cannot cease to hold or restart to hold again. Since i-level predicates are 'once only', it follows that modification of a 'once only' predicate with frequency adverbs leads to contradiction (18a). De Hoop & de Swart (1989) have noted that with respect to the adverbial test, certain s-level - (18b) and (18c) - predicates pattern with i-level predicates.

(18a) *Max knew Dutch several times.

(18b) *Max grew up twice.

(18c) *Max died several times.

On their account, all predicates – regardless of whether they are i-level or s-level – are excluded from the frequency adverbial modification test as a diagnostics provided they are "once only". Namely, *grow up* and *die* cannot cease to hold of an individual and then restart to hold again. Again, what is important for our discussion is that 'once only' cannot be then taken to be a property of i-level predicates only. Consequently, even though the adverbial test seems a more reliable tool in sorting out i-level from s-level predicates, at least some instances of adverbial modification

should be handled with caution. Notice further that the de Hoop and De Swart (1989) account extends to yet another test that has been standardly assumed to separate the i-level from the s-level predicates. Namely, for *when*-conditionals - another test that has been assumed to differentiate between i-level and s-level predicates - de Hoop and Swart (1989) argue that it depends on whether the predicate is ‘once only’ and not whether it is an i-level or an s-level predicate.

Consequently, one can conclude that the diagnostics proposed for i-level versus s-level predicates are not reliable since different tools that are assumed to flesh out a single contrast flesh out several different contrasts instead. Based on the data like (16c) and (17), it seems that the perception report test does not capture what is standardly assumed to be an i-level versus s-level contrast. In the sense of capturing the i-level nature of a predicate, adverbial modification seems to be more reliable. Caution is, however, warranted even with the tests of adverbial modification since some of the instances of adverbial modification are conclusively shown to boil down to properties that do not cut in between i- and s-level predicates. Finally, it is worth stressing that simply stating that middles are i-level predicates might not satisfactorily deepen our understanding of middles as such. For instance, it is a standard practice in the literature on middles to test middles and stative verbs like *love* or *hate* and show that they behave uniformly. Having said this, one should be aware that *love* and *hate* are classified as denoting transitory, rather than permanent property (cf. Jäger (2001)).⁹⁵

Last but not least, it is important to stress that the jury is still out regarding the issue of which module is responsible for the i-level effects, like “permanence”. On the one hand, there are approaches like that of Kratzer (1995) that root the differences between i-level and s-level predicates in the argument structure of a predicate. Namely, on her account, whereas s-level predicates have an e-role (i.e. an additional ‘Davidsonian’ argument place), such an argument is absent from the argument structure of i-level predicates.⁹⁶ It should be stressed that – as noted in the literature - if the distinction in question is ultimately encoded in the argument structure, it is unusual that the difference between i-level and s-level predicates (with respect to “permanence” effect) is so affected by pragmatic considerations (cf. (16b) and (16b), for instance). Take the well-known examples in (19). Provided the context in which “John has a double personality which involves switching his mental capacities on and off in an abnormal manner” (Chierchia (1995b): 177)), (19b) becomes perfectly legitimate. Jäger (2001) notes that the acceptability of examples like (19b) does not boil down to coercion i.e. it is not the meaning of *intelligent* that changes from (19a) to (19b). The acceptability of (19b) is determined by world knowledge and

⁹⁵ As pointed out by Parsons (1990), the fact that states like *love* or *believe* cannot occur as complements of perception verbs can, as well, be rooted in the fact that these states are unobservable.

⁹⁶ Note that the argument-structure approach is motivated by the syntactic differences that i-level and s-level predicates were argued to show. Among these differences are *when*-conditionals, that de Hoop and de Swart (1989) account for in a fashion not related to i-versus s-level status.

consequently boils down to pragmatics. In other words, Jäger points out that it is not the meaning of *intelligent*, but our background knowledge that changes in (19b). In accounting for examples like (19b), Delfitto (2002), on the other hand, proposes to define the i-level predicates as “those for which the presence of the event variable in the lexical grid is optional” (Delfitto (2002))

(19a) John is intelligent.

(19b) John was intelligent on Tuesday, but a vegetable on Wednesday

Bearing all this in mind, it should not come as surprises that a number of researchers have proposed that all predicates (states and events alike) have a Davidsonian argument. Parsons’ (1990) position is that - just like there are underlying events - so are there underlying states. The Davidsonian argument of events and states does not necessarily have to be the same. Jäger (2001) proposes that the Davidsonian argument of statives is of a different kind than the Davidsonian argument of events proper.⁹⁷ The issue - still unsettled in the literature - is not of crucial importance for our discussion. What is important and seems undisputable is that that Parsons (1990), (2000) and Jäger (2001) are right in assuming that all predicates have a Davidsonian argument. Though most states do not allow most of the modifiers found in the event sentences, the argument about the logic of modifiers (cf. Chapter 1) goes through with the states as well. Notice, for instance, that the inference pattern characteristic of event related adverbial modification holds for stative predicates as well. Consequently, (20a) entails (20b)-(20d), and both (20b) and (20c) entail (20d).⁹⁸

(20a) John was a Catholic with great passion in his youth.

(20b) John was a Catholic in his youth.

(20c) John was a Catholic with great passion.

(20d) John was a Catholic.

(Jäger (2001))

Thus, the same argument of underlying events goes though to prove the existence of underlying states corroborating that all verbs stand for kinds of events or kinds of states. In terms of middles, the relevance of these findings is extremely important,

⁹⁷ The reader is, of course, referred to Jäger (2001) and Delfitto (2002) for elaboration.

⁹⁸ As pointed out by Terence Parsons (p.c.), the examples in (20) might not be quite optimal as the preferred reading of *John was a Catholic with great passion* is the one where the modifier *with great passion* modifies the DP *a Catholic*. If this reading is ‘interfering’ with the assessment of (20), the reader should consider *John was violently sick with the flu*, suggested to me by Terence Parsons.

since in some accounts of middles, the restriction with respect to the possible input verbs to the middle formation operation in some languages is argued to boil down to the inability of verbs without an e-role to partake in the middle formation operation. Considering the evidence presented here, one might be dissatisfied with such solutions.

To sum up, as already said, the point of this sub-section was not to argue either “for” or “against” the treatment of middles as i-level predicates. The main purpose of this brief presentation is simply to caution against both granting the i-level status to middles or dismissing middles as i-level predicates too lightly and then using this stipulated property of middles as a backbone in accounting for their behavior. Further, following the discussion here, the evidence presented in the literature on middles as conclusive for either the former or the latter approach should not be taken at face value. Namely, whereas the empirical evidence in (10) and (13) seems to be indisputable, it is not clear what the tools used diagnose. The same is true regarding the lack/presence of the Davidsonian argument with states. Namely, even on the this brief presentation, it should be clear that approaches to middles build up on the premise that states do not have an e-role which, in turn, is used as an explanation that states like *love* cannot be felicitous input to the middle formation operation (cf. Hoekstra and Roberts (1993), for instance) require a second look. The main characteristic of a middle derivation is that they are generic statements. Roughly, they attribute characterizing property to an entity. From this, it follows that middles are stative. Statives, on the other hand, can be either i- or s-level. Since there are several contrasts that have been lumped together under the “i-level predicate” label, I do not see how simply labeling middles as i-level predicate (and conversely, labeling them as not being “i-level predicates”) can illuminate our understanding of the nature of middles.

2.1.3 Genericity of Middles

Since the crucial characteristic of middles is that they assign properties to entities, let us now explore this issue further. In the literature (cf. Condoravdi (1989), Krifka et al. (1995)), middles are referred to as characterizing or generic sentences. Generic sentences do not report particular events in time i.e. they are typically stative. This is, indeed, the kind of behavior middles exhibit. Recall that middles indeed pattern with statives with respect to the tests on stativity – the inability to occur in progressive, being one of them (cf. (6b)). Consequently, the stativity of middles follows from their genericity.

It is standardly taken in the literature that generics tend to go with imperfective aspect. Namely, characterizing sentences are typically found in present simple tense, though they can also occur in past simple tense or future. In light of this claim, recall that middles are typically tied to the present simple tense, though they can also appear in past tense with generic reference (cf. (9a)). Moreover, it should be noted that characterizing sentences do not put any limits on the kinds of nominal phrases

that can occur in them; proper names, definite singulars, indefinite singulars quantified NPs, bare plurals, and bare singulars are all admissible in characterizing sentences. Consequently, Krifka et al.'s (1995) conclusion is that genericity should be analyzed as a type of sentence; it should not be tied to a particular type of a nominal phrase. Again, in this respect, middles seem to be a typical instantiation of generic sentences. Quite often, middles occur with definite singulars, for instance, and still remain characterizing sentences (21).

(21) This book reads easily.

Finally, it has also been pointed by Krifka et al. (1995) that characterizing sentences do not express “timeless truths” (c. Lyons (1977), for instance). Namely, it is possible to claim that a characterizing property held in the past, or will hold in the future, without any implication for the present. Consequently, the fact that examples like (10) are genuine middles even though they are temporarily restricted fits perfectly with the diagnostics of what generic sentences are. Finally, the modal flavor of middles - often noted in the literature (cf. Fagan (1992), Ackema and Schoorlemmer (1994), (2003)) - can be argued to follow from the fact that Gen is a modal operator (cf. also Steinbach (1998)).⁹⁹

Let us explore this issue of the genericity of middles in a bit more detail. Middles are argued to be very similar to universally quantified sentences. However, the quantification in middles is not universal - it is generic (i.e. quasi-universal). As argued in the literature (cf. Chierchia (1995a) and Krifka et al. (1995), for instance), these two categories must be kept apart. Namely, generic sentences allow for exceptions, whereas universally quantified sentences make a claim for every object of a certain sort. For example, if, from time to time *John* does not smoke after dinner, the sentence in (22a) is still true. The sentence in (22b) - being universally quantified - is false under the same conditions.

(22a) John smokes a cigar after dinner.

(22b) Always after dinner/After each dinner, John smokes a cigar.

(Krifka et al. (1995))

The quantification in middles is Generic. Gen can be thought of as a phonologically null counterpart of adverbs such as *usually* or *typically* (cf. Krifka et al. (1995)). The generic reading of middles follows from the presence of the generic operator (i.e. Gen) in the logical form of a middle sentence. It is now standardly assumed that Gen is a dyadic operator that binds any free variable in its scope and relates two open formulas, the restrictor and the matrix (nuclear scope).¹⁰⁰ What is described by the

⁹⁹ For an in-depth overview of the advantages and disadvantages of the existing analyses of the semantics of the generic operator, the reader is referred to Krifka et al. (1995).

¹⁰⁰ Cf. also Krifka (1995).

matrix generally holds for the restrictor of a generic sentence. In the literature on middles, authors differ with respect to what the generic quantification is over. Condoravdi (1989) treats them as characterizing sentences that involve primarily generic quantification over events. Fellbaum (1985) and Fagan (1988) state that the generic quantification is over the implicit agent. The standpoint here is that since Gen takes a sentential scope and binds any free variable in its scope, it binds both the event variable and the variable of the implicit Agent role (cf. also Steinbach (1998)).¹⁰¹ On Condoravdi's (1989) account, the partitioning is such that the predicate denoted by the middle verb ends up in the restrictor, while the adverbial appears in the matrix as in (23). The standpoint in this study is that Condoravdi's semantic analysis of middles is essentially right.¹⁰²

- (23a) Bread always cuts smoothly.
- (23b) Always [e, x, y : bread (y), cut (e), Patient (e, y), Agent (e, x)]
[smooth (e)]
- (23c) For all value assignments g to the triplet (e, y, x) such that $g(e)$ is an event of cutting, $g(y)$ is bread and a patient in an event of cutting, and $g(x)$ is an agent in an event of cutting, then $g(e)$ is smooth.

(Condoravdi (1989))

As we will see shortly, however, not all middles require an adverb. Consequently, let us spell out how the partitioning of generic sentences is done. "The focused part of an utterance with an operator such as Gen is always in the matrix" (Krifka et al. (1995); p. 27).¹⁰³ The complementary notion to focus is the background. The background (including the topic) is mapped into the restrictor (cf. Krifka et al. (1995) and Krifka (1995)).¹⁰⁴

¹⁰¹ As evident from (23), this is true of Condoravdi's (1989) analysis as well. The important step of Condoravdi's analysis (compared to approaches to middles preceding it) is in the claim that it is the event variable that is bound in the middles. The reader is also referred to Chierchia (1995a), (1995b) for an elaborate account according to which generic sentences correspond to generalizations over events.

¹⁰² In Chapter 4, I will return to the precise details of the semantic representation that need to be assumed here.

¹⁰³ For the purposes of our discussion, this highly simplified picture suffices. For in-depth theories of semantics and pragmatics of focus, the reader is referred to Krifka (1995) and Rooth (1995).

¹⁰⁴ For different approaches to the partitioning of generic sentences, the reader is referred to Chierchia (1995a) and Steinbach (1998) and the references there. The differences between approaches should not come as a surprise. Namely, the reader should be aware that the semantics of generic sentences is still an unsettled issue in the literature. The reader is referred to Krifka et al. (1995) for an elaborate presentation and in-depth criticism of existing approaches to generic sentences in the literature and to Delfitto (2002) for elaboration and criticism of Chierchia's (1995a), (1995b) approach.

We will return to the issue of the partitioning of middles shortly. At this point, the reader should note that all the properties of middles exhibited in the previous subsection follow from the fact that they are characterizing - generic - sentences. On the other hand, genericity does not follow as an entailment from the other properties (like stativity). Consequently, I argue that the defining property of middles is that they are generic statements.

Notice, now, that - though they are both generic statements - middles in English and middles in SC do not behave in the same way. To see this, let us first examine the sentences in (24). With sentences like (24a), the generic interpretation stems the fact that Gen binds the event/situation (cf. Krifka et al. (1995)). Typically, when generic sentences in English are forced into progressive, they lose their generic character (24b). In such a case, the sentence is grammatical but it describes a particular event. This episodic reading arises when the event variable is bound by the existential quantifier.¹⁰⁵ The same is true in SC; whereas (25a) is generic, (25b) is episodic. Since SC lacks the progressive, I use the adverbial of specific time reference *upravo at the moment* to point to the parallelism between SC and English in this respect.

- | | | |
|-------|---|--------------------|
| (24a) | Max drinks. | (generic reading) |
| (24b) | Max is drinking. | (episodic reading) |
| (25a) | Maks pije. | (generic reading) |
| (25b) | Maks <i>upravo</i> pije.
Maks at the moment drinks | (episodic reading) |

Turning to middles, let us first take a look at SC. The SC middle-predicate seems also to allow these two options; whereas (26a) is a generic sentence, (26b) is a particular sentence describing an ongoing event of drinking.

- | | |
|-------|--|
| (26a) | Tekila se teško pije.
Tequila drinks with difficulty |
| (26b) | Tequila se <i>upravo</i> pije.
Tequila is being drunk at the moment |

¹⁰⁵ I am presenting only the key points relevant for our discussion here. The reader is referred to Krifka et al. (1995) and the references there for elaborate presentation and discussion.

- (27a) Tequila drinks with difficulty.
 (27b) *Tequila is drinking with difficulty.

Note, by contrast, that unlike in (26a), the English middle in (27a) – as is the case with most middles in English – cannot be successfully put into the progressive (27b) (recall also the English examples in (6b)). Note further that even those middles that “survive” the progressive are argued to report a stative property; they do not give rise to episodic reading (recall the discussion of the examples in (7)).

In Chapters 4 and 5, I will return to the question of how this difference between English and SC is derived. For the time being, just note that this unusual behavior of middles in English cannot be explained by appealing to any difference between stative and eventive verbs, since the predicate in all the examples in (24) - (27) is the so-called “episodic predicate” (cf. Krifka et al. (1995)). As argued by Krifka et al., characterizing sentences whose predicates are derived from episodic verbal predicates are habitual sentences. “Habitual sentences express generalizations over situations that are specified by the corresponding episodic verbal predicates” (Krifka et al. (1995): p. 32). With episodic predicates, if the existential quantifier binds the event variable, they give rise to particular – eventive sentences. This is apparently so for English and SC (24) – (25) as well as for SC (26). English middles, however, do not conform to this general picture. Note also that this behavior of English middles cannot be tied to the presence of the adverbial like *easily*. As already said, not all middles require the presence of the adverbial. Take a look at the middle in (28a) from Fellbaum (1985). Note, now, that the middle in (28a) cannot give rise to a felicitous particular sentence (28b).

- (28a) This dress buttons.
 (28b) *This dress is buttoning at the moment.

So, this peculiar behavior of middles in English must be derived independently of their aspectual status. In Chapter 4, I will return to this question and offer an explanation.

2.2 The Status of the External Role of Middles

2.2.1 *Is the External Role in Middles Present Semantically?*

That middles retain an implicit Agent has been long noted in the literature. Whereas the internal role is realized both in the syntax and semantics, the external role is present semantically, but not syntactically.

- (29) Silk dresses wash easily.
 ‘It is easy for one/people, in general, to wash silk dresses’

Fiengo (1980) and Keyser and Roeper (1984) derive the presence of this implicit agent by contrasting unaccusatives with middles. Fiengo derives the contrast between middles and unaccusatives via the contrast observed between passives and unaccusatives. Namely, whereas in (30a) and (31a), there is an Agent implied, such an implication is absent from (30b) and (31b).

- (30a) The milk was spilled.
 (30b) The milk spilled.
 (31a) The tomato was ripened.
 (31b) The tomato ripened.

Just like passives, middles imply an Agent. Namely, in both (32a) and (32b) an Agent is implied.

- (32a) The car was sold.
 (32b) Foreign cars sell easily. (Fiengo (1980))

Keyser and Roeper (1984) follow Fiengo’s line of argumentation. They argue that whereas *The hedge trims easily* presupposes a trimmer, *The boat sinks* does not require an Agent.

Utilizing the tools of the event semantics framework of Parsons (1990), these intuitions can be given a more formal treatment. Let us take a look at the sentences in (33). Recall that there is an intuitive awareness that (33a) and (33b) are somehow related. Recall also that there is more than just pure intuition here. There is an entailment relation: (33a) entails (33b), but not *vice versa*.

- (33a) Max closed the door.
 (33b) The door closed.

The logical form of (33a) is, roughly, as in (34a) and the logical form of (33b) is, roughly, as in (34b).¹⁰⁶

- (34a) $(\exists e)$ [closing (e) & [+c+m] (e, Max) [-c-m] (e, the door)]

¹⁰⁶ With respect to the causative member of the pair (34a), the reader is reminded that Parsons (1990) argues for the dual event analysis of causatives like (34a) and against the ‘one-event analysis’ as in (34a) (cf. Parsons (1990) and the discussion in Chapter 1: Section 2.2.4).

(34b) $(\exists e)$ [closing (e) & [-c-m] (e, the door)]

Consequently, the role of Agent in the unaccusative (33b) is not just syntactically unrealized – it is absent from the semantics of (34b) altogether. This is exactly what the operation of Expletivization does in the Theta System (cf. Chapter 1: section 2.2.4). It completely reduces the role both from the syntax and semantics. The claim here is that, unlike the operation of Expletivization, the operation of Middle Formation saturates the role. It makes it unavailable for the assignment in the syntax though the role is present in the semantics of middles.

A question that immediately arises is how this difference in the semantics of unaccusative outputs and middle derivations can be teased apart? Following Reinhart (2000) and Siloni (2003), I propose the use of the Instrument Test to corroborate that the syntactically unrealized external role is present semantically. The instrument role is available if the external argument is semantically or syntactically present. The definition in (35) is taken from Siloni (2003).

(35) Instrument Generalization
An instrument requires the explicit (syntactic) or implicit (semantic) presence of an Agent in order to be realized syntactically.

As seen in (36), the instrument role is available with passives (36a) and middles (36b). Crucially, it is illicit with unaccusatives (36c). Recall that in the Theta System, the unaccusative derivation is the output of the reduction of the external theta-role; the external role is no longer semantically and syntactically available. With passives and with middles, the external argument of the base-entry is saturated i.e. semantically present, but not syntactically realized.

- (36a) The window was opened with a knife. (passive)
 (36b) The window opens easily with a knife. (middle)
 (36c) The window opened *with a knife. (unaccusative)

Consequently, I conclude that the external role in middles is present semantically. The question that now arises is how the implicit role is interpreted. There is a general agreement in the literature that the implicit role is interpreted as an unspecified, generally plural, human entity. The understood theta-role in middles is interpreted, roughly, as *one* or *people*, *in general* or *any arbitrary person*. Various explanations have been offered to account for this. A highly favored one (cf. Fagan (1992)) is an explanation along the lines of Rizzi (1986), where the generic interpretation of the implicit role is the result of the assignment of *arb* to this external role. According to Rizzi, *arb* is “a collection of features” that include +human and +generic.

Even on empirical grounds, such an analysis is not tenable since *arb* and Gen occur independently. Take a look at (37), for instance. Based on the existence of examples like (37), Rizzi points out that “the English verbs allowing an understood arbitrary object do not homogeneously require a generic time reference” (Rizzi (1986): fn. 12)).

(37) Yesterday John warned (everyone) against this mistake.

(Rizzi (1986))

As already said, the claim here is that the quasi-universal interpretation of middles arises from the presence of the Gen operator in the LF of a middle. This operator, in turn, unselectively binds all free variables in its scope. Consequently, both the event variable and the variable of the implicit role will be bound by Gen. The fact, however, that middles retain an implicit role that is interpreted as arbitrary with a +human flavor remains and it needs to be explained. I will return to the source of this arbitrary +human interpretation in Chapters 4 and 5.

2.2.2 Middles and Stative Unaccusatives

Though authors like Keyser and Roeper (1984) use the differences between middles and unaccusatives to argue that the implicit Agent is present in the former and absent from the latter, the issue does not seem to be fully settled. One finds examples similar to (38a) treated as middles.

(38a) Sensitive plants die easily.

(38b) Silk dresses wash easily.

By the criterion just established, instances like (38a) are not middles. As already stated, one of the crucial characteristics of middles is the presence of an implicit Agent. Derivations like (38a) do not have an implicit Agent in their logical forms as witnessed by the inability to license the Instrument as in *Sensitive plants die easily *with scissors/*with poison*. Consequently, they should not be considered as middles. Notice, however, that semantically, outputs like (38a) are quite similar to middles (38b). What seems to be at the core of the confusion is some sort of ‘property reading’ that is present in both examples in (38). Namely, just like the middle in (38b) ascribes a property of *wash-ability* to *silk dresses*, (38a) ascribes the property of *die-ability* or *physical fragility* to *plants*.¹⁰⁷ Thus, both (38a) and (38b)

¹⁰⁷ The availability of the *-able* paraphrase is quite acceptable for middles as middles typically express a modal flavor of capability and since, in a great majority of cases, *-able* affixes to a transitive verb, yielding an adjective with a meaning roughly (i).

are characterizing sentences. Since generic statements ascribe properties to entities, the semantic closeness of (38a) and (38b) should not come as a surprise. Notice that both outputs in (38) are in present simple tense. This, alone, has huge implications for the interpretation of (38a). Generally, present simple tense in English is used to express generic statements.¹⁰⁸ In simple terms, present simple tense can be thought of as a useful tool for ‘coercing’ something that is eventive into something that is stative. Indeed, though *die* is a +telic verb, an output like (38a) is no longer telic or eventive. This can be easily tested by the inability of (38a) to license *in X time* adverbials.¹⁰⁹ Since the presence of the implicit external role is a defining property of middles, it is only (38b) that is taken to be a middle output. Sentences like (38a) –

-
- (i) “a person/thing who/that is ‘ α -able’ can be ‘ α -ed’ by someone, where α = *eat, wash*, and the like.”

Since it is not relevant for the presentation here, I am glossing over the “idiosyncratic” -added component of meaning that some of the outputs of Word Formation Rules like *-able* rule have.

¹⁰⁸ Just like the stative unaccusative in (38a), the middle in (38b) has a modal flavor of capability. The type of modality associated with middles is “weak modality”. Consequently, one often finds middles (i) being paraphrased as in (ii) or (iii). As already said, it is standardly assumed that present simple tense in English has a generic interpretation. “In English, the simple present (which is aspectually imperfective) has a predominant habitual interpretation (Chierchia (1995b): p. 197). One of the functions of generic sentences is to express capability or possibility. The examples in (iv) and (v) -taken from Chierchia and McConnell-Ginet (2000) – illustrate this.

- (i) This book reads easily.
- (ii) This book is readable.
- (i) One can read this book with ease.
- (iv) This program parses complicated sentences.
- (v) This program *can* parse complicated sentences.

¹⁰⁹ One could also speculate that the similarity between (38a) and (38b) might also be rooted in the shared properties of states and achievements that Vendler (1967) identifies. Namely, though in Vendler’s (1967) system states (e.g. *desire, love*, and the like) are –telic and achievements (e.g. *recognize, spot, die*, and the like) are +telic, they share certain common characteristics. This might be important for our discussion as middles behave like stative –*love*-type verbs, whereas *die* is an achievement. In Vendler’s system, stative verbs like *love* and achievements like *recognize* are very much like ‘qualities’. Namely, Vendler points out that *to be able to love* is, in a way *to love* in a very similar way that *to be able to recognize* is *to recognize*. If some sort of ability reading is readily available with the core cases of achievements, then this could further facilitate their similarity to middles.

though very similar to middles – are instances of stative unaccusatives. Though both are generic, only the latter qualifies as a middle.

It is important to point out that though the presence of *easily* might be argued to further facilitate the similarities between the unaccusative and the middle in (38), it has been argued that this adverb does not behave in the same way when it occurs with middles and when it occurs with unaccusatives. As argued by Fellbaum (1986), the differences are both syntactic and semantic. As pointed out by Fellbaum, with unaccusative outputs in English, the adverb is more moveable: it can precede or follow the verb (39). This is not the case with middles in English (40). She also argues that the interpretation of *easily* with middles is *not difficult to do* i.e. *easily* in this sense is opposed to *with difficulty* (cf. Vendler (1984)), whereas with unaccusatives, the interpretation of *easily* is *at the slightest provocation*.

(39a) Delicate plants easily die when left alone.

(39b) Delicate plants die easily when left alone.

(40a) Silk dresses wash easily.

(40b) *Silk dresses easily wash.

To sum up, though there are several factors that facilitate the similarity between middles and stative unaccusatives, these two should not be grouped together. Stative unaccusatives like (38a) should not be mistaken for middles since middle semantics requires the presence of the implicit Agent. This crucial characteristic of middles is absent from outputs like (38a).

2.2.3 *Is the Implicit Argument Assigned In the Syntax?*

Whereas the semantic presence of the external role (i.e. the implicit argument) is generally accepted in the literature, authors differ with respect to whether the external theta-role is assigned in the syntax. Roberts and Hoekstra (1993) and Stroik (1992), (1999) argue that the external role in middles is syntactically realized. Fagan (1992) and Ackema and Schoorlemmer (1995), (2003) argue that the external role in middles in present only semantically. Before we proceed any further, there is one point that needs to be noted here. As we will see shortly, some of the tests presented in the literature - used by both the proponents and the opponents of the idea that the external role of middles is present only implicitly – might leave one utterly unconvinced since one is not sure what the tests actually diagnose.

Let us start by examining some of the arguments used to argue that the external role is realized in the syntax. It is agreed in the literature that instances of anaphoric binding require the antecedent to be syntactically present. Stroik (1992) argues that

examples like (41) illustrate that the implicit argument is syntactically realized since SELF-anaphors like *oneself* need to be bound by a c-commanding antecedent.

- (41) Books about oneself never read poorly.

Ackema and Schoorlemmer (1995), however, show that the argument turns out to be unconvincing since the data like (41) do not illustrate instances of anaphoric binding. Let us present the argument. Recall first that in Reinhart and Reuland's theory of binding (1991), (1993) SELF-anaphors can be used logophorically (cf. Chapter 2). A SELF-anaphor can be used logophorically when it occurs in an adjunct or in an embedded position. When it occurs as a logophor, a SELF-anaphor does not need a syntactic antecedent. In other words, it may be permitted in an environment where it is not bound (c-commanded) by an antecedent.

- (42a) Max's eyes watched eagerly a new picture of himself in the paper.

- (42b) Bismarck's impulsiveness had, as so often, rebounded against himself.

(Reinhart & Reuland (1991))

Furthermore, in some instances of logophoric use of SELF-anaphors, the antecedent is not even present. The examples in (43) - taken from Reinhart & Reuland (1991), after Ross (1970) - illustrate the point.

- (43a) Physicists like yourself are a godsend.

- (43b) A picture of myself would be nice on that wall.

Going back to (41), what Ackema and Schoorlemmer (1995), (2003) argue is that the SELF-anaphor *oneself* in (41) is used logophorically. Being a logophor it does not need to be bound. Consequently, (41) cannot constitute an argument that there is a syntactically present external role in middles. It is easy to verify that *oneself* is used logophorically in (41). Recall that when occurring as an adjunct or within an argument, SELF-anaphors are logophors. It should be clear the cluster of *oneself* is not encoded on the grid of *read*. Namely, with respect to *read*, *oneself* is clearly an adjunct.

On Hoekstra and Roberts' (1993) account, on the other hand, the external role is syntactically realized as *pro*. On their account, this little *pro* is licensed by means of θ -identification (cf. Higginbotham (1985)) by the adverbs such as *easily*. Without going into any details regarding this process of licensing, one must be aware that such an analysis seems straightforwardly falsified by the empirical data. Namely, if the licensing of little *pro* is made contingent on the presence of an adverb such as *easily*, then the English example like (44) that is perfectly legitimate without any

adverbial modification present itself as a truly mysterious case of a grammatical output with unlicensed elements.

(44) This dress buttons. (Fellbaum (1985))

One could, of course, claim that both the licenser and the licensed element are null. In such a case, one should provide syntactic evidence that the null adverb is present in the derivation of middles like (44). As we will see shortly (section 2.3), the fact that middles require some sort of modification (focus intonation, for instance) cannot be taken to mean that they contain a phonologically null adverbial.

As already said in the introduction to this section, some of the arguments used in the literature to argue either against the presence of the implicit external role of middles or for the presence of the implicit and (by implication) the syntactically realized external role of middles stand on a shaky ground to start with as it is not quite clear what the test in question should indicate. Let us illustrate this by taking a tour through the notorious phenomenon of control into purpose clauses.

It has long been noted in the literature that whereas passive sentences allow control into purpose clauses (45a), unaccusatives (45b) do not (cf. Chomsky (1981), Manzini (1983), and Jaeggli (1986a)). It has been suggested the construction in (45b) is somehow derived by deletion of the external role (cf. Jaeggli (1986a), for instance).¹¹⁰

(45a) The price was decreased [to help the poor]

(45b) *The price decreased [to help the poor]

Just like the unaccusative derivations (45b), middles are generally argued not to be compatible with purpose clause (46a). Should this be taken to mean that middles do not have a semantically present external role? The answer to this question is negative.

(46a) *Wooden ships sink easily [PRO to collect the insurance]

Roberts' (1985) roots the incompatibility of middles with purpose clauses in their semantics – the stativity of middles. Namely, purpose clauses are as illicit with middles (55a) as they are with stative verbs (46b).

(46b) *John deliberately believed that the earth was flat in order to annoy the teacher.

(Roberts (1985))

¹¹⁰ With respect to unaccusative derivations like (45b) this is also the view held in the Theta System (cf. Chapter 1 on Expletivization).

Thus, even at the first leg of this tour, the purpose-clause test seems to fail us. Namely, taking into consideration data like (46b), one could say that the purpose-clauses test does not tell us anything about the semantic or syntactic presence/absence of the implicit argument. It simply tells us that middles are stative, which is perfectly in line with the nature of middles and is independently corroborated by a whole barrage of tests. Things, however, get even more interesting. For instance, Fellbaum and Zribi-Hertz (1989) claim that purpose clauses are generally illegitimate with middles on pragmatic – and not on semantic (i.e. aspectual) - grounds. On their account, “a sentence with a property reading is compatible with purpose clauses if the sentence can be interpreted as involving some kind of ‘external’ control, exercised by a narrator, director, etc” (Fellbaum & Zribi-Hertz (1989): 27). Consequently, they claim, there are pragmatic conditions that render both regular statives and middles compatible with purpose clauses (47).

(47a) The window is bullet-proof (in order) to protect the president.

(47b) This dog food cuts and chews like meat in order to make your pet happy.

At this point, it appears clear that the purpose-clause test indeed has absolutely nothing to do with the presence of the implicit argument *per se*, but one may also wonder what it actually diagnoses.¹¹¹

Though Roberts’ (1985) and Fellbaum and Zribi-Hertz’ (1989) approaches to the licensing of purpose clauses do not actually tell us anything about the status of the implicit argument, in the light of Koster’s (1984) work on control of PRO, purpose clauses can be construed as a test that shows that the implicit role in middles is semantically active. Following Koster (1984), many researchers have argued that the control of PRO in purpose clauses - as well as adjunct small clauses - is not an instantiation of syntactic control. The controller in such cases is implicit; henceforth, this type of control is labeled ‘semantic control’. As seen in (48), both middles and passives allow semantic control since both middles and passive have a semantically present external role.¹¹²

(48a) The castle was sold [to raise the money]

(48b) Such castles sell easily [without any special advertisement]

¹¹¹ The reader is also referred to Dowty (1991) and the references there for the claim that in the case of purpose clauses it is “extralinguistic practical reasoning” i.e. “reasoning about who would have what object at his/her disposal at what point in the action” (Dowty (1991): 558) that determines the control in such cases.

¹¹² The reader is referred to Cinque (1988) and the reference there regarding the issue of control in adjunct *without*-clauses.

If one, however, accepts Koster's (1984) assumptions about semantic and syntactic control, then one has to also accept that there is clear evidence that the implicit argument – though semantically active – is syntactically inactive (contra Stroik (1992) and Hoekstra and Roberts (1993)). Namely, unlike semantic control, obligatory or 'anaphoric control' (to use Koster's (1984) terminology) requires a syntactically present, c-commanding argument controlling PRO. The environment for syntactic control is the so-called 'control verbs' (cf. Williams (1980), Koster (1984)). *Promise* is one such verb. Importantly for testing middles, *promise* is a subject control verb (49).

(49) Max promised Mary [to excuse himself/*herself]

Such syntactically controlled PRO is found with verbs that do not select *for*-complementizer of gerunds. Having established these facts, notice that neither (50a) nor (50b) is a grammatical output. Consequently, one can conclude that neither middles nor passives have an external role syntactically realized on an argument.¹¹³

(50a) *Mary was promised to go.

(50b) *Mary promises easily to go.

At this point, one might be convinced that semantic control can be used not as an argument for a syntactically present implicit argument, but only for a semantically present implicit argument. Be all that as it may, in Lasnik (1984) and Williams (1985), the phenomenon of semantic control gets a quite different interpretation. Lasnik approaches the issue of semantic control of PRO in purpose clauses by proposing the mechanism of event control, with the matrix clause *The castle was sold* being the controller of PRO. Williams' account of S-control is quite similar to that of Lasnik.

Thus, bearing in mind different interpretations of what the 'semantic control' diagnoses, one should be very cautious with respect to using it. Namely, not just the analyses like Lasnik (1984) and Williams (1985), but also the analyses of Roberts (1985) and Fellbaum and Zribi-Hertz (1989) indicate that the presence of the semantic controller has nothing to do with status of the external role. A further problem is, of course, that in all these analyses the phenomenon receives a different interpretation.¹¹⁴ For that reason, I find the licensing of instrument phrases as presented in 2.1.1 a much more straightforward test to show that middles have a semantically present Agent. What also seems to be clear is that whatever

¹¹³ The requirement does not conflict with the accounts of passive of Jaeggli (1986a) and Baker et al. (1989) since, on their account, the external-theta role in passives is present syntactically, but realized on a non-argument: it is assigned to the passive suffix (e.g. *-en* in English).

¹¹⁴ The issue of Control is far more complicated and far more controversial than presented here. For an excellent overview and a critical analysis of the existing approaches to the issue of Control, the reader is referred to Landau (2000).

interpretation one decides to associate with semantic control as a test, it cannot be used to argue for the syntactically present external role of middles. Namely, even if one takes semantic control as a test for the presence of the external role, it only shows that the external role of middles is semantically present, but crucially, not that it is syntactically present. Last but not least, the only clear thing about the semantic control is that it cannot be used to argue for the presence of the syntactically realized external role. Namely, if anaphoric control is taken as a test of a syntactically present argument controller, then the implicit argument in middles clearly does not pass this test. Consequently, arguments pertaining to binding and control do not give any indication that there is a syntactically realized external role in middles.

To summarize, the second characteristic of middles is that they do not have a syntactically realized external role. They do, however, retain an implicit role that is interpreted, roughly, as ARB with +human flavor.

2.3 Licensing of Middles

2.3.1 *Is Adverbial Modification Obligatory with Middles?*

Adverbial modification is yet another characteristic that is usually associated with middle derivations. Middles are usually said to require some kind of manner adverb modification (51).

- (51) The wall paints *(easily).

Though outputs like (51) are also ungrammatical without the presence of the adverb, it has been long noted in the literature that not all middles require an adverb to be present (cf. Keyser and Roeper (1984), Roberts (1985), Fellbaum and Zribi-Hertz (1987), Steinbach (1998), to name just a few). Firstly, middles can be licensed in ways other than by adverbial modification: negation and focus intonation license perfectly acceptable middles. Examples like (52) are typically given in the literature to illustrate this.

- (52a) Der Dreck wäscht sich nicht aus.
The spot won't wash out. (Fagan (1992))

- (52b) Die aardappels ROOIEN, niet te geloven!
these potatoes dig-up, not to believe

(Ackema & Schoorlemmer (2003))

- (52c) This wall PAINTS..... (Phew!)

(Ackema & Schoorlemmer (1995))

There is also a sample of middles which – at the first glance – do not seem to require anything of the above. The English examples in (53a) and (53b) are from Fellbaum (1985), the French examples in (53c) and (53d) are from Fellbaum & Zribi-Hertz (1989), and the German example in (53e) is from Fagan (1992).

- (53a) This umbrella folds up.
- (53b) This dress buttons.
- (53c) Cette chaise se plie.
this chair SE-CL folds (= ‘is foldable’)
- (53d) Replay, le premier stylo don’t l’ encre se gomme.
Replay, the first pen whose ink SE-CL erases (= ‘is erasable’)
- (53e) Diese Kleid knöpt sich zu.
This dress buttons.

How can these facts be accounted for? Before proceeding any further, let us, first, sum up the data. A great majority of middles require the presence of an adverb like *easily*. There are, however, other ways of licensing middles: negation and focus intonation. There are also middles that seem not to require anything of the above. Let us first start by accounting for the majority of cases, and then, let us see whether the small sample in (53) can somehow be accounted for by some general rule. If we ignore for the moment instances like (53), the question that arises is why middles need to be licensed to start with. The question seems to be a legitimate one, since passives – which are very similar to middles in being the outputs of saturation – do not require any type of modification.

I argue that the key to the requirement for modification lies in the fact that middles are generic statements. Recall that I have adopted the quantificational analysis of middles of Krifka et al. (1995), on whose account the logical form of generics is a tripartite structure consisting of a generic operator, a restrictive clause and a matrix (nuclear scope). A restrictive clause restricts the domain of the operator and the matrix comprises the main assertion. In simple terms, whatever is in the matrix holds for the restrictor. Let us now look at the examples in (54). On a ‘neutral’ intonation, (54a) is argued to be out.

- (54a) *The book reads.
- (54b) The book reads easily. (Fellbaum (1985))

Following Condoravdi (1989), I argue that the example in (54a) is out due to the violation of a well-formedness condition on the logical form of the middle. The sentence in (54a) is uninterpretable because the matrix is devoid of content. The sentence in (54b), on the other hand, is perfectly fine since the adverb contributes to

the content of the matrix. This is essentially what Condoravdi proposes for the presence of adverbial modification in middles; “without an adverb which contributes to the nuclear scope, we set up a domain of quantification for those members we end up predicating nothing” (Condoravdi (1989): 19).

Let us explore the issue a bit further. One could now raise questions of why is it that the adverb in (54b) ends up in the matrix and - provided that the adverb always ends up in the matrix - why is the presence of an adverb not obligatory in the middle e.g. why are some middles licensed by focus. This is where we need to remind ourselves of the role of focus in the partitioning of generic sentences. Recall that according to Krifka et al. (1995) and Krifka (1995), the partitioning of semantic material into the restrictor and matrix is related to “stress placement and sentence intonation”, where “the focused part of an utterance with an operator such as Gen is always in the matrix” (Krifka et al. (1995); p. 27).¹¹⁵ Recall that the complementary notion to focus is the background. Recall, further, that on Krifka et al.’s account, the background (including the topic) is mapped into the restrictor.¹¹⁶ In simple terms, one can say that the old information – what the sentence is about - is mapped into the restriction whereas the new information – what is asserted about the topic, i.e. focus is mapped into the matrix.¹¹⁷ In the light of this, let us take another look at (44). The information conveyed by (54a) is old – all books can be read – it is a part of world knowledge. Hence, there is nothing to be mapped into the matrix. In simple terms, the sentence in (45a) is uninterpretable since it would read something like *for all events of reading the book by any person, it holds*. In (54b) the adverb *easily* constitutes new information; hence it is the focus constituent. Consequently, the adverb *easily* maps into the matrix. This line of reasoning fits in with the “pragmatic” account of Fellbaum (1985). On Fellbaum’s account, the oddness of sentences like (54a) and (55a) is due to the fact that they convey pragmatically given information. Namely, as it is world knowledge that books can be read, so it is world knowledge that skirts can be washed. Since the information given in (54a) and (55a) is not “viable – newsworthy”, Fellbaum concludes that outputs like (54a) and (55a) are odd. On Fellbaum’s account, stating that a certain book or certain clothes can be read/washed *with difficulty* or *with ease* constitutes pragmatically new information and thus, outputs in (54b) and (55b) are fully acceptable. In other words, whereas stating that a book can be read is not “viable piece of information”, stating that a certain book can be read *with difficulty* or *with ease* constitutes pragmatically new information

¹¹⁵ For the purposes of our discussion, this highly simplified picture suffices. For in-depth theories of semantics and pragmatics of focus, the reader is referred to Krifka (1995) and Rooth (1995).

¹¹⁶ For elaborate and in-depth theories regarding the impact of focus in adverbial quantification in general, the reader is referred to Rooth (1995) and Krifka (1995).

¹¹⁷ Again, I am simplifying the picture for ease of exposure. “Focus cannot be interpreted independently (e.g. as a part of the utterance that is new) but only in relation to a focus operator (FO) that is associated with that focus” (Krifka (1995): 240).

(55a) *These clothes wash.

(55b) These clothes wash easily. (Fellbaum (1985))

Bearing in mind what we know about the role of focus with respect to the partitioning of a generic sentence, one can, thus, conclude that though the ill-formedness of middles like (54a) and (55a) is semantic, pragmatic factors play an important role. As noted by Condoravdi, “the obligatoriness of the adverb is not absolute; an adverb is not obligatory if something else contributes to the content of the nuclear scope”. The conclusion drawn here is that pragmatics, as well as other factors, influence the partitioning in so much as they contribute to determining what the focus is in a particular sentence. I will return to this point shortly. Let us first sum up our findings so far. Knowing what the requirements are for something to be mapped into the matrix, one has a uniform account for licensing by adverbs and focus intonation. It is focus that induces the partitioning of the semantic material into the background (i.e. restrictor) and the focus (the matrix) (cf. Krifka (1995)). Finally, note that negation has been argued to have the same affect. Namely, it has been argued in the literature that negation induces the partition of the semantic material into the restrictor and the matrix required for the well-formedness of generics (cf. Condoravdi (1989) and the references there for the formalization of this idea). This, then, helps us understand the mystery of the majority of cases of middles.

Let us now go back to the seemingly mysterious examples in (53). As suggested by Alexis Dimitriadis (p.c.), the examples in (53) should be analyzed as having the verb as a focus constituent (56a).¹¹⁸

(56a) This dress [buttons]_F

(56b) Gn e, x [C (e) & Agent (e, x) & Theme (e, this dress)] [buttoning (e)]

Following the discussion so far, the verb, then, ends up in the matrix and the logical form of (56) is well-formed. The logical form of (56) is well formed since the matrix is not devoid of content. The reading of (56) is something like “It is a generic

¹¹⁸ C should be understood to include any useful contextual pieces of information. As argued in the literature, with simple sentences, it is very difficult to define the restrictor. It is suggested in the literature (cf. Krifka et al. (1995), and the references there and Chierchia (1995a)) that the restrictor is derived pragmatically in such cases. For instance, for (i), the restrictor could be situations which contain *Max* and which are somehow normal situations with respect to drinking. Consequently, the restrictor is left to be specified by the context. For elaboration and discussion, the reader is referred to Krifka et al. (1995), Krifka (1995), and Chierchia (1995a).

(i) Max drinks

property of any event *e* and any person *x*, that if *e* is a contextually determined event whose Agent is *x* and whose Theme is the dress, then *e* is a buttoning event". In the appropriate context, the contextually determined event is most likely associated with some aspect of *x* putting on a dress in an appropriate way, (in particular, with fastening the dress). Again, the analysis perfectly ties in with the pragmatic account of Fellbaum (1985). As already said, Fellbaum argues that those middles that do not require an adverbial convey "viable information", whereas those that require an adverb carry pragmatically given information. On her account, the derivation in (56) does not require an adverb, because it conveys a "newsworthy" piece of information; whereas all dresses are *washable* (cf. 54a), not all dresses are *buttonable*.

As argued here, identifying the focus of an actual middle sentence depends on a variety of factors, pragmatic ones included. Let us illustrate this with two further examples. As Fellbaum and Zribi-Hertz (1989) note - given an appropriate discourse environment - "once we allow for the existence of walls that do not paint"- something like (57) becomes a perfectly acceptable middle. Then - unlike with the unacceptable (51) - the *paintability* becomes a "newsworthy" piece of information in (57). Since it is new information, it is the focus constituent. Since the verb is the focus constituent, it ends up in the matrix, with the result that the logical form of (57) is well-formed.

(57) This wall [paints]_F

Let us finally take a look at the example in (58) adapted from Steinbach (1998), after Krifka et al. (1995)). In many instances, the subject of the middle is its topic. Provided the question-answer pair in (58), however, *Tristram Shandy* ends up in the matrix since it is the focus constituent, whereas the rest of the sentence ends up in the restrictor.¹¹⁹

(58a) What reads easily?

(58b) [Tristram Shandy]_F reads easily

(58c) Gn *e*, *x* [reading(*e*) & [+c+m](*e*, *x*) & easy (*e*)] [[-c-m] (*e*, TS)]

To sum, middles require some sort of modification due to a well-formedness condition of the logical form of the middle: the matrix cannot be devoid of content (cf. also Condoravdi (1989)). Note, however, that pragmatic factors (among others) play an important role in identifying what the focus is in a particular middle

¹¹⁹ The quantifier is interpreted "with respect to a set of alternatives ALT(F) to the interpretation of the focus constituent F. This set of alternatives is typically provided by the context" (Krifka (1995): 241). The set of salient alternatives with respect to focus in (58) could include {*Process*, *Finnegan's Wake*, *The Idiot* etc.}, for instance.

sentence. In terms of the characterization of middles cross-linguistically, then, the issue of modification follows from the genericity of middles.

2.3.2 Which Adverbs are Admissible in Middles?

Though the majority of middles are licensed by the presence of an adverb like *easily*, the proper characterization of the set of adverbs admissible in middles is still a matter of great controversy in the literature. Let us, then, end this section by briefly examining the set of admissible adverbs in the middle. I will limit the investigation to only those adverbs that are prototypically associated with middles and provide only a tentative conclusion about the set.

Our modest sample will include the uncontroversial cases like *easily* and *with difficulty*. *Easily* is a VP-modifier. There are various tests to corroborate this. For instance, with respect to the presupposition under negation test (cf. Parsons (1990)) and with respect to its position *easily* comes out as a VP modifier. VP-modifiers are allowed in Aux and VP-internal position, but not in the initial position (cf. Jackendoff (1972)). When a VP-adverb occurs in a simple negated sentence, the negation is of the whole sentence, including the adverb (cf. Parsons (1990)). *Easily* passes this test. For instance, the sentence like *Expensive apartments do not rent easily* - to deny that *Expensive apartments rent easily* - can be followed by *Expensive apartments do not rent at all*.

In Parsons' (1990) system, VP-modifiers stand for properties of underlying events or states – they are event modifiers. In Vendler's (1984) system, the type of modification that adverbs such as *easily* bring about is always with respect to an Agent. This insight ties in with the way we, actually, interpret middle sentences like (59a). Recall that a middle like (59a) is roughly paraphrasable as in (59b). Note further that adjunct *for*-phases – comparable to adjunct *by*-phrases in their function, are licensed in middles (59c).

(59a) Max bribes easily.

(59b) It is easy for anyone to bribe Max.

(59c) Max bribes easily for anyone.

Combining this insight into Parsons account of VP-modifiers like *easily*, one could say that an adverb like *easily* modifies an underlying event with respect to an actual or potential Agent. The reading of (59a) is something like “it is a generic property of events of bribing Max by anyone that they are easy events for anyone” and the semantic representation is given in (59d).

(59d) Gen e, x [bribing (e) & [-c+m] (e, Max) & [+c+m] (e, x) & easy (e, x)]

Consequently, taking into account adverbs like *easily* and *with difficulty*- which are the prototypical middle-adverbs – it seems that the set of adverbs is dyadic, as argued in Roberts (1985), Fellbaum (1985) and Hoekstra and Roberts (1993).

Before any further elaboration of the issue of the admissible adverbs, there is one important point to be discussed. The fact that the majority of middles are licensed by the presence of adverbial modification has led to two main lines of research with respect to the need of adverbial modification in middles. On the one hand, accounts such as Pitz (1987) and Roberts (1985), tie the obligatory presence of adverbial modification to the presence of the implicit role. For Pitz, the adverb is needed for the implicit Agent role to be recoverable. For Roberts, it is needed for the identification of the implicit theta-role. Condoravdi (1989), on the other hand, ties the presence of the adverb to the requirement on a well-formedness condition on the logical form of a middle (cf. 3.2.1) and further claims that the choice of the adverb is in no way connected with the implicit role. For Condoravdi, the set of adverbs admissible in middles are - what she labels - “rate adverbs”, which “specify something about the mapping of events onto time, or about the amount of change effected by an event over time” (Condoravdi (1989): 21). Condoravdi presents two arguments to support her hypothesis that the middle adverb should be disassociated from the implicit role. On the one hand, Condoravdi argues that unaccusative verbs may appear in the middle construction. More precisely, she argues that “semantically, there is nothing to exclude an unaccusative verb from having the middle interpretation”. Since unaccusatives have no agent, the conclusion is that the adverb is in no way connected to the implicit role. On the other hand, Condoravdi notes that if the admissible middle adverbs were indeed those related somehow to the implicit role, middles should allow adverbs like *safely*, where (60) would mean something like *it is safe for anybody to shatter this rock*.

(60) *This rock shatters safely.

I think that the need for adverbial modification as such should be kept separate from the set of adverbs that are admissible with middles. Let me elaborate on this point. I concur with Condoravdi that the “presence of adverbial modification is due to a well-formedness condition of logical form representation” (Condoravdi (1989): 19), as discussed in the previous section.¹²⁰ It should be clear, however, that this does not *a priori* exclude the possibility that the actual set of adverbs admissible in middles is dyadic - related to an implicit agent in so much as they modify an underlying event with respect to a potential Agent.

With respect to the corroborating arguments Condoravdi gives, there are two important things to note. Firstly, regarding her argument about unaccusatives and middles, things do not seem to be as simple as this. In 2.2.2 of this Chapter, it was argued that stative unaccusatives should be kept separate from middles due to the

¹²⁰ As I will argue in Chapter 4, the recoverability of the implicit role can be ensured without appealing to the adverb.

fact that middles obligatorily have an implicit role.¹²¹ The similarities between the examples like (38a) and (38b) stems from the fact that both are characterizing – generic statements. Importantly for our discussion here, recall Fellbaum’s (1985) argument that – in both syntactic and semantic terms - *easily* does not behave uniformly when it appears with middles and when it appears with unaccusatives. The interpretation of *easily* with middles is *not difficult to do* i.e. *easily* in this sense is opposed to *with difficulty* (cf. Vendler (1984)). By contrast, with unaccusatives, the interpretation of *easily* is argued to be *at the slightest provocation*. Secondly, though Condoravdi is right in claiming that *safely* cannot be licensed in middles, note that *safely* does not seem to be licensed with experiencing verbs either (61). Since it is excluded with experiencing verbs, *safely* could be argued to pattern with Agentive Adverbs like *expertly*, *deliberately*, and *intentionally*. Agentive Adverbs are standardly argued not to be licensed with middles (cf. 2.1 of this Chapter and the references there).

(61) He loves/hates/likes/admires her *safely/*deliberately

Further, note that adverbs like *safely* differ from adverbs like *easily* in Vendler’s (1984) classification as well. Namely, whereas *safely* seems to pattern with adverbs “that posit some trait in the Agent”, *easily* is argued by Vendler not to “ascribe to the Agent directly”.

Thus, based on the evidence so far, the set of admissible adverbs in middles could as well be a subset of “rate adverbs” – a set of dyadic “rate adverbs” that specify something about the progress of an event with respect to a potential Agent. In the absence of evidence against such an assumption and since prototypical middle adverbs like *easily* and *with difficulty* fit this description, I will proceed by assuming that adverbs admissible in middles are dyadic adverbs that modify the underlying event with respect to a potential Agent as indicated in (59d). The conclusion is only tentative, since the set of middle adverbs awaits further research.

The choice of adverbs that are not licensed to occur with middles is as intriguing as the choice of adverbs that can occur in middles. We have already seen some of them. Agentive Adverbs like *deliberately* and *intentionally* are standardly assumed to be inadmissible with middles due to the stativity of middles. This does not exhaust the list of adverbs that cannot be licensed in middles. Let us take a look at the examples in (62). Notice that the reason why both (62b) and (62c) are unacceptable cannot be tied to the aspectual properties of middles. Namely, all three outputs in (62) are stative. The reason why (62b) and (62c) are out must reside somewhere else.

(62a) Othello loved Desdemona passionately.

(62b) *Tristram Shandy reads passionately.

¹²¹ Cf. also Chapter 5: 2.2 for the differences between middles and generics formed from unergative verbs.

(62c) *This dress buttons passionately.

Notice that the adverb *passionately* shares one crucial characteristic both with manner adverbs like *carefully* (63a) and the sentence adverb like *stupidly* (63b) in Vendler's (1984) classification.

(63a) He drove the car carefully.

(63b) Stupidly he drove the car.

According to Vendler (1984), though in a different way, both *carefully* (63a) and *stupidly* (63b) posit a trait in the Agent – *care* in the former case and *stupidity* in the latter case. The same could be said of *passionately*. The adverb in (63a) posits *passion* in the Experiencer. As already stated, in Vendler's system, *easily* is quite different as it does not ascribe to the Agent directly. Consequently, one could say that since *passionately* ascribes to the Agent directly, it is not allowed with middles. Just like *proudly*, *skillfully* and *safely*, *passionately*, then, could be treated as an adverb that “posits a trait in the Agent”.

Though *passionately*, *safely*, and *skillfully* can, then, be viewed as sharing a common trait that makes them inadmissible in middles, note that it is not quite obvious why an adverb like *passionately* would not be licensed in middles. Namely, middles have the implicit Agent role, so why cannot an adverb “ascribe to this Agent role”. Fellbaum (1986) argues that middles are incompatible with certain adverbs since the implicit argument gets to be interpreted as generic *one* or *people*, *in general*. Though I cannot offer an explanation for their inadmissibility at this point, I am not entirely sure that this is the correct explanation. Namely, just like middles, impersonals in SC like the one in (64) get the quasi-universal interpretation, and yet, they allow adverbs such as *passionately*. Perhaps, different partitioning of semantic material with middles and impersonals could be a way to account for this peculiarity of middles. I leave this issue for further research.

(64) U Italiji se fudbal igra strastveno.
 In Italy SE-CL football plays passionately.
 In Italy people play football passionately.

As already said, the proper definition of the set of middle adverbs is left for further research. It is clear that the middle adverb modifies the underlying event in question as proposed by Parsons (cf. also Condoravdi (1989), Steinbach (1998), and Zwart (1998)). Following the discussion here, I will proceed under the assumption that the admissible adverbs are dyadic – modifying the even with respect to an implicit Agent.

2.4 *By*-Phrases

Another cross-linguistic characteristic of middles is their inability to license *by*-phrases as illustrated in (65). Consequently, it is not surprising that *by*-phrases – or more precisely – the inability of middles to license such phrases has been used as a criterion for identifying middles (cf. Roberts (1985), Cinque (1988), Ackema and Schoorlemmer (2003), for instance).

(65a) *Silk dresses wash easily by Max.

(65b) *Svilene haljine se lako peru od strane Maksa.
Silk dresses se wash easily by Max.

Without attempting to solve the mystery of *by*-phrases, I would like to point to the facts that warrant caution in using *by*-phrases as a criterion for identifying middles. Namely, though *by*-phrases are as illegitimate in SC middles as they are in English middles, one cannot say for sure what they diagnose. Let us elaborate on this point. Firstly, there is evidence invalidating the claim that the inability of middles to license *by*-phrases is rooted in their stativity, as it is sometimes argued in the literature. Namely, in other languages one finds the same prohibition on *by*-phrases with eventive derivations as well. In SC and Polish, passive-*se* and impersonal-*se* do not allow for *by*-phrases either. Let us take a look at the examples in (66a) and (66b). Both of the examples are eventive. Yet, neither of them allows for a *by*-phrase. This means that there must be another reason, independent of the stative nature of the middle that governs the occurrence of *by*-phrase. SC is not exceptional in this respect. Notice, for instance, that Italian impersonals behave *on a par* with SC impersonals in disallowing the *by*-phrase (66c). The example in (66c) is from Cinque (1988).¹²²

(66a) Juče se u Italiji popilo mnogo vina *od strane svih.
yesterday se in Italy drank-up a lot of wine by everybody.
'Yesterday someone in Italy drank a lot of wine by everybody.'

¹²² I am being silent on the status of passive-*si* in Italian since there is no general agreement in the literature on Italian regarding the question of whether *by*-phrases are allowed with passive-*si*. Most of the researchers (cf. Cinque (1988)) refer to the work of Lepschy & Lepschy (1977) or Lepschy (1986). In Lepschy & Lepschy (1977), the core cases of passive-*si* do not allow for *by*-phrases. Namely, they explicitly say that "passive-*si* is normally used when the agent is not expressed (but in rare cases the agent may be present)" (Lepschy & Lepschy (1977): p. 213). The example in (i) –taken from Lepschy & Lepschy (1977) – illustrates an instance where a *by*-phrase is licensed to occur. Consequently, in Italian it seems that *by*-phrases are allowed with some of the passive-*si* outputs. In SC and Polish, passive-*se* never allows for *by*-phrases.

(i) Questo giornale si legge ogni mattina da moltissima gente.
'This paper is read every morning by lots of people.'

- (66b) Kuća se gradi/se izgradila *od strane Petra.
house se builds/built by Peter
'The house is being built/was built by Peter.'
- (66c) Ieri si é ballato *da tutti.
yesterday it was danced by everybody

Note further, that even the statement that middles cross-linguistically disallow *by*-phrases might not be quite right. Namely, in the literature on Greek, it has been argued that Greek middles license *by*-phrases, where the only requirement is that the *by*-phrase with middles must have "an arbitrary reading" (67).

- (67) Ta galika mathen-o-nte efkola (apo opjondhipote)
the French-NOM acquire-PA-3Sg easily by anyone

(Tsimpli (1989))

The whole issue is further complicated by the fact that in German and Dutch, for instance, impersonal-passive constructions allow *by*-phrases to occur freely as in the German example (68a) from Jaeggli (1986a), after Comrie (1977) and the Dutch example (68b) is from Jaeggli (1986a), after Kirsner (1976).

- (68a) Es wurde gestern von uns getanzt.
it was yesterday by us danced
- (68b) Er wordt door de jongens gefloten.
it was by the boys whistled

Finally, notice that even with respect to passive as a category, the status of the *by* phrase is not uniform. In some languages, they are - generally speaking - optional (e.g. English and SC copular passive) in others they are illicit (Latvian, Classical Arabic, Urdu, Amharic and Igbo (cf. Jaeggli (1986a), after Comrie (1977) and Siewierska (1984), whereas in some they are reported to be obligatory (e.g. Indonesian, the Dravidian language Kota, and the Austronesian language Palauan (cf. Jaeggli (1986a), and the references there).

Thus, whatever reason lies at the root of why - in the sample of languages here - middles disallow such phrases, the issue should be handled with caution. Even if one abstracts away from the Greek data as in (67), and focuses only on languages like English, SC, and Italian in which middles disallow such phrases, the prohibition on licensing of *by*-phrases seems to be as inexplicable as is the prohibition on licensing of purpose clauses; it is not that middles in these languages do not pass the test, but it is that one does not know what the test diagnosis is in the first place. What is clear, however, is that the issue cannot be rooted in the stativity of middles. Pending further research, I proceed here by striking out the licensing of *by*-phrases as a defining characteristic of middles.

3. Is Middle Formation Syntactic or Lexical?

So far, I have identified some crucial properties of middles that hold of the middle construction across languages. Middles are generic statements (typically with the modal flavor of capability). The external role of middles is not syntactically realized. It is semantically present and interpreted as ARB with +human flavor. Unlike their external role, their notional object is linked in the syntax. Consequently, we have identified sufficient characteristics to justify our assumptions that there is a semantic category of middle across languages. The question that immediately arises is whether a unified approach can cover the middle construction in languages that are under consideration in this study. To put it in different terms, the question here is whether Middle Formation is like Expletivization in that it is cross-linguistically bound to the lexicon or it is like Reflexivization - a parameterizable operation that in some languages it applies in the lexicon, whereas in others it applies in the syntax.

3.1 The Lexicon-Syntax Debate

With respect to middles, approaches can generally be divided into two groups: a) lexicon approaches to middles and b) syntactic approaches to middles. Let us first clarify the terminology used here. What I label here as a lexicon approach to middles is any approach that derives the middle construction presyntactically – in the lexicon. What I labeled here as a syntactic approach to middles is any approach that derives middles in the syntax. To explore the question of whether middles in the language sample of this study can be derived uniformly in either of these two modules, I will examine Fagan's (1992) approach as a representative of the former and Hoekstra and Roberts' (1993) approach as a representative of the latter type of approaches. The primary goal of this section is not to argue against these particular approaches, but to show that neither a syntactic approach nor a lexicon approach is adequate to cover uniformly the middle formation operation in all languages, even on a small sample of languages like the ones considered in this study. I will argue here that a "one size fits all" approach that attempts to derive all middles universally either in the lexicon or in the syntax cannot account for middles cross-linguistically. The solution I propose is a parameterizable approach to the middle construction, where the middle formation operation applies in some languages in the lexicon, whereas - in others - it applies in the syntax.

Let us start by examining the lexicon approach of Fagan (1992).¹²³ Fagan's approach is designed to derive the middle construction in English, French, and German. Fagan

¹²³ For the sake of correctness, it should be stressed that neither Fagan (1992) nor Hoekstra and Roberts (1993) claim that their particular approach covers all the languages under consideration here nor that it should be extended to cover middles cross-linguistically.

proposes that middles in these three languages are derived in the lexicon. It is often noted in the literature that a characteristic property of lexicon-bound operations is that there are certain lexical restrictions that they obey. Bearing in mind that Fagan's approach is a lexicon approach, it is not surprising that she proposes that there are certain constraints that hold of Middle Formation. Among the constraints on the middle formation operation that Fagan proposes are the three given in (69). The condition in (69a) is Fagan's (130) of Section 5.2, (69b) is her (131), and (69c) is her (134) of the same section.

(69a) Condition: V is not an achievement or state

(69b) Condition: V is agentive

(69c) Condition: V is not ditransitive

Before we pursue the issue any further, three notes of clarification are needed here. First, with respect to (69a), Fagan uses the notions "state" and "achievement" in the sense of Vendler (1967). Recall that according to Vendler's classification state terms are *love, hate, admire, possess, desire, have, like, dislike*, and the like. States last over a period of time. Achievements occur at a single moment. "*Recognizing, realizing, spotting and identifying something, losing or finding an object, reaching the summit, winning the race, crossing the border, starting, stopping, and resuming something, being born, and even dying fall* squarely into the class of achievements" (Vendler (1967): p. 107).¹²⁴

Secondly, the wording of (69b) may appear confusing. Namely, counter to the wording of (69b), my understanding is not that Fagan wants to argue that verbs like *open, break* and *close* do not give rise to acceptable middles. In the present framework, "agentive verbs" are verbs whose external role is consistent only with the Agent interpretation (cf. Chapter 1). For instance, verbs like *eat* (70a). As seen in (70a), neither Instruments nor Causes are consistent with the external role of Agentive verbs. This, again is what one would expect since their external role is a [+c+m] cluster - Agent. A great majority of verbs that are legitimate inputs to middles are not Agentive in this respect. For instance, verbs like *break* or *close* have a [+c] - Cause - and not a [+c+m] - Agent role - on their grid. This is clear from the fact that Causes, Instruments and Agents realize as external arguments of such verbs (70b).

(70a) Peter/*The spoon/*Hunger ate the soup.

(70b) Peter/The hammer/The wind broke the window.

¹²⁴ The issue of the class of achievements has been questioned in the literature. I am glossing over this issue here as it is not relevant for our discussion. I will return to the issue of verb classes in more detail in Chapter 4. For our purposes, testing empirically whether the set of telic verbs that Vendler (1967) identifies as achievements can serve as input to middles should suffice.

The third point to note is with respect to the wording of (69c). The way it is worded, the condition is clearly false for English. Namely, in English, ditransitive verbs like *give*, *sell*, *send*, and the like are legitimate inputs to the middle formation operation (71) (cf. also Chapter 2).¹²⁵

- (71) Big presents don't ship easily.
'It is not easy for one to ship big presents.'

However, it is clear from Fagan's work that her intent is not to claim that outputs like (71) are ungrammatical. On the contrary, (69c) is meant to exclude outputs like (72a), where the Recipient Goal argument is realized in the middle derivation. We can, thus, state Fagan's intended condition (69c) as (72b).

- (72a) *Big presents don't ship friends easily.
(72b) The Recipient Goal of the input ditransitive verb cannot realize in the middle derivation.

Having clarified what the conditions are all about, let us go back to examining them. Again, bearing in mind that on Fagan's account middles are derived in the lexicon, assuming restrictions like (69) does not seem to be so surprising. There is, however, one immediately startling thing to notice here: different conditions apply in the lexicon of French than in the lexicon of English and German. Namely, in Fagan (1992), conditions (69a) and (69c) hold in English and German, whereas condition in (69b) holds in French. This is surprising since other lexicon operations (e.g. Expletivization) apply to the same set of verbs cross-linguistically. Thus, purely on conceptual grounds the idea of "split restrictions" does not seem very appealing.

Let us, however, disregard this conceptual problem and see whether the account can extend to languages other than the three Fagan (1992) examines. As seen in (73), SC does not fit into either the English-lexicon type or the French-lexicon type of language. Namely, none of the conditions in (69) is valid for SC. Since the verb in (73a) is a state in Vendler's classification and the verbs in (73b)-(73c) are achievements according to Vendler's classification, one has to conclude that condition (69a) does not hold in SC. Notice further that these verbs are not Agentive which then violates (69b) as well. Finally, as seen in (73d), the Recipient Goal is freely realized in the middle derivation in SC, thus violating (69c).¹²⁶

¹²⁵ Though German is not in the sample of languages in this study, note that the same is true of German (i).

- (i) Teure Geschenke verschenken sich nicht leicht.
'Expensive presents don't give easily.'

¹²⁶ Since German is not the subject of this study, I am glossing over German data here. Note, however, that Steinbach (1998) gives empirical evidence for German that contradict the

- (73a) Okrutni ljudi se lako mrze.
Cruel people SE-CL easily hate.
'It is easy for one to hate cruel people.'
- (73b) Sitni predmeti se lako gube.
tiny objects SE-cl easily lose.
- (73c) Nesrećni ljudi se lako prepoznaju.
unhappy people SE-cl recognize easily
- (73d) Duge priče se ne pričaju lako deci.
long stories SE-cl not tell easily children-dative
- (73e) Skupi pokloni se ne daju lako poznanicima.
presents SE-cl not give easily acquaintances-dative

Consequently, if one were to claim that middles in these four languages are derived uniformly in the lexicon, one must accept not just that lexical restrictions vary from language to language, but also that in some of the languages, no lexical restrictions apply to start with. This state of affairs might be seen as even less satisfactory than the idea of "split lexicon restrictions" across languages.

To complicate the issue further, one should be aware that SC is not the only problem for the uniform lexicon derivation of middles. Namely, Fagan (1992) herself notes that French actually does not fully comply with the only requirement she puts upon it as it allows verbs like *reconnaître* "recognize" and *remarquer* "notice" to be input to perfectly acceptable middles. It is standardly assumed that *notice* and *recognize* are not agentive. For instance, their inability to license Agentive Adverbs clearly shows this (74).

- (74a) *He deliberately/intentionally recognized her.
- (74b) *He deliberately/intentionally noticed her.

Notice that French actually presents a much more serious problem than a few exceptions like *recognize* and *notice*, since French freely allows middles of *love*-type verbs (75). *Love*-type verbs, on the other hand, do not have either Agent or a Cause but some sort of Experiencer as their external argument. Consequently, neither the way it is originally worded, nor under the explication proposed does (69b) actually apply to French. Since this is the only lexical rule that on Fagan's (1992) account applies in French, then one must conclude that French middles actually do not abide by any lexical rules.

validity of (69a). Based on the data from German informants I have interviewed, German does not abide by any of the conditions in (69) either.

- (75a) Les ennemis cruels se détestent facilement
 cruel enemies SE-CL hate easily.
 ‘It is easy for one/people, in general to hate cruel enemies.’
- (75b) Les enfants mignons/choux s’aiment facilement
 sweet children SE-CL love easily
 ‘It is easy for one/people, in general to love sweet children.’

This, on the other hand, makes the idea that in English, German, and French middles are derived in the same fashion even more implausible. Namely, from the conceptually unappealing idea that the lexicon-middle formation is guided by different rules on a sample of three languages, one ends up in a situation where a lexicon process in some languages is completely unrestricted whereas it looks severely restricted in others.

Thus, with respect to conditions on the input verb, French seems to behave like SC. The parallelism between these two languages does not stop here. Notice further that in both French and SC, EMC-middles are available. Recall that ECMs are not lexicon constructs. If middles in French (and by extension in SC) are derived in the lexicon, it is far from trivial to explain how they can feed ECM (76). Notice, on the other hand, that such ECM-middles are not available in English (76c).

- (76a) Ces maisons peuvent se croire belles facilement seulement avec
 beaucoup de bonne volonté.
 These houses can SE-CL think beautiful easily only with lots of
 good will
- (76b) Takve ideje se lako smatraju glupim.
 Such ideas SE-CL easily consider stupid
- (76c) *Such ideas consider easily stupid.

Restricting the derivation of both the middle in English and in SC to the lexicon does not seem to give desirable results. Let us, henceforth, try to test whether a uniform syntactic analysis can account for both. To explore this issue, Hoekstra and Roberts’ (1993) account will be examined. Their approach is designed to cover Dutch and English middles. Hoekstra and Roberts’ account treats middles in Dutch and English as quite similar to the copular passive.¹²⁷ For instance, just like in copular passives, the notional object of middles undergoes NP-movement. Unlike other instances of NP-movement, however, it is argued by Hoekstra and Roberts (1993) that this particular instance is sensitive to certain thematic conditions – most

¹²⁷ For ease of presentation, I am disregarding the fact that they also argue that the implicit argument is realized in the syntax. For arguments against the syntactically realized implicit argument, the reader is referred to 2.3 of this Chapter.

notably - the Affectedness Constraint. I will return to the issue of the Affectedness Constraint in some detail in Chapter 4. Here, I will just sum up the core of the constraint in question. The constraint blocks the middle formation of verbs that have “unaffected objects”, where the notion “affected” can be roughly paraphrased as “the object that undergoes a change of state”. For instance, whereas the object of *see* is unaffected, the object of *paint* is affected. The first conceptual difficulty that one might have with such an NP-movement is that syntactic movement is restricted by thematic constraint. Recall (cf. Chapter 2) that the fact that the feature clusters do not have impact on Move was a welcome one. An element will move overtly or covertly regardless of a particular role that the participant in question is assigned.

Hoekstra and Roberts are fully aware that the thematic constraints they propose “pose a problem for an NP-movement account of MF because the AC appears to be a thematic constraint and movement operations are supposed to operate in a manner which is ‘blind’ to thematic properties” (Hoekstra and Roberts (1993): p 203). The way they propose to solve this conceptual problem, however, might seem troublesome. They propose a correlation between “affectedness” and “Case-assigning properties of verbs”. The core of the relation is captured in (77).

- (77) Non-affecting verbs assign their own lexically given Accusative Case to their object. This is a kind of inherent Accusative.

Before even attempting to check out this hypothesis, it should be noted that English seems to me to be one of the most difficult candidates to actually check any claims about structural versus inherent Case distinction (cf. the discussion in Chapter 2 as well). On the one hand, there is almost nothing morphologically discernable about the English case system. More importantly, recall that case suppression through passivization - a test that sorts out structural Accusative from Dative and obliques in a great number of languages - is not really applicable in English. Namely, Dative arguments in English passivize. Roberts (1983) himself argues that Dative in English is structural, not inherent.¹²⁸ This, on its own, makes English quite different from Dutch, German, SC, Italian, French, and Polish, for instance, where Dative does not allow for suppression. The lack of any morphological clues as well as the inability to straightforwardly apply a test like the Case-suppression through passivization clearly show that testing the hypothesis that something is inherent rather than structural in English is a challenging task. There is, however, a ‘partial’ piece of evidence that might be important in this respect. The verb *ail* in English is among the rare instances that have been argued to assign inherent Accusative in English (cf. Brody (1989)). Notice that *ail* does not passivize (78a). This makes *ail* quite different from *see* in English (78b), whose ability to passivize, in turn, makes it very similar to *paint* in English (78c).

- (78a) *Max is ailed by this.

¹²⁸ As a matter of fact, the claim in Roberts (1983) is much stronger as he argues that English lacks oblique case.

(78b) Peter is seen by Max

(78c) The house is painted by Max.

Provided *ail* indeed assigns inherent Accusative – oblique case - to *Max*, one would expect it to be resilient to the Case-suppression though passivization. Provided *see* assigns inherent Accusative, then by (77), one would expect it to exhibit the same behavior with respect to the Case-suppression. This, however, is not the case. Namely, *see* does not pattern with *ail* but with *paint* with respect to the passivization. The reason why the evidence is ‘partial’ lies in the fact that *ail* does not have the external argument. Since passivization is argued to be contingent on the presence of the external argument, data like *ail* come through only half-way. The grid of *ail* in the Theta System is given in (79). Since they are [-] clusters, both of its arguments merge internally. By the Full Interpretation of Thematic Roles (cf. Chapter 2), the [-c] role of *ail* is obligatorily expanded to yield [-c+m], consistent with the Experiencer-interpretation that the participant assigned this role has.

(79) *ail*: ([-c-m], [-c])

The validity of (77) can, however, be tested in Dutch. Just like English, Dutch does not have the morphological case system. Unlike in English, case suppression through passivization in Dutch is argued to be available only for structural Case. Therefore, let us test (77) with Dutch data.¹²⁹ Among the verbs that do not serve as inputs to middles in Dutch are *haten* “hate”, *weten* “know”, *zien* “see”, *vrezen* “fear”, and *begrijpen* “understand”. The objects of these verbs are unaffected by the standard AC (cf. Roberts (1985) and Jaeggli (1986a)). The important point to note now is that all of these verbs give rise to perfectly acceptable passive outputs (80). Bearing in mind that Dutch allows suppression only of structural Case, the conclusion to be drawn - based on (80) - is that this particular group of verbs with unaffected arguments assigns structural Accusative to their respective objects. In other words, the Dutch data straightforwardly falsify (77).

(80a) Max wordt gehaat door Peter.
Max is hated by Peter.

(80b) Het antwoord wordt geweten door Peter.
The answer is known by Peter.

(80c) Hij wordt gevreesd door Peter.
He is feared by Peter.

¹²⁹ The reader is warned against misconstruing the argument here. Namely, I do not intend to claim that all the verbs with unaffected objects assign Accusative case to their internal arguments. What I am arguing here is that those that do fail to assign structural Accusative do so not because their objects are unaffected but due to some other reasons. For instance, in Dutch *houden van* “love” does not assign Accusative case. *Haten* “hate”, however, does.

- (80d) Max werd gezien door Peter.
Max was seen by Peter.
- (80e) Het boek wordt niet begrepen door Peter.
The book is not understood by Peter.

Even if one disregards all the conceptual and empirical problems that the analysis proposed by Hoekstra and Roberts (1993) has with respect to the languages that they intend to cover, their thematically-restricted movement approach in syntax cannot be extended to all the languages under consideration here, either. Namely, although one could propose a movement analysis for middles in SC and French, the type of peculiar thematically restricted NP-movement that Hoekstra and Roberts propose does not seem to be a viable option.¹³⁰ Namely, if middles in SC and French are derived through movement, the movement in SC and French does not abide either by the AC or by the Recipient Goal restriction (cf. (73) and (75)). More precisely, it does not abide by any thematic restriction. This is, of course, what one would expect from syntactic movement. Consequently, if one were to assume a ‘one size fits all’ syntactic analysis of middles for Dutch, English, French, and SC, one would have to allow that certain languages have a special ‘thematic’ NP-movement whereas others have a regular one.

3.2 Middle Formation as a Parameterizable Operation

The same problem of variability across languages which we observed with respect to a uniform lexicon approach is encountered also with a uniform syntactic approach. On either approach, one has to assume that - though middles are cross-linguistically derived in the same module - the module itself varies with respect to the rules it abides by from language to language. Conceptually, this is a highly undesired result. Thus, it seems much more grounded to argue for an option of a parameterizable operation, by which, in certain languages, the middle formation operation applies in the lexicon whereas in others it applies in the syntax. Since the lexicon and syntax are different modules that abide by different rules, one could expect that outputs derived in the lexicon and outputs derived in the syntax do not behave in the same way. This is exactly what I will argue here. Namely, on the account here, middles in English will be argued to derive presyntactically, whereas middles in SC and French will be argued to be derived in the syntax.

In this section, I have taken a representative of a lexicon and a representative of a syntactic approach and I have tried to show – on a sample of languages – that they cannot all fit into either a lexicon or a syntactic approach to middles. What I have been testing here is not the fruitfulness of a lexicon or a syntactic approach with respect to a particular language, but rather the option that the middle formation operation is cross-linguistically a nonparameterizable operation. Even this brief

¹³⁰ For the sake of discussion here, I am ignoring the possibility of Case checking in situ.

presentation should clearly indicate that the middle formation operation - even across the limited sample of languages selected here - does not seem to be a 'one size fits all' lexicon or syntactic operation. On the one hand, it seems indicative enough that middles in languages that abide by certain restrictions mentioned in this section handle with great difficulty in the syntax. On the other hand, languages that give rise to ECM-middles and do not abide by thematic restrictions cannot be derived in the lexicon. The cross-linguistic differences between languages with respect to the middle formation operation can be accounted for if one assumes that the middle formation operation is a parameterizable operation. Lexicon and syntax are two distinct modules that abide by different rules and constraints. Consequently, one would expect the outputs created in the lexicon to exhibit different behavior from those created in the syntax. This is exactly the standpoint taken in this study. Namely, what I will advocate for here is that the middle formation operation is a parameterizable operation. In some languages, the parameter is set onto lexicon. In others the parameter is set onto syntax. In Chapter 4, I will present an account of the middle formation operation in the lexicon. For ease of reference, languages in which the middle formation operation applies in the lexicon are labeled 'lexicon languages'. English and Dutch (as well as Hebrew in Chapter 5) will be used as representatives of 'lexicon languages'. In Chapter 5, I will present an account of what will be labeled as 'syntactic languages' as the middle formation operation in those languages takes place in the syntax (LF). French, Italian, SC and Polish will be taken as representatives of 'syntactic languages'.

Last but not least, though it was not the primary goal of this section, I have also pointed out to some of the conceptual and empirical problems one faces with the particular approaches chosen in this section. Some of the problems that these two - as well as some other approaches in the literature - have will also be addressed in Chapter 4.

4. Concluding Comments

Let us first sum up what middles looks like. In descriptive terms, the core properties of middles can be summarized as follows:

- (i) Middles are characterizing - generic statements (i.e. ascribing properties to entities, involving quasi-universal reading, typically with a modal flavor of capability or potentiality).

- (ii) The external role of middles is not linked in the syntax, but it is always present in the semantics and interpreted as ARB with +human flavor.¹³¹

As argued in this Chapter, the properties in (i) and (ii) hold of middles across-languages. In Chapter 5, I will argue that the apparent exceptions to (i) in syntactic languages - which we observed in section 2.1.3 of this Chapter - are not middles, but instances of ARB-passives. Consequently, the answer to the question of whether there is a semantic category of middles cross-linguistically is affirmative. Given these properties, both the defining and the delimiting of the scope of our investigation into middles are facilitated. Namely, derivations that ascribe properties to entities but do not have an implicit external role (e.g. stative unaccusatives in 2.2.2) should not be treated as middles. Eventive outputs that - for all intents and purposes - look just like middles in syntactic terms (e.g. *se/si*-passives in Slavic and Romance languages) should also not be confused with middles. In defining what a middle is, I have examined properties that are often associated with middles. Given the fact that middles are generic statement, their stativity - a trait often taken to be the defining characteristic of middles in the literature - follows straightforwardly. Given the quantificational analysis of middles (cf. Condoravdi (1989) and Krifka et al. (1995)) that I adopt here, adverbial modification - often noted as a characteristic of middles - can be fully understood. I have also pointed out some difficulties that arise for attempts to derive the properties of middles from the *i*-/*s*-level distinction. From the discussion there, I hope it is clear that simply stating that middles are *i*-level predicates does not actually amount to much, as various researchers have shown that the contrast between *s*- and *i*-level predicates is not a uniform one, but that there are several, similar but independent, contrasts that seem to be lumped together. More importantly, the evidence presented in 2.1.2 of this Chapter warrants caution with respect to approaches to middles that build up on the premise that states do not have an *e*-role and then use this to explain why states like *love* cannot be felicitous input to middle formation operation in some languages.

In exploring middles, I have also examined the tests that are often used to identify middles. I have argued for caution with respect to the two tools often used in the literature on middles: a) semantic control and b) *by*-phrases. As seen in 2.2.3 and 2.4 of this Chapter, it is not that middles do not pass these tests with flying colors. The problem lies in the fact that one cannot be sure what the tests actually diagnose. The data show that other constructions with properties different from those ascribed to middles also pass these tests.

Last but not least, having identified what our ‘middle-Snark’ looks like, I have posed a question of what the best way of ‘catching’ it is. It should be clear from the presentation in Section 3 that even across a small sample of languages like the one under consideration here, the best way to tackle middles seems to be by means of a

¹³¹ As argued, the input to the middle formation operation is an *n*-place verb, $n > 1$. This means that when the input verb to the middle formation operation is a two-place verb, the derived middle-output is a one-place entry.

parameterizable operation. Namely, in certain languages, the middle formation operation is bound to the lexicon. In others, it takes place in the syntax (LF). Parallel with this, I have pointed to certain empirical and conceptual problems that arise even with highly elaborate approaches if one attempts to propose a unified analysis for middles cross-linguistically. The analyses of Condoravdi (1989) and Krifka et al. (1995), give us tools to formally approach our ‘middle-Snark’. Note, however, that not all the properties we have dealt with so far follow straightforwardly from the presence of Gen in the logical form of a middle. On the one hand, one needs to account for the interpretation of the implicit role as arbitrary, with +human flavor with middles in both lexicon and syntactic languages (e.g. English and SC). Among peculiarities of lexicon languages, one needs to account for the fact that the predicate of an English middle is quite peculiar as it is cannot be used to form particular sentences (cf. 2.1.3 of this Chapter). Consequently, there is a challenge to try to overcome the existing problems and account for all the crucial properties of middles.

Chapter 4

Middle Formation in Lexicon Languages

1. Introduction

Following the discussion in Chapter 3, Section 4, I have proposed that the best way to treat middles cross-linguistically is by means of a parameterizable operation. Consequently, for ease of presentation, the discussion of the middle construction in this study is split into two parts. In this Chapter, I will deal with the middle formation operation in lexicon languages, where a ‘lexicon language’ is a language where the middle formation operation applies presyntactically. English and Dutch are taken here as representatives of lexicon languages. In order to motivate the treatment of Dutch and English as instantiating the same type of language, the first task will be to show that Dutch obeys the same type of constraints English does.

2. Peculiarities of Dutch and English Middles

In Chapters 2 and 3, some of the peculiarities of English middles have already been mentioned. In what follows, I will examine in some detail what these restrictions are about and show that Dutch middles exhibit exactly the same properties as their English counterparts.

2.1 Morphological Marking

I mentioned already that middles in English exhibit no morphological marking. This is also the characteristic of their Dutch counterparts. Example (1b) is taken from Hulk & Cornips (2000).

(1a) This dress washes easily.

(1b) Dit hemd wast goed.
‘This shirt washes well.’

For English, the fact that middles are unmarked morphologically does not seem surprising. Notice that, in addition to English middles, English reflexives are also morphologically unmarked (2a). Thus, not just middles, but outputs of other lexical operations fail to exhibit any kind of morphological marking. The situation is different in Dutch. Though Dutch middles do not exhibit any morphological marking, Dutch reflexives do (2c).

- (2a) He washes.
- (2b) *wassen*: ([+c+m], [-c-m])
- (2c) Hij wast zich.
He washes
'He washes himself.'

Both the middle and the reflexive are derived from the base-verb *wassen* "wash" (2b). The base entry *wash* meets the criteria for ACC marking. Notice that with the reflexive output, the deficient pronoun *zich* needs to be inserted to take care of the residue of ACC case (cf. Reinhart and Siloni (2003)). Since both the middle and the reflexive are derived from the same input verb *wassen* "wash", one would like to understand why only reflexives - and not middles - are morphologically marked.

2.2 The Puzzle of Ditransitive Verbs

As we saw in Chapter 3, section 3.1, middles like (3a) are unacceptable.¹³² In Hoekstra and Roberts (1993) the constraint is given as (3b). In Fagan (1992), the constraint is given as (3c).

- (3a) *Children teach easily. (Hoekstra & Roberts (1993))
- (3b) MF cannot apply to Goals
- (3c) Condition: V is not ditransitive

Though the empirical evidence they capture is the same, the wording of both (3b) and (3c) might be misleading. Recall first, that ditransitive verbs make perfect input to middles (4). Examples (4d) and (4e) come from Roberts and Hoeksta (1993).¹³³

¹³² In addition to the references here, the reader is also referred to the work of Roberts (1985), Everaert (1990), Zwart (1998) and Kerstens (2002).

¹³³ The reader should know that with respect to examples like (4c), there seems to be variation in English. Namely, whereas all my informants were content with (4c), Hoekstra and Roberts (1993) claim that *verba dicendi* - *tell* being one of them – do not form felicitous middles.

¹³³ Again, I am stressing (1c) is misleading only in the way it is worded. Namely, Fagan (1992) does not argue that examples like (2) are ungrammatical.

- (4a) Big presents don't sell easily.
- (4b) Sensitive plants don't ship easily.
- (4c) Long stories don't tell easily.
- (4d) These ideas teach easily.
- (4e) These apartments rent easily.

As seen in the data in (4), it is not true that ditransitive verbs do not form felicitous middles. For that reason, (3c) might be misleading.¹³⁴ What about (3b)? Recall (cf. discussion in Chapter 2) that it is generally accepted in the literature that the abstract GOAL relation encompasses both the Recipient Goal and the Locative Goal. In Chapter 2, however, we have seen that whereas Recipient Goals are not acceptable with middles (5), Locative Goals are perfectly acceptable (6).

- (5a) *Big presents don't send friends easily.
- (5b) *Big presents don't ship friends easily.
- (6a) Big presents don't send easily to foreign countries.
- (6b) Sensitive plants don't ship easily to foreign countries.

Consequently, for ease of understanding, the restriction observed in (3) and (5) seems more accurately stated as in (7).

- (7) Recipient Goal cannot realize on the middle entry

The need to redefine (3b) and (3c) is not cosmetic in nature. What the redefinition captures is the contrast between (5) and (6). This contrast, on the other hand, reveals that one is dealing with the restriction placed on the verbal entry itself. Namely, recall that in Chapter 2, we have established that only Recipient Goals are co-arguments of the verbs like *send*, whereas Locative Goals are adjuncts.

Since the claim here is that Dutch middles pattern with English middles and given the working definition of the constraint in (7), let us check how the Dutch data fit into it. As seen in (8), Dutch behaves in this respect just like English. Namely, whereas ditransitive verbs give rise to perfectly acceptable middles (8a) – (8c), the Recipient Goal cannot be realized in the middle derivation (8d) – (8h). The examples in (8b), (8e), and (9g) are from Zwart (1998) and (8h) is from Kerstens (2002).

¹³⁴ Again, I am stressing (1c) is misleading only in the way it is worded. Namely, Fagan (1992) does not argue that examples like (2) are ungrammatical.

- (8a) Lange verhalen vertellen niet gemakkelijk.
'Long stories don't tell easily.'
- (8b) Koude gerechten serveren gemakkelijk.
'Cold dishes serve easily.'
- (8c) Deze ideeën onderwijzen gemakkelijk.
'These ideas teach easily.'
- (8d) *Lange verhalen vertellen niet gemakkelijk aan
kinderen_[RECIPIENT GOAL].
long stories tell not easily to children
- (8e) *Koude gerechten serveren gasten_[RECIPIENT GOAL] gemakkelijk
Cold dishes serve customers easily
- (8f) *Deze ideeën onderwijzen gemakkelijk aan kinderen<sub>[RECIPIENT
GOAL]</sub>.
these ideas teach easily to children
- (8g) *Marie_[RECIPIENT-GOAL] geeft gemakkelijk Cadeautjes.
Mary gives easily presents
- (8h) Het boek geeft (*haar)_[RECIPIENT GOAL] prettig
the book gives (*her) nicely

Let us explore the issue further. To facilitate the understanding of the problem here, I will first compare passive and middles with respects to the input and output entries. Both middles and passives are the outputs of saturation operations i.e. both middles and passives retain the number of semantic arguments of the base entry. It has long been noticed that the theta-grid of the passive remains completely unchanged with respect to the theta-grid of the base entry (cf. Marantz (1984), Roberts (1985)). Examples (9) – (10) are from Marantz (1984):

- (9a) Hortense was pushed by Elmer (Agent)
- (9b) Elmer was seen by everyone who entered (Experiencer)
- (9c) The intersection was approached by five cars at once (Theme)
- (9d) The porcupine crate was received by Elmer's firm (Goal)

Their active counterparts are the following:

- (10a) Elmer (Agent) pushed Hortense

- (10b) Everyone who entered (Experiencer) saw Elmer
- (10c) Five cars (Theme) approached the intersection
- (10d) Elmer's firm (Goal) received the porcupine crate

The most important point to draw from the data in (9) and (10) is that with the application of the passive operation, the content of saturated theta roles apparently stays intact. In simple terms, the saturated external role in (10a) retains all the properties (i.e. properties of being an Agent) of the syntactically realized role in (10a). The fact that the saturated external role and its syntactically realized counterpart are qualitatively identical (i.e. the roles have the same content) can be tested through the compatibility of the implicit argument with thematic roles its active counterpart is compatible with. Let us now take a look at the examples in (11). As seen in (11a) and (11b), the verb *tell* is a three-place entry with the roles of Agent, Theme, and Recipient on its grid. Passive-'tell' retains all the properties of its active counterpart. In both (11b) and (11d) the Agent-role is semantically realized. The passive-Agent – just like its active counterpart - is compatible with the role of Goal.

- (11a) Peter _[Agent] told a long story _[Theme]
- (11b) Peter _[Agent] told a long story _[Theme] to children_[Recipient Goal]
- (11c) A long story _[Theme] was told (Agent-implicit)
- (11d) A long story _[Theme] was told to children _[Recipient Goal] (Agent-implicit)

As already said, in both Dutch and English, verbs like *tell* form acceptable middles. Just like passive, middle-*tell* retains the external role of the base-verb. The example (12b) is from Dutch.

- (12a) Long stories don't tell easily.
'It is not easy for one to tell long stories.'
- (12b) Lange verhalen_[theme] vertellen niet gemakkelijk. (Agent-implicit)
'It is not easy (for one/people, in general) to tell long stories.'

However, the middle-*tell* does not behave quite like the passive-*tell*. The example in (12d) comes from Dutch.

- (12c) *Long stories_[Theme] don't tell easily to children_[Goal] (Agent-implicit)

- (12d) *Lange verhalen _[Theme] vertellen niet gemakkelijk aan kinderen_[Goal] (Agent-Implicit)
 ‘It is not easy (for one/people, in general to tell long stories to children.’

The presence of the Goal/Recipient in (12c) and (12d) makes the sentences ungrammatical. The important point to note now is that there is nothing semantically or lexically odd about having the Recipient-role relation here (i.e. it is quite conceivable that *long stories* have the property of, roughly speaking, ‘not being tellable to children’, due to the fact that children are notoriously impatient). Thus, the unacceptability of the Recipient Goal must be rooted somewhere else. The claim here is that the unacceptability of the Recipient Goal stems from some clash in features of the clusters of the middle-entry *tell*. I will return to this in detail shortly. At this point, I will only stipulate that the clash in question is between the features of the saturated role in middles and the formal features of the Recipient role. Since no restrictions on co-realization of Agent and Recipient Goal hold for the base-entry *tell*, I will further stipulate that the clash is due to the changes of the content of the feature cluster of the Agent-role of the middle-*tell*. Namely, my assumption is that with the application of the middle operation, the content of the theta-cluster of the external role is changed. The role of the Recipient is still present on the grid of the middle-verb, but it no longer can be realized. It is important to stress that “being read by the computational system” is presupposed by the notion of “realization”. Consequently, the thematic grid of the middle-verb differs qualitatively from the thematic grid of the input-verb.

I will return to how this works shortly. For the time being, let us just redefine the working definition in (7) to cover the findings of this section (13). The ban on the realization of Recipient Goals is a formal restriction. There is no “semantic incoherence” with examples like (12c) and (12d).

- (13) The Ban on the Realization of Recipient Goals
 Recipient Goals cannot realize on the middle entry, where
 ‘realized’ should be understood as ‘read by the CS’.

As will be explained shortly, in systems that treat thematic roles as primitives, the nature of this constraint can hardly be explored, let alone explained. To illustrate this, I have intentionally used labels such as “Agent”, “Theme” and “Goal” instead of the adequate theta-clusters in the examples in (9)-(12). In the Theta System, however, the issue can be explored and explained, since the primitives of the system are not thematic roles, but the features +/-c and +/-m. We will see shortly how this feature-decomposition approach can account for this puzzling characteristic of middles in Dutch and English.

2.3 A Lexical Restriction on the Middle Formation Operation

Any investigation of Dutch/English middles would be incomplete without discussing the final intriguing property pertaining to middles in Dutch and English. It has long been noted in the literature (cf. Roberts (1985), Baker et al. (1989), Ackema & Schoorlemmer (1994)) that Middle Formation (MF), unlike passivization, applies to a restricted set of verbs in languages such as English and Dutch. For instance, stative verbs cannot undergo MF.

- (14) *Fierce enemies hate easily.

Considering the fact that passive in Dutch/English – which also involves saturation of the external argument - is not restricted in this manner, it is not surprising that at the core of many of approaches to MF, the focus has been on explaining this lexical restriction. At the core of these approaches, in turn, has been the notion of ‘affectedness’.

2.4 The Affectedness Constraint

The term ‘affectedness’ should roughly be understood as either change of location (i.e. motion) or change of state.¹³⁵ “The argument that is specified as ‘caused to change’ in the main event of a verb’s semantic representation is linked to the grammatical object” (Gropen, et al. (1992), p. 159). In many works on middles, Jaeggli’s (1986a) account of affectedness plays a crucial role.

- (15) Affectedness Constraint (Jaeggli (1986a))¹³⁶
If a complement of x is unaffected, it is impossible to eliminate the external theta role.

On Jaeggli’s (1986a) account, external roles of the predicates that have unaffected complements must always be syntactically realized. Jaeggli states that a thematic relation holding between an affected complement and its predicate is always ‘well defined’, by virtue of being independent of the thematic relation holding between the predicate and its external argument. On his account, such a ‘well-defined’ thematic relation is absent when unaffected objects are involved. With unaffected objects, their interpretation is thematically dependent on the interpretation of the subject. The object in (16a) is affected, whereas the object in (16b) is unaffected.

¹³⁵Jackendoff (1987), (1990) notes several other semantic fields in which a theme can be caused to change.

¹³⁶ Cf. also Anderson (1979).

(16a) John hit Bill.

(16b) The senators acknowledged great irregularities.

(Jaeggli (1986a))

Both *love* and *hate* in English and Dutch are unaffected verbs. If MF is taken to involve the elimination of the external role, the ungrammaticality of the examples in (17) seems to follow from (15).

(17a) *Good children love easily.

(17b) *Zulke mensen haten gemakkelijk
Such people hate easily

Since many of the approaches to middles in English and Dutch are inseparably tied to the Affectedness Constraint, I will examine this issue in more details in 3.1, where some of the approaches to middles in Dutch and English are tackled.

Unlike the characteristics of middles examined so far, the property of middles in Dutch and English that will be examined in 2.5 is a matter of dispute and controversy in the literature. The property pertains to the syntax of Dutch and English middles, to the question of whether middles in Dutch and English are derived through movement or not.

2.5 Movement versus Non-movement Analysis of Dutch and English Middles

Though there is a general agreement that the surface subject of middles is their notional object, there is, however, a lot of dispute in the literature with regards to whether this notional object is base-generated as a complement of the verb, and thus moves to the subject position, or whether it is base-generated as the subject. Keyser and Roeper (1984) and Hoekstra and Roberts (1993) are the proponents of the movement analysis, whereas Fagan (1992) and Ackema and Schoorlemmer (1995) are the proponents of the non-movement analysis. In what follows, I will explore this issue in a bit more detail.

2.5.1 *The syntax of Dutch and English Middles*

Ackema and Schoorlemmer (1995) use the tests standardly assumed in the literature on Dutch to diagnose unaccusative entries, and show that middles pattern with unergatives and not with unaccusatives in Dutch. The diagnostics as well as the examples in (18) – (20) are taken from Ackema & Schoorlemmer (1995).

2.5.1.1 *Auxiliary Selection*

Just like unergatives (18a), middles in Dutch take *hebben* ‘have’ in the perfect (18b). Unaccusatives, on the other hand, take *zijn* ‘be’ in the perfect tense (18c).

- (18a) Ze *hebben*/**zijn* gelopen/gefietst/gezwommen/gedineerd
they have walked/cycled/swum/dined (unergative)
- (18b) Dit vlees *heeft*/**is* altijd gemakkelijk gesneden.
this meat has/is always easily cut
‘This meat has always been easy to cut.’ (middle)
- (18c) Die stenen *zijn* vanzelf gebroken.
those stones are spontaneously broken
‘Those stones broke spontaneously.’ (unaccusative)

2.5.1.2 *Adjectival Passive Formation*

Unlike unaccusatives (19c), middles never allow adjectival passive formation (19b). Again, in this respect, they pattern with unergative intransitives, which also disallow adjectival passive formation (19a).

- (19a) *De kinderen lijken gewerkt.
the children look worked (unergative)
- (19b) *Dit vlees blijft gemakkelijk gesneden.
this meat remains easily cut (middle)
- (19c) De deur blijft gesloten.
the door remains closed (unaccusative)

2.5.1.3 *Prenominal Past participles*

An unaccusative can appear prenominally both as present and past participle (20a). Unergative intransitives can appear prenominally only as a present participle (20b). Just like unergative intransitives, middles can only appear as a present participle (20b).

- (20a) de dinerende taalkundigen/*de gedineerde taalkundigen
the dining linguistis/*the dined linguistis (unergative)
- (20b) het makkelijk snijdende/*gesneden vlees
the easily cutting/cut meat (middle)

- (20c) de stervende zwaan/de gestorven zwaan (unaccusative)
 the dying swan/the died swan

Thus, according to Ackema & Schoorlemmer (1995), middles in Dutch systematically pattern with unergative intransitives, not with unaccusatives. This, in turn, means that the notional object of middles is base generated as an external and not as an internal argument.

There are two issues with unaccusativity tests in general: a) not all verbs that are classed together as unaccusatives pass the unaccusative tests uniformly and b) alternative accounts for each and every unaccusative test that do not tap into syntactic properties of unergatives and unaccusatives have been proposed in the literature. Let us illustrate both of these points. Recall that in addition to passivization, auxiliary selection is, by far, the most commonly used test to diagnose unaccusativity. On the one hand, recall (cf. Chapter 2) that with respect to auxiliary selection many researchers have pointed to the exceptions to the correlation between auxiliary selection and unaccusativity, even in languages like Dutch (cf. Everaert (1986)) or Italian (cf. Belletti & Rizzi (1988)) for which the auxiliary selection has been established as one of the key diagnostics for the phenomenon. On the other hand, alternative accounts to auxiliary selection relate it to a) aspectual or b) Case issues. Reinhart and Siloni (2003), for instance, argue that - with respect to reflexives - auxiliary selection is tied to the issues of Case (cf. also Ackema (1995)), and not directly to syntactic unergativity /unaccusativity of a verb. I will return to this issue in 4.5. In the work of van Valin (1990), Hoekstra and Mulder (1990), Zaenen (1993), and Den Dikken (1994), on the other hand, auxiliary selection is aspectually determined – it basically boils down to telicity. Ackema (1995) and Ackema & Schoorlemmer (1995) argue against the aspectual accounts by pointing out that transitive verbs in Dutch - regardless of whether they are telic or atelic - take uniformly *hebben*, not *zijn*.¹³⁷ Even those accounts that escape such criticism like Den Dikken's (1994), by which it is only the *zijn*-selection that is restricted on the aspectual grounds seem to be faced with the problem of 'degree achievement verbs' (Dowty (1979) or 'Gradual Completion Verbs' (Bertinetto and Squartini (1992) like *widen* and *rise*, whose properties make them aspectually a "hybrid class" (since they respond positively to tests for both telic and atelic classes), but which, nonetheless take the auxiliary *zijn*. Ackema and Schoorlemmer (1995) themselves state that there is a possibility to derive alternative accounts for each test they use. However, they stress that the combined results - the fact that middles in Dutch fail each and every test for unaccusatives – point to the fact that they are, indeed, syntactically unergative. I think that this is a valid conclusion to draw. Namely, a) though tests presented for the unergativity of Dutch middles do not constitute exclusive and unequivocal evidence for it, they are, nonetheless, consistent with unergative

¹³⁷ The reader is also referred to Everaert (1994) who conclusively shows that telicity cannot account for auxiliary selection with pairs consisting of idiomatic and non-idiomatic near-synonyms, which exhibit the same aspectual properties and still opt for different auxiliaries.

analysis of Dutch middles, and b) as they point out, middles in Dutch test as unergatives to a whole barrage of tests.

In a similar vein, the literature on English is burdened with the controversy with respect to the unergativity or unaccusativity of middles. Keyser and Roeper (1984) derive middles in essentially the same way as passives – through NP-movement. There are four tests they use to corroborate their analysis of middles. The results of all four tests are contested by Fagan (1992), who argues that the tests in question do not show that middles are derived through movement. On her analysis, most of the characteristics of middles in English that Keyser and Roeper (1984) cite as evidence for a movement analysis follow from the noneventive nature of middles. Roberts and Hoekstra's account (1993) is – in its essence - very similar to that of Keyser and Roeper (1984). On their account, middles in Dutch and English are derived syntactically through movement.¹³⁸

The main problem for the syntactic derivation of middles through movement in English is that there are no cases of ECM-middles in English (21).¹³⁹

(21) *John considers a fool easily. (Hoekstra & Roberts (1993))

On Hoekstra and Roberts' account, the ungrammaticality of (21) is rooted in the Affectedness Constraint (cf. sections 2.4 and 3.1 of this Chapter). As we will see shortly, the problem with the Affectedness Constraint is that there are numerous exceptions to it. For instance, verbs like *read* and *photograph* have unaffected arguments and yet form perfectly acceptable middles (22).

(22a) The Bible reads easily.

(22b) She photographs well. (Fagan (1992))

Consequently, accounting for (21) by means of the constraint that does not cover (22) is problematic. *Consider*-type constructions in (21) are, by far, the most uncontroversial cases of ECM.¹⁴⁰ *John* in (23a) is not the argument of the matrix verb. That *John* in (21) is, indeed, base-generated as the external argument of *stupid*

¹³⁸ The reader is referred to Ackema & Schoorlemmer (2003) for critical approach to Hoekstra & Roberts (1993).

¹³⁹ The ECM-middles like (i) are ungrammatical in Dutch as well. However, unlike in English, one should, however, be careful with the use of ECM as a test in Dutch since unlike English, Dutch ECM verbs do not allow for passivization either (cf. Bennis and Hoekstra (1989) and Ackema and Schoorlemmer (2003)).

(i) *John vindt gemakkelijk stom
John considers stupid easily

¹⁴⁰ However, even the analysis of this construction is a matter of dispute in the literature (cf. Neeleman and Weerman (1992) and (1993), for instance).

(23a) and has no thematic link in the lexicon with the matrix predicate *consider* is quite obvious as *consider* and *John* do not establish a predicate-argument relation. Namely, something like (23a) does not entail (23b). It is the lack of this type of constructions among the attested middles in English that makes the syntactic derivation of middles through movement highly problematic.¹⁴¹

(23a) I consider [_{sc} John stupid]

(23b) I consider John

The second argument Hoekstra and Roberts use to corroborate their syntactic analysis of middles through movement is the availability of “resultative” middles (24).

(24) This metal hammers flat easily. (Hoekstra & Roberts (1993))

Their argument is that the surface subject is not thematically related to the middle verb, from which it logically follows that the middle formation is not a lexical but a syntactic process since - as in the case of ECMs above - lexicon operations cannot operate on theta roles of two distinct predicates. Arguing that *this metal* is not thematically related to *hammer* seems problematic since - unlike in (23) - the entailment relation holds in (25). Namely, from (25a) one can infer (25b). Since their argument crucially depends on treating *this metal* as not thematically related to the verb *hammer*, the syntactic analysis of middles in English becomes highly problematic.¹⁴²

(25a) I hammered the metal flat.

(25b) I hammered the metal.

The arguments for the syntactic derivation of middles in English do not seem to be convincing. Since Hoekstra and Roberts tie their movement analysis (i.e. the unaccusativity of middles) to the analysis of resultatives as ECMs, one could conclude that there are no convincing arguments to embrace the unaccusative nature of middles in lexicon languages. The evidence provided by Ackema and Schoorlemmer – though not definitive evidence for unergative behavior – is fully

¹⁴¹ The reader is referred to Aarts (1992) for an elaborate analysis of small-clause types in English.

¹⁴² Though I do not share the view of Hoekstra and Roberts that ECM constructions and resultatives should be treated *on a par* (cf. also Ackema and Schoorlemmer (2003) and the references there), what might be worrying for any lexical analysis of middles like (24) is that *this metal* is also argued by some researchers to be the argument of the secondary predicate. Since the status of resultative constructions is not settled in the literature and since ECM-middles are completely ungrammatical in English, I leave this issue for further research.

consistent with the unergativity of middles. Consequently, I will proceed under the assumption that middles in lexicon languages are syntactically unergative.

Note however, that though it is possible to account for the unergativity of middles in languages that form middles presyntactically in the Theta System, the tools available in this system do not force one to their unergative derivation. I will return to this point shortly.

To summarize, in this section, I have overviewed the properties of English and Dutch middles. One of them – the status of the surface subject – is still under debate. As I argue in 3.5 of this Chapter, the unaccusative derivation of middles in lexicon languages is, in principle, possible within the Theta System – there is nothing in the system that enforces the unergative derivation of middles purely on the grounds of them being formed presyntactically. However, since the list of diagnostics is fully consistent with the unergative behavior of middles, I proceed under the assumption that middles in lexicon languages are unergative. The other three properties seem to be uncontroversial. Firstly, there is no morphological marking in Dutch and English middles. Secondly, the Recipient Goal of the input verb cannot realize on the middle entry. Thirdly, not all verbs are felicitous input to middles. I have labeled these characteristics as peculiarities of Dutch and English middles, since in languages like SC; none of the characteristics of Dutch and English middles hold, as we see in (26).

- (26a) Dobra deca se lako vole.
good children se easily love
'It is easy for one to love good children.'
- (26b) Deca se lako uče pravilima.
children se easily teach rules
'It is easy for one to teach the children rules.'
- (26c) Nerazradjene ideje se lako smatraju glupim.
ideas that are not worked out se easily consider stupid
'It is easy for one to consider ideas that are not worked out stupid.'

Firstly, middles in SC are obligatorily marked by the presence of the clitic *se*. Secondly, the argument of *love* is unaffected, yet *love* forms a perfectly acceptable middle in SC (26a). The Recipient Goal argument is realizable on the middle entry (26b). ECM-middles are perfectly acceptable in SC (26c). Further, in Chapter 5, I will show that SC is not isolated in this respect: French, Italian and Polish, for instance, behave just like SC in this respect. Thus, even at this stage, the important point to note is that the differences between English and SC are not random; they indeed reveal a deeper pattern of linguistic parameterization across languages.

3. Accounts of Middles

With respect to the first property – the absence of morphological marking - I am not aware of any account in the literature of why Dutch middles would behave differently from Dutch reflexives (cf. (1) and (2)).¹⁴³ However, there are a lot of proposals in the literature regarding the restriction on the set of verbs that are visible to middle formation operation and the Recipient Goal restriction. The aim here is to overview some of the approaches in the literature with respect to the kind of account they provide for the two restrictions in question. As already said, since the Affectedness Constraint has become the ‘trademark’ of middles in Dutch and English, it should not come as a surprise that various approaches either incorporate the Affectedness Constraint as the backbone of the analysis of middles, or develop an analysis as a critical reaction to such ‘affectedness-approaches’ with the radical reformulation of the constraint itself.

3.1 The Affectedness Constraint Approaches: Roberts (1985) & Hoekstra and Roberts (1993)

3.1.1 Affectedness Account for a Lexical Restriction on Middle Formation

On any AC-account, the elimination of the external argument is allowed only with verbs that have affected objects. By the Affectedness Constraint – repeated here as (27) - such a process is disallowed for verbs that have unaffected objects.

- (27) Affectedness Constraint (Jaeggli (1986a))
If a complement of x is unaffected, it is impossible to eliminate the external theta role.

On Roberts’ (1985) account, MF in English involves the deletion of the external argument. Applied to middles, the AC-analysis goes in the following manner. Roberts (1985) states that only “affected objects can be promoted under MF”. The complements of verbs in (28) are unaffected. Thus, their external argument cannot be eliminated. Consequently, the middle derivations in (28) are ungrammatical. The Dutch examples in (28a) - (28d) are drawn from Ackema & Schoorlemmer (1994), the English example in (28e) is taken from Roberts (1985) and the English example in (28f) is taken from Fellbaum and Zribi-Hertz (1989).

¹⁴³ It is interesting to point out that Ackema and Schoorlemmer note that they “expect that in a language where a middle construction is not morphologically marked, it is derived presyntactically” (Ackema and Schoorlemmer (1994): fn. 12). Since both reflexives (cf. Reinhart and Siloni (2003)) and middles are formed presyntactically in Dutch, this does not solve the mystery of (1) and (2).

- (28a) *Dit antwoord weet gemakkelijk.
this answer knows easily
- (28b) *Verre voorwerpen zien niet gemakkelijk.
distant objects see not easily
- (28c) *Grote honden vrezen nogal gauw.
big dogs fear rather quickly
- (28d) *Dit artikel begrijpt moeilijk.
this article understands with difficulty
- (28e) *The Ramones hear easily down the street.
- (28f) *The Eiffel Tower sees easily from my window.

There are conceptual and empirical problems with the Affectedness Constraint. In both Dutch and English, there are numerous examples that defy it. None of the verbs in (29) – (30) have affected arguments according to the standard conception of the Affectedness Constraint. Consequently - contra the facts – none of them should give rise to acceptable middle derivations. If one wants to claim that the AC is a valid generalization, one would need to explain how the internal argument of *read*, for instance, is affected. None of the approaches that treat the AC as a backbone in accounting for middles (cf. Roberts (1985) and Hoekstra and Roberts (1993)), offer such an explanation. The Dutch examples in (29) are drawn from Ackema & Schoorlemmer (1994), the English examples (30a) and (30b) are from Keyser and Roeper (1984), the example (30c) is from Stroik (1992) and the example (30d) is from Ackema and Schoorlemmer (1994).

- (29a) De marathon van Rotterdam loopt gemakkelijker dan die van Londen.
the marathon of Rotterdam runs more-easily than that of London.
- (29b) De Matterhorn beklimt gemakkelijker dan de Mt. Everest.
the Matterhorn climbs more-easily than the Mt. Everest
- (29c) Lange vrachwagens passeren niet gemakkelijk.
long trucks pass not easily
- (29d) ?Wilde dieren benaderen niet gemakkelijk.
wild animals approach not easily.
- (30a) Messages transmit rapidly by satellite.
- (30b) Greek translates easily.

(30c) This book reads poorly.

(30d) It will not analyze.

Finally, the notion of affectedness is also conceptually inadequate. Namely, in order for the information from the system of concepts to be legible to the computational system, it has to be formally coded. It seems hard to imagine how the computational system should go about ‘affectedness’ if the constraint in question should be understood “in some intuitive sense” (Hoekstra and Roberts (1993): p. 201)).

3.1.2 *Affectedness account of Ditransitive Verbs*

On Hoekstra and Roberts’ (1993) account the AC is at the core of both the ungrammaticality of examples like (31a) and the impossibility of “affected” verbs like *see* (31b) to be a felicitous input to the middle formation operation. The examples in (31a) and (31b) are taken from Hoekstra and Roberts (1993).

(31a) *These students rent easily.

(31b) *These children teach easily.

(31c) *De berg ziet gemakkelijk.
The mountain sees easily

There are a couple of points to notice here. Firstly, on the standard account (cf. Jaeggli (1986a)), it seems that the AC is about a set of verbs, i.e. certain verb classes with unaffected internal arguments. This also seems to be true for Hoekstra and Roberts’ (1993) account since they explicitly state that - due to the Affectedness Constraint - perception verbs and non-stative psych-verbs with experiencer subjects cannot form felicitous middles. If the Affectedness Constraint is about verb classes, then it is not clear to me how it should extend to cover the data in (31a) and (31b) to start with. In both, the verb contains an affected argument, hence it is the type of verb that allows the deletion of the external role and the availability of the verb to undergo MF. This is, in fact corroborated by the acceptability of middles in (32).

(32a) These apartments rent easily.

(32b) These ideas teach easily.

The only way, then, the Affectedness Constraint could account for the contrast between (31) and (32) would be if one were to claim the verb *teach* and the verb *rent* in (31) belong to different classes than the verb *teach* and the verb *rent* in (32). It should be clear that such a view is impossible to maintain. Indeed, Hoekstra and Roberts (1993) do not endorse it. They simply state that (31a) and (31b) are excluded by the Affectedness Constraint. Based on the discussion in 2.2, it should

be clear that the restriction on the set of verbs visible to the middle formation operation (e.g. the inability of *see*-type verbs to undergo the middle formation operation) and the Recipient Goal restriction cannot be accounted for uniformly. Even if one were simply to accept Hoekstra and Roberts' (1993) conclusion, it does not alleviate the problem since the Affectedness Constraint as such is not a satisfactory generalization either in empirical or in conceptual terms.

3.2 Reformulating the Affectedness Constraint: Ackema & Schoorlemmer (1994)

3.2.1 Ackema & Schoorlemmer's Account of the Lexical Restriction on Middle Formation

Ackema & Schoorlemmer (1994) account for MF by reformulating the 'standard' Affectedness Constraint. They define MF as follows:

(33) MF: Actor=ARB

"The 'suppression' of the external argument in a middle is a case of not projecting an ARB argument from LCS to DS. The Actor in a middle is present at the semantic level (LCS), but not at the syntactic level. This accounts for the fact that this argument is semantically implicit in middles, but not syntactically active" (Ackema & Schoorlemmer (1994): p. 69). According to Ackema and Schoorlemmer, in order to have a nonprojecting arbitrary argument - ARB - a predicate needs to have an action tier, in the sense of Jackendoff.¹⁴⁴ The action tier encodes the affectedness relations between the arguments of a predicate. Stative verbs have no action tier. Consequently, they cannot have a nonprojecting arbitrary argument. Ackema & Schoorlemmer state that (34a) and (34b) are ungrammatical on the reading that *she knows some arbitrary thing*. The examples and judgments in (34) are from Ackema and Schoorlemmer (1994).

(34a) ?She knows.

(34b) *Ze weet.

Since MF requires the presence of ARB, based on (34) they conclude that stative like *love* and *hate* cannot form middles.¹⁴⁵

¹⁴⁴ See Jackendoff (1990) and Grimshaw (1990) for detailed elaboration.

¹⁴⁵ As noted by Ackema and Schoorlemmer (1994), the argument is somewhat tainted since (34a) and (34b) do not seem to have the same status. Indeed, in the literature, examples like (34a) are given as fully acceptable (cf. Rizzi (1986)) or "mildly" unacceptable as indicated in (34a) by Ackema and Schoorlemmer.

By shifting the focus from the internal to the external role, Ackema and Schoorlemmer successfully capture other exception to the standard AC. In a nutshell, what follows from their theory is that whenever there is an Actor, MF is possible. For instance, examples (35) should – rightly so – come out as grammatical on their account. In (35a), “the subject clearly is an Actor (*what Arnold did was run the Rotterdam marathon*’), while the object just as clearly is not a Patient (**what happened to the Rotterdam marathon was that Arnold ran it*)” (Ackema & Schoorlemmer (1994): 75).

- (35a) Arnold loopt de marathon van Rotterdam.
Arnold runs the marathon of Rotterdam.
- (35b) De marathon van Rotterdam loopt gemakkelijker dan die van Londen.
The marathon of Rotterdam runs more-easily than that of London.

3.2.2 Ackema and Schoorlemmer’s Account of Ditransitive Predicates

Recall that the Recipient Goal restriction holds both for the DP-DP (36b) and the DP-PP alternates (36a). The examples in (36) are from Roberts (1985).

- (36a) *Presents give to orphans easily. (DP-PP alternate)
- (36b) *Cakes bake Mary easily. (DP-DP alternate)

With respect to the Recipient Goal restriction, Ackema and Schoorlemmer (1995) offer an account of why DP-DP alternates are illicit (37).

- (37) *Expensive presents don’t give friends easily.

In short, within the model of grammar based on Jackendoff (1990), they argue that an argument can only be projected externally if it is the most prominent argument at both the action tier and the thematic tier of Jackendoff. At the thematic tier of the DP-DP variant of a double object verb, the Theme argument is more prominent than the Goal argument. At the action tier, however, Goal is more prominent of the two. Under the assumption that an element can be projected externally only if it is prominent at both tiers, this means that with a double object middle-verb neither argument classifies as the external argument. This, in turn, conflicts with the demand imposed by the Law on External Argument Preservation (LEAP), which states that if an Actor argument is not projected externally under MF, another argument must be. The problem with the account is that it would incorrectly predict that the DP-PP variant of the ditransitive predicate would be grammatical (38).

- (38) *Presents give to orphans easily. (Roberts (1985))

The DP argument is more prominent on both the thematic and the action tier (i.e., it is Theme/Patient). It follows then that it should project externally. Since it is allowed to project externally, a derivation like (38) should – contra the evidence – be grammatical. Consequently, examples like (38) cannot be accounted for in their system.

3.3 Substituting the Affectedness Constraint: Fagan (1992)

3.3.1 Fagan's Account of the Lexical Constraint on Middle Formation

Instead of the Affectedness Constraint, Fagan (1992) proposes that the constraint on the set of verbs that cannot be input to felicitous middles in English and German are aspectual in nature. Fagan's (1992) condition (cf. also discussion in Chapter 3) is given in (39).

- (39) Only transitive activities and accomplishments undergo MF

As already stated, she follows Vendler (1967) in classifying verbs into four aspectual types. Consequently, on her account, states (e.g. *love*, *hate*, *admire*, and the like) and achievements (*recognize/realize/spot/identify something*, *lose/find object*, *start/stop/resume something*, and the like) are not inputs to felicitous middles.

Putting aside the problem that Fagan (1992) proposes one set of constraints for one type of lexicon language (e.g. English) and a completely different constraint for another (e.g. French), it seems, at first glance, that the constraint in (39) is valid not just for English but also for Dutch. On the one hand, neither Dutch nor English allow verbs like *love* and *hate* to be inputs to felicitous middles. On the other hand, neither Dutch nor English allow verbs like *notice* and *recognize* to be inputs to felicitous middles (40).

- (40a) *Distant objects/stars do not recognize easily.
 (40b) *Such women notice easily.
 (40c) *Charismatic people love easily.

Should then the set of verbs that is not visible to the middle formation operation in English and Dutch be captured by appealing to the aspectual criterion in (39)? The

answer to this question seems to be negative.¹⁴⁶ Firstly, a constraint like (39) depends on the strength of the evidence that the semantically relevant distinction is indeed between the four classes of Vendler. This requires responding to the criticism that motivated various researchers to reject this quadripartite classification. In Kenny's (1963) classification, for instance, Accomplishments and Achievements are not distinguished; they are simply put together as Performances. For Parsons (1990), the only real difference is between States and Events, where activities, accomplishments, and achievements are classed together as events. Parsons (1990) argues that, as far as the tests go, they only seem to isolate states from other eventualities (i.e. achievements, accomplishments, and processes/activities). Others, like Bach (1982) and Reinhart (2000), argue that the only semantically relevant distinction is between two classes: states, which include statives and activities, and events, which include accomplishments and achievements. One should further explain what feature of activities and accomplishments makes them a natural set with linguistic relevance. Note that in none of these classifications mentioned above do activities and accomplishments form such a set. Finally, even if some feature, say +continuous of Verkuyl (1993) is taken to be the common denominator for activities and accomplishments, it is far from clear whether one would want to take the presence of +continuous to play a crucial role with respect to a phenomenon that is standardly understood as thematic in nature.

Secondly, one does not need to resort to aspect to account for the ungrammaticality of (40). One could as easily say that the middles in (40) are ungrammatical since the input verbs are not Agentive, redefining the constraint on the set of verbs in thematic, rather than aspectual terms. Indeed, it has often been noted in the literature that some of the tests used in Vendler (1967) to sort out different verb-classes are actually tied to more than one semantic factor or flesh out a semantic factor they are not intended to. To illustrate the problem, one can use the Agentive Adverbs test. Vendler (1967) proposes that neither achievements nor states license Agentive Adverbs such as *deliberately* and *voluntarily*. Consequently, both (40a) and (40b) are quite unacceptable.

(40a) *He deliberately recognized her.

(40b) *He deliberately loved her.

Note, however, that non-agentive verbs across different classes fail to pass this test (cf. also Verkuyl (1993)). The important point to notice is that regardless of the aspectual class the verb is alleged to belong to, an output whose surface subject is not an Agent, but a Theme, for instance, cannot license the Agentive Adverbs such as *deliberately* and *voluntarily*. The examples in (41) are as odd as those in (40). Importantly for our discussion, the examples in (41) are neither States nor Achievements.

¹⁴⁶ The reader is also referred to Zwart (1998) for elaborate criticism of this facet of Fagan's approach.

(41a) The_[-c-m] diamond is *deliberately glowing.

(41b) The sun_[-c-m] is *intentionally shining.

Thirdly, if one adheres to Vendler's tests, at least, some of the verbs that give rise to felicitous middles might be argued to violate the constraint in (39). Let us illustrate this. According to Vendler, accomplishments typically allow both *in X time* and *for X time* adverbials (42a). Achievements on the other hand, allow only *in X time* adverbials (42b).

(42a) Max painted a picture in an hour/for an hour.

(42b) Max noticed the picture in five minutes/*for five minutes

If the Adverbial Test is applied to (43), the verb in (43) comes out as an achievement, not an accomplishment.

(43) Max broke a porcelain vase in five minutes/*for five minutes

By the generalization in (39), then, it should not give rise to felicitous middles. Contra the generalization, (43a) and (43b) are perfectly acceptable middles.

(43a) A porcelain vase breaks easily.

(43b) Een porseleinen vaas breekt gemakkelijk.
'A porcelain vase breaks easily.'

3.3.2 Fagan's (1992) Account of Ditransitive Verbs

Fagan argues that the ungrammaticality of (44a) is rooted in the "conflict in focus" (Fagan (1992): 79).

(44a) *Small packages ship most customers easily.

(44b) Small packages ship easily.

Namely, on Fagan's account, the mention of this second entity is at odds with the purpose of middles, which is to describe properties of the subject. In other words, "the presence of the second entity shifts the attention away from the subject, which is the main focus of the middle" (Fagan (1992): 80). The problem with this account of the Goal-Recipient restriction is that middles like (44a) and (44b) are also unacceptable, even though there is no obvious "conflict in focus". Namely, the intended reading of these middles is, indeed, to ascribe properties to the sole syntactically realized elements: *children* and *students* respectively. Namely, (50a) should read *It is easy to teach children* and (45b) should read *It is easy to rent to*

students. Notice further that the problem of (45a) and (45b) cannot lie in the fact that something other than the proto-typical Theme is ascribed certain properties. Namely, middles with Experiencers as surface subjects are perfectly acceptable (45c). Thus, the unacceptability of Recipient Goals does not seem to reside in the “conflict in focus”.

(45a) *Children teach easily.

(45b) *Students rent easily.

(45c) Children scare easily.

As already said, Fagan (1992) correctly notes that there is a difference in acceptability between (46a) and (46b). The examples and judgments are from Fagan (1992). Notice that if it is the “conflict in focus” that accounts for (46a), the same should hold for (46b). The fact is, however, that (46b) is, at least, marginally better than (46a). Recall that already in Chapter 2, the difference between (46a) and (46b) was accounted for by appealing to the ambiguity of *to*-phrases with *ship*-type verbs. The ambiguity, in turn, stems from the argument versus adjunct status of the element; it has nothing to do with “conflict in focus”.

(46a) *Small packages ship most customers easily.

(46b) ??Small packages ship to most customers easily.

3.4 The Issue of Movement versus Non-movement Derivation of Middles Revisited

I have already stated that I will be working under the hypothesis that middles in lexicon languages are unergative. However, I have also stated that, in principle, there is nothing in the Theta System that forces a presyntactic derivation to be unergative. This is not so for all the lexicon approaches to middles. Namely, one should notice that whereas the proponents of the movement analysis are also proponents of the syntactic approach to middles, the proponents of the non-movement analysis are also the proponents of the lexicon derivation of middles. The question that immediately arises is whether there is a natural relation between the two. I will argue that the correlation is not a natural one, but rather stems from a particular implementation of MF that lexicon approaches typically cling to.

The correlation is rooted in the fact that the lexicon approaches in the literature (cf. Fagan (1992), Ackema and Schoorlemmer (1995), (2003) take the middle formation operation to be an instance of Williams’ (1981) general Externalize (X) operations, where X is some designated argument (Theme in Williams (1981)). Consequently, the assumption of the lexicon approaches that utilize Externalize X is that middles in Dutch and English are by definition unergative. There are two potential problems

with the implementation of the Externalize X rule. On the one hand, the problems with any rule of type Externalize X is that it cannot capture the full range of data. Hoekstra and Roberts' (1993) correctly point out that not only Themes, but also Experiencers (47) are promoted as surface subjects of middles. In other words, if the designated argument X is a Theme, then it becomes harder to explain how Experiencers (*children* in (47)) end up externalized in the middle as well.

(47) Children scare easily.

Ackema and Schoorlemmer (1995), propose that the problem can be alleviated if the property of being an external argument is not regarded as a designated property of a particular argument (cf. also Neeleman (1994) for the same proposal with respect to other instances of Externalize X) – as in Williams (1981) – but should be regarded as the next highest on some thematic hierarchy (as in Baker (1988a), Grimshaw (1990), and Jackendoff (1990)). Though prominence on the thematic hierarchy would alleviate the problem of (47) - as already said – it incorrectly predicts that DP-PP variants of ditransitive verbs should be grammatical (cf. (38) in 3.2.1).

The second problem with Externalize X is that it seems to force a very unnatural correlation. Namely, the prediction seems to be that whenever there is a lexicon operation that applies to the verbal entry, the entry will end up syntactically unergative. There are no conceptual or empirical reasons to assume that this is the correct generalization. Take the case of Expletivization. Expletivization is an operation that applies in the lexicon on the verbal entry and, in effect, eliminates the argument. Yet, the output of Expletivization is unaccusative, not unergative (48).

(48a) The vase_i broke t_i

(48b) De vaas_i brak t_i

Consequently, it should not come as a surprise that the brunt of criticism of the lexicon approaches is focused on the Externalize X type of rules and its implications. The problem with the syntactic – movement – approaches is that the movement is tied to thematic restrictions (cf. Hoekstra and Roberts (1993)). As I will show in section 4, the issue of the derivation of middles can, in principle, be divorced from the issue of the movement or nonmovement analysis of middles. I will offer a lexicon account for the derivation of middles in English and Dutch, which does not depend on the rule Externalize X as proposed in the literature on middles. The unergativity of middles in lexicon languages will be derived from the properties of the middle-entry itself.

3.5 Can middles in Dutch and English be derived in the Syntax?

Before proceeding with the analysis, there is one more issue that needs to be addressed - the issue of whether Dutch and English middles can be derived in the

syntax. The issue has direct implications for the type of approach I advocate here. I will argue that middles in Dutch and English are derived presyntactically – in the lexicon. In order to address this issue, the key elements of Hoekstra & Roberts' (1993) account will be presented here. There are two reasons for the choice of their approach. On the one hand, it is the most elaborate syntactic approach to middles in Dutch and English. On the other hand, their approach is intended to have broader implications for the lexicalist versus non-lexicalist dispute with respect to the structure of the lexicon. Namely, the underpinning of the approach is to probe the structure of the lexicon, where the desired outcome is to eliminate “a whole class of powerful mechanisms, namely the rules which manipulate theta-grids” (Hoekstra and Roberts (1993): 183). Thus, Hoekstra & Roberts argue that provided that a successful case for a syntactic derivation of middles can be given, there is no reason not to pursue the elimination of other powerful lexical operations (Reflexivization, for instance), finally resulting in the elimination of the whole class of rules which manipulate theta-grids. Recall that rules that manipulate theta-grids are the rules of the manipulative or rule-driven component of the lexicon. It follows then that if the rules are rendered redundant, this component is rendered redundant as well. The lexicon without the manipulative component is reduced to a non-lexicalist idiosyncratic lexicon (i.e. sound-meaning pairing). If the lexicon is thus reduced to the idiosyncratic component, then all derivations must take place in the syntax. The main points of Hoekstra and Roberts' (1993) account are given in (49).

- (49a) There are no rules which manipulate theta-grids.
- (49b) Mapping is guided by general principles such as the Theta Criterion, the Projection Principle, the Uniformity of Theta-Assignment Hypothesis (Baker (1988a) and (possibly) the Thematic Hierarchy Rules in the sense of Jackendoff (1972) and Belletti and Rizzi (1988).

The implications of the first point are straightforward. The second point might require some explanation. The interpretation of the Projection Principle that Hoekstra and Roberts (1993) have in mind is given in (50).

- (50) Thematic properties of lexical items must be structurally represented at all syntactically relevant levels of representation.

By (50), if one of the verb's arguments is saturated, one must regard this argument not just instantiated at LF, but also somehow instantiated in the syntax itself. Consequently, by (50), mapping from the lexicon to the syntax is made trivial (i.e. there are no lexicon operations that manipulate grids and a verb always projects its arguments in the same way).

In terms of (50), middles in Dutch and English are required to have a syntactically represented logical subject argument. Since the logical subject is not overt, it must be an empty category. As argued by Hoekstra and Roberts, the empty category in

question is *pro*. As pointed out by Ackema and Schoorlemmer (2003), the intriguing thing to notice about their analysis is that, in arguing that Dutch and English have a subject and object *pro*, Hoekstra and Roberts seem to put them *on a par* with Italian (a *pro*-drop language, which exhibit both the subject and the object *pro*). Even if this surprising parallelism is ignored, the problem that arises from such an analysis is that on Rizzi's (1986) account, the existence of *pro* is argued on the basis of its syntactic activity. Namely, as shown by Rizzi (1986), the object *pro* in Italian can act as a controller and as a binder. It is exactly the lack of any syntactic evidence for object *pro* in English that motivates Rizzi (1986) to argue that English does not have an object-*pro*: English object-*pro* is syntactically inert.

Hoekstra and Roberts (1993) concur with the fact that the English *pro* (unlike its Italian counterpart) is syntactically inactive. To account for this fact, they propose that both the subject and the object *pro* in English are licensed in a different way than their counterparts in Italian. To Rizzi's (1986) standard condition of licensing of *pro*, they add a theta-licensing condition (i.e. *arb* licensing). The idea behind *arb* licensing is that *pro* can be formally licensed simply by being assigned a theta-role by a lexical head, as long as it remains in the position to which this theta-role is assigned. The middle-*pro* in English is identified or content-licensed by a modifier. Consequently, the middle *arb* in English is licensed in the theta-domain of the lexical head and further identified as *arb* by a modifier. On their account, being only theta-licensed, the middle-*pro* in English is syntactically inactive. The licensor of the middle-*pro* is an adverb like *easily*. The problem, of course, is that not all middles require the presence of an adverb to start with. A possible explanation would then be that an adverb is always present, though sometimes, it is phonologically null. Even with such elaborate machinery as Hoekstra and Roberts (1993) propose, it seems very hard to argue for the presence of a phonologically null element that is not sensitive to any syntactic tests and whose licensor also occurs as a phonologically null element. In other words, in order for mapping to be as trivial and simple as Hoekstra and Roberts (1993) propose, one is required to accept a special type of invisible element in the syntax whose presence cannot actually be detected by any syntactic means available. One further has to accept that this untraceable element is licensed by a modifier whose presence is actually not required in the middles to start with. Recall (cf. Chapter 3) that, in perfectly acceptable English examples like (51), no adverbial modifier is present. As argued in Chapter 3, middles require some sort of licensing, adverbial modifier being one such instance, since the matrix cannot be devoid of content.

(51a) This umbrella folds.

(51b) This book sells.

(51c) This dress buttons.

The second problem that arises from their analysis resides in the fact that by eliminating the active lexicon, they force the thematic restrictions to apply to

movement. Recall that there are conceptual and empirical problems with such an analysis. Firstly, recall that Move is an operation of syntax proper. The role of syntax proper is to put something of the right type into the position of the right type. The account is further problematic since it depends on the postulation of a special type of inherent accusative with those verbs that cannot undergo middle formation operation in Dutch and English. It has already been said that English presents some difficulty in deciding whether something is structural or inherent. Dutch, however, is much more straightforward. Recall (Chapter 2 and Chapter 3) that only structural ACC can be suppressed in Dutch through passivization. If, indeed the case assigned to the internal argument of verbs that cannot undergo the middle formation operation is inherent, one would expect them to be unavailable for passivization. This however is not the case. The examples in (52) illustrate verbs that do not give rise to felicitous middle derivations and yet, they allow for the suppression of Case of the internal argument (53). Since only structural Case can be suppressed in Dutch, these verbs are direct counterexamples to the assumption that the Case of internal arguments of all verbs that do not allow for the middle formation operation is inherent.

- (52a) *Max haat gemakkelijk.
Max hates easily
- (52b) *Het antwoord weet gemakkelijk.
the answer knows easily
- (52c) *Max vreest gemakkelijk.
Max fears easily
- (52d) *De berg ziet gemakkelijk.
the mountain sees easily
- (52e) *Het boek begrijpt gemakkelijk.
the book understands easily
- (53a) Max wordt gehaat door Peter.
'Max is hated by Peter.'
- (53b) Het antwoord wordt geweten door Peter.
'The answer is known by Peter.'
- (53c) Hij wordt gevreesd door Peter.
'He is feared by Peter.'
- (53d) Max werd gezien door Peter.
'Max was seen by Peter.'

- (53e) Het boek wordt niet begrepen door Peter.
‘The book is not understood by Peter.’

Recall that in Roberts’ (1985) analysis, both perception verbs like *see* and stative verbs like *know*, *love*, and *hate* are excluded from the middle formation operation under the Affectedness Constraint. In Hoekstra and Roberts (1993), the Affectedness Constraint-account is offered only for perception verbs like *see*. The reason why “inherently stative” verbs do not form acceptable middles lies in the fact that “stative verbs lack an E-argument. The absence of E-argument leaves the adverb’s external argument unassigned” (Hoekstra & Roberts (1993), p. 194). Following the discussion in Chapter 3, section 2.1.2, such an account cannot be accepted since there are strong arguments that stative verbs have a Davidsonian argument as well. Recall, for instance, that the inference pattern characteristic of modifiers with events also holds for states. In addition to the arguments presented there, I would like to add two more arguments from the perspective of SC. Progovac (1997), (1998a) has successfully argued that in addition to its demonstrative use – corresponding to the English demonstrative *that - to* in SC is used as an event pronominal. She identifies three uses of this event pronominal. The bound-variable use of this pronominal is of importance for our discussion here. Let us take a look at the English examples in (54) first. The event –semantics representation of the English sentence like (54a) is given in (54b).

- (54a) Novak read the book, and quickly
- (54b) $\exists e (R\ n,b,e) \ \& \ (Q,e)$
- (54c) There is an event of Reading R by Novak n of the book b in the event e, and the event e is quick Q.

(Progovac (1997))

The SC counterpart of English (54a) is given in (55a). As indicated in (55a), *to* cannot be omitted. Progovac proposes that *to* in (55a) is the spell-out of the event variable in (54b). As argued by Progovac, *to* appears exactly in the position where Davidson (1967) postulates the abstract event variable. This use is clearly different from the demonstrative use of *to*: notice that in the English example in (54a) *that* is unacceptable (55b).

- (55a) Novak je pročitao knjigu, i *(to) brzo.
Novak AUX read book and *to* quickly
‘Novak read the book, and quickly.’
- (55b) Novak read the book, and *that quickly.

Progovac's analysis of *to* in (55a) as an overt counterpart of the unexpressed event variable predicts that *to* will not appear with sentential adverbs. This, of course, is consistent with the fact that - unlike VP-adverbs - sentential adverbs are not analyzed as predicates of events (cf. Parsons (1990)). This prediction is, indeed, borne out. As seen in (56), a sentence adverbial like *srećom* "fortunately" cannot appear with *to*.

- (56) *Goran je stigao, i to srećom
Goran is arrived, and *to* fortunately (Progovac (1998))

Importantly for our discussion, notice now that it is not just the eventive (55a) or (57a) that exhibit the use of *to*. As seen in (57b), statives behave in exactly the same way.

- (57a) Novak je izgradio kuću, i to brzo.
Novak built the house, and *to* quickly
- (57b) Otelo je voleo Desdemonu, i to strastveno.
Othello loved Desdemona, and *to* passionately.

Following Progovac's analysis of *to*, then one must conclude – contra Hoekstra and Roberts (1993) - that stative verbs do, in fact, have the event argument.

The second point to make is purely empirical. Recall that on Hoekstra and Roberts' (1993) analysis, adverbs such as *easily* contribute to the identification of the middle-*pro*. On their account, *easily*-class adverbs have a dyadic argument structure in which the adverb's Experiencer argument is theta-identified with *pro*, whereas the other position of adverb's theta-grid theta-binds the verb's event argument. As already said, it is the absence of an e-argument with statives that "leaves the adverb's external argument unassigned" (Hoekstra & Roberts (1993): 194) and henceforth, the ungrammaticality of stative middles. Notice - that although - English and Dutch indeed do not allow stative verbs like *love* to form felicitous middles, this is not true across-languages. As already noted, in SC and Romance languages, *love* gives rise to a perfectly acceptable middle derivation (58). Notice that if one applied Hoekstra and Roberts' (1993) analysis to the SC data like (58), one would have to say that English *love* and SC *love* are crucially different in that the former lacks an e-argument, whereas the latter has it. Considering the fact that in aspectual terms, the SC *love* does not seem to be any different from its English counterpart, this would be indeed a rather unusual state of affairs, since both the English *love* and the SC *love* exhibit typical behavior of statives with respect to the stativity tests available in these languages.

- (58) Maks se lako voli.
Max se easily love

To sum, counter to their intent, what even the most elaborate syntactic approaches like that of Hoekstra & Roberts (1993) show is that the derivation of Dutch and English middles presupposes the existence of the manipulative/Rule driven component of the lexicon. Conceptual and empirical problems with a syntactic approach to middles in Dutch and English arise simply because the lexicon and the syntax are different modules that abide by different rules. One simply cannot *burden* syntax with operations that are incompatible with the nature of the module itself. Forcing Dutch/English middles into syntax forces a new look at the syntactic movement that is hard to accommodate within the standard assumptions about syntactic movement. It is exactly the existence of Dutch and English middles that shows that the optimal design of the language faculty requires the existence of the active lexicon.

4. Theta System Approach to Middles

4.1 Criteria for Parameterization

We have already stated that MF in Dutch/English type of language has properties that are not universally shared by MF. I have isolated three such properties. They are summed up in (59).

- (59a) Restrictions with respect to the type of verbs that are legitimate input to the middle formation operation
- (59b) Lack of morphological marking of the operation
- (59c) Goal-Recipient Restriction

I have already shown that languages like SC do not pattern with Dutch and English with respect to (59). By way of summary, the relevant data for SC are given in (60). French, Italian, and Polish pattern with SC in this respect.¹⁴⁷

- (60a) Deca se lako vole.
children se love easily
'It is easy (for one/people, in general) to love children.'
- (60b) Deca se lako uče pravilima.
children se easily teach rules
'It is easy for one to teach children rules.'

¹⁴⁷ As elsewhere in this Chapter, I will be referring to data from syntactic languages only in so much as it facilitates our understanding of middles in Dutch and English. Since the syntactic languages are handled in Chapter 5, I find the illustration with SC adequate for our purposes here.

- (60c) Kišobrani se lako gube.
 umbrellas se easily lose
 ‘It is easy for one to lose umbrellas.’

The relevance of these three characteristics is that they are actually the criteria for the membership in English/Dutch type of language. The question to pose is, of course, what it means to be a Dutch-English type of language. The answer is that in this type of languages middles are formed presyntactically. As I will show, the characteristics stem directly from the level at which and the way in which the middle formation operation applies in these languages. The fact that SC does not pattern with Dutch and English in this respect means that middles in SC are derived differently from middles in Dutch and English. Consequently, (59) constitutes criteria for parameterization across languages with respect to the middle formation operation. I argue that languages that exhibit characteristics in (59) derive their middles in the lexicon. Languages that are not sensitive to (59) derived their middles in the syntax. As evident from (60), SC is such a language. For ease of reference, I will refer to the former type of the middle formation operation as the Lexicon Middle Formation (henceforth: LMF) and to the latter as the Syntactic Middle Formation (SMF).

The characteristics of middles in these two types of languages are tied to a particular way of deriving middles. Let me first sum up the key points of the LMF. Unlike reflexives, middles in Dutch do not require special case absorbing morphology since there is no Case to absorb to start with. The inability of Recipient Goals to realize on the middle entry will be taken to indicate that the LMF is a Concept-Forming/Changing Operation, similar to the Lexical Causativization in that respect. Namely, the Lexicon Middle Formation Operation is a manipulative operation that changes the content of the external role of the input verb. The middle formation operation in Dutch/English-type language operates on the verbal entry. For that reason, unlike with passivization, not all of the clusters of the base entry can co-occur together. We will see directly how this follows. Finally, if the middle formation operation in Dutch and English is bound to the lexicon, the lack of productivity (in terms of the lexical restrictions they exhibit) is what one would expect. It is standardly assumed that unlike lexical processes, syntactic processes are fully productive. Thus, it should not come as a surprise that only certain verbal concepts are visible to the LMF.

4.2 The Layout of the Theta System Approach to Middles

The inquiry into MF in the Dutch/English type of language will be structured as follows: first, the set of verbs MF applies to will be defined. Then, the operation that applies to this set will be defined. Finally, having explored the properties of the input to the middle formation operation, the focus of attention will be the output that is produced by the application of the operation. In order to achieve this, the presentation is organized as follows: in subsection 4.2.1, the means to capture the set

of verbs visible to the LMF and the set itself are presented. Thus, in 4.2.1, the focus is on the input to the LMF. The LMF is discussed in 4.3. Sections 4.4 – 4.6 focus on the output of the application of the LMF. Section 4.4 deals with the derivation of middles, 4.5 offers an explanation for the lack of morphological marking in Dutch middles, and 4.6 deals with the interpretation of middles.

4.2.1 *The Set of Verbal Concepts LMF Applies to*

The claim here is that the key to capturing the set of verbs that are visible to the LMF lies in the verbal grid itself. Before going into the examination of the verbal entries from the perspective of their theta-grids, let us first entertain the option of capturing a generalization pertaining to the candidate set in terms other than the properties of feature clusters.

Let us start by exploring why the set needs to be defined on the grid of a verb. Take, for instance, a verb like *escape*. First, this verb illustrates that the set of verbs visible to the LMF cannot be captured in aspectual terms. *Escape* does not violate any aspectual conditions encountered in the literature for verbs that cannot be felicitous inputs to the LMF. Namely, as shown in examples (61a) - (61b), *escape* is insensitive to the key tests either the states or achievements in Vendler's (1967) classification are sensitive to.

(61a) *Escape!*

(61b) *Max is escaping the secret police.*

Yet, verbs like *escape* do not serve as felicitous inputs to the LMF.

(61c) **The secret police escapes easily.*

There is, of course, a syntactic solution to the *escape*-puzzle. *Escape* does not allow for passivization either.

(62) **The secret police was escaped by Max.*

Thus, one could appeal to the fact that those verbs that do not have an external argument cannot undergo MF to start with. This, of course, is empirically correct. However, given the claim that the middle formation operation in Dutch and English applies presyntactically, I argue that such a generalization is untenable. Recall that before marking procedures, the entry of *escape* looks as in (63a).

(63a) *escape*: [-c-m] [-c]

There are no indices on verbal clusters. They come in unordered. I have said that the LMF applies before marking. The input to it is exactly the entry given in (63a).

From (63a), the LMF cannot ‘tell’ whether the two clusters of *escape* are both internal or whether one is external and one internal. Thus, if the LMF applies to the unmarked verbal concept, it is impossible to derive the properties of the LMF by appealing to syntax to start with. If the theta-arguments of the verb are not assigned indices at the level at which the LMF applies, then it is far from trivial to derive how the LMF would ‘know’ which argument will be consequently merged externally. This kind of ‘look-ahead’ is not just conceptually, but also empirically unsustainable. If one wants to utilize the advantages that the Theta System offers over the Externalize X type of operations, then one must also commit oneself to the fact that the clusters are not marked prior to the marking procedures. Consequently, neither *escape* (63a), nor *read* (63b) will offer any clues to the LMF with respect to the Merging Instructions. Consequently, one must explain how it is that only *read* is a felicitous input to the LMF.

(63b) *read*₂ [+c+m] [-c-m]

Furthermore, empirical data indicate that the right generalization pertaining to the set of verbs visible to the LMF should be divorced from the syntactic notions such as external and internal.¹⁴⁸ Namely, verbs like *receive* present a huge problem if the set is viewed through the syntactic prism. As seen in (64) *receive*-type verbs cannot undergo the LMF in either English or Dutch. The Dutch example in (64a) is from Ackema and Schoorlemmer (1994).

(64a) *Cadeautjes ontvangen lekker.
presents receive easily

(64b) *Presents receive easily.

(64c) The present was received by Peter.

Any account that utilizes notions such as external and internal to capture the set of verbs visible to the LMF will be ill suited to explain this. Namely, *receive* allows for passivization (71c), which, in turn, means that, minimally, it must have an external role (cf. Pesetsky (1995)). If a verb were to be visible to MF on the grounds of having an external theta-role, *receive* should be allowed to undergo MF. However, *receive*-type verbs disallow MF.

Consequently, a generalization in terms of notions such as external and internal is conceptually undesirable and empirically too broad. In what follows, I will develop a way of capturing the set. I will also address the issue of why the set of verbs that

¹⁴⁸ It is important to notice that in many a lexical analysis of different phenomena, it is often stressed that, ideally, notions such as external and internal should be restricted to the syntax. In many of the approaches they cannot be banned from the lexicon, however, since the indices are forced onto the theta roles at the point when they are not needed. In addition to the undesired effect this move has for the analysis of middles, it has an unwanted effect for other processes, adjective-to-verb conversion being one of them.

are visible to the LMF turns out to be a subset of those verbs that end up having an external role.

4.2.2 Candidate Set through the Prism of Feature clusters

Let us focus on the thematic properties of verbs now. The middles of the verbs in (65a) - (65d) are attested in the Dutch/English type of language.

- (65a) Max_[+c+m] read *Tristram Shandy*_[-c-m]
 (65b) Max_[+c+m] analyzed the data_[-c-m]
 (65c) Max/the wind_[+c] broke the vase_[-c-m]
 (65d) Max/the noise_[+c] scared the children_[-c+m]

The middles of the verbs in (66a) – (66d) are disallowed in the Dutch/English type of language.

- (66a) Max_[-c] escaped the secret police_[-c-m]
 (66b) Max_[+m] received a present_[-c-m]
 (66c) Max_[+m] loved Mary_[-c-m]
 (66d) Max_[+m] noticed the painting_[-c-m]

The difference between the two types of grids can be explained in terms of the absence/presence of a [+c] role. Namely, verbs that allow for the LMF have a [+c] role on their grid. Verbs that disallow the LMF have no [+c] role. Given this fact, we can state the LMF visibility requirement as follows:

- (67) LMF Visibility Requirement
 A verb is visible to the LMF iff its verbal concept contains a [+c] role.

By (67), all verbal concepts with [+c] or [+c+m] roles are viable inputs to the LMF.¹⁴⁹ Let us check how the empirical data behave with respect to the LMF

¹⁴⁹ Logically, the requirement in (67) covers also possible, though - so far – unattested verbs that would allow Causes, but not Agents to realize as external role. Since such verbs are unattested (cf. Levin and Rappaport for the conclusion that there are no verbs that allow natural force as subject, but not Agents) I am glossing over them. It, however, remains a mystery why such verbal concepts are not attested. The second generalization that exists in the literature is that there are not verbs that are lexically specified to take only Instruments (cf.

Visibility Requirement. The types of verbs that are visible to the LMF are given in (68a) – (68d).

- (68a) Verbal Concept: ([+c], [-c-m])
e.g. Porcelain vases break easily.
- (68b) Verbal Concept: ([+c], [-c+m])
e.g. Children scare easily.
- (68c) Verbal Concept: ([+c+m], [-c-m])
e.g. The dress washes easily.
- (68d) Verbal Concept: ([+c+m], [-c-m], [-c])
e.g. These ideas teach easily.

Just like the verbs in (68), the grammaticality of middles in (69) - taken from Keyser & Roeper (1984) – is predicted by (67). Verbs like *open* and *move*, *kill* are [+c]-verbs (i.e. they have a Cause on their grid, whereas verbs like *hang*, *bribe*, and *paint* are [+c+m]-verbs (i.e. they have an Agent on their grid).

- (69a) The door opens easily.
- (69b) The car moves easily.
- (69c) The clothes hang easily.
- (69d) The bureaucrats bribe easily.
- (69e) The floor paints easily.
- (69f) The book translates easily.
- (69g) The chickens kill easily.
- (69h) The letter transposes easily.
- (69i) The boxes will not transport easily.

The same is true for Dutch. All the verbs that serve as an input to the LMF operation in Dutch have a [+c] role on their grid. A sample of verbs that are predicted to allow the LFM by (67) is given in (70). The examples in (70a) – (70c) are from Cornips & Hulk (2000). The example in (70d) is from Ackema & Schoorlemmer (1994). The examples in (70e) - (70f) are from Ackema & Schoorlemmer (1995). The examples

Parsons (1990)), but not Agents. This can be explained in the Theta System, since the [+c-m] cluster is interpreted as Instrument only if there is an Agent (cf. Reinhart (2002)).

in (70g) – (70k) are from Ackema and Schoorlemmer (2003), and the example in (70l) is from Zwart (1998).

- (70a) Dit hemd wast goed.
'This shirt washes well.'
- (70b) Deze appel eet gemakkelijk.
'This apple eats easily.'
- (70c) Dit huis verft gemakkelijk.
'This house paints easily.'
- (70d) Dit boek lees als een trein.
this book reads like a train (i.e. extremely easily)
'This book reads really easily.'
- (70e) Dit artikel vertaalt niet gemakkelijk.
this article translates not easily
'This article does not translate easily.'
- (70f) Deze deur sluit makkelijk, zelfs voor kleine kinderen.
this door closes easily even for small children.
'Even for small children, it is easy to close this door.'
- (70g) Die aardappels ROOIEN, niet te geloven!
these potatoes dig-up, not to believe
- (70h) Dat soort huizen bouwt niet makkelijk.
that sort houses builds not easily
- (70i) Zo'n landschapje schildert gemakkelijk
such a landscape paints easily
- (70j) Dat soort flutromannetjes schrijft gemakkelijk
this sort dross-novel writes easily
- (70k) Zulk soort truien breit niet moeilijk
this sort sweaters knits not difficult.
- (70l) Koude gerechten serveren gemakkelijk.
cold dishes serve easily
- (70m) Een BMW rijdt gemakkelijk.
'A BMW drives easily.'

- (70n) Kleine winkelwagentjes duwen gemakkelijk.
'Small shopping carts push easily.'

The examples in (70a) – (70n) illustrate both two-place (e.g. *bouwen* “build”) and three-place verbs (e.g. *serveren* “serve”). Some of them have the so-called affected objects (e.g. *eten* “eat” and *wassen* “wash”) others do not (e.g. *lezen* “read” and *vertalen* “translate”). What they all have in common, however, is the presence of a [+c] cluster on their grid. Namely, all the verbal concepts giving rise to middles in (70a) – (70n) have either a [+c] (e.g. *breken* “break” and *sluiten* “close”) or a [+c+m] (e.g. *schilderen* “paint” and *serveren* “serve”) role on their grid.

By the LMF Visibility Requirement, verbal concepts that do not contain a [+c] role in their grid are invisible to the LMF. Let us look at some of the classes. Stative verbs like *love*, *hate*, *believe*, *know*, *fear*, and the like will not undergo the LMF. The reason is that they contain no [+c] role. The example (71d) is from Levin (1993).

- (71a) Verbal Concept: ([+m], [-c-m])
 (71b) *Old grannies love easily.
 (71c) *Old grannies fear rather quickly.
 (71d) *French fabrics adore easily.

Though a great many of these verbs are psych-verbs, the prediction of the analysis is that not all psych-verbs will behave uniformly with respect to the LMF. Namely, just like *scare*, both *fear* and *love* are psych-predicates. Unlike *fear* and *love*, *scare* allows for the LMF.

- (72) Old grannies scare easily.

The answer lies in their respective theta-grids. Whereas the theta-grid of *scare* contains a [+c] role, the theta-grid of *fear* and *love* contains a [+m] role. It is also important to stress that for the analysis of middles here, it is irrelevant whether the external argument of *fear* and *love* are [+m] or if they were to be specified as ‘standard’ Experiencers [-c+m].¹⁵⁰ In either case, the theta-grid of *fear* and *love* would be invisible to MF since it does not contain a /+c feature. The set of stative verbs like *love* is just a subset of verbs without the /+c feature. Two-place unaccusatives (e.g. *escape*, *matter*, *occur*, and *appeal*) do not have a [+c] role on their grids either (73a). By the LMF Visibility Requirement, these two-place unaccusative verbs will not be visible to the LMF either

¹⁵⁰ There are independent reasons for the choice of a [+] cluster over a mixed cluster in case of *love*. I am ignoring these since it is important to stress that both [+m] and [-c+m] are predicted to be invisible to the LMF.

(73a) Verbal Concepts: ([-c-m], [-c])

(73b) *The idea escapes easily.

(73c) *These ideas appeal easily.

It is only in terms of the LMF Visibility Requirement that verbs like *love* and verbs like *escape* can get a uniform treatment with respect to MF. Namely, these two groups differ radically in terms of their syntax and semantics. Whereas verbs like *love* and *hate* are transitive, verbs like *escape* or *occur* are unaccusative. Whereas verbs like *love* are stative, *escape* is eventive.

On the Theta System approach to middles, the only thing that needs to be said in order to account for their uniform behavior with respect to MF is that they lack a [+c] role, hence they are invisible to the LMF. No additional apparatus (in terms of syntactic positions, for instance) needs to be invoked. This is both conceptually and empirically desirable, since under any approach that advocates for the LMF for languages such as Dutch and English (i.e. MF before marking), a prerequisite is to make no appeal to syntactic positions of the verb's arguments. The approach here correctly predicts that *receive*-type verbs do not allow for the LMF. The grid of receive is given in (74a). The examples in (64) are repeated here as (74b)-(74c).¹⁵¹

(74a) Verbal Concept: ([+m], [-c-m])

(74b) *Presents receive easily.

(74c) *Cadeautjes ontvangen lekker.
presents receive nicely

There are a couple of things to note about *receive*. Unlike typical Goal arguments, the Goal argument of *receive*-type verbs always merges externally. Dowty (1991) notes that almost all the verbs he classifies together with *receive* entail that their subject argument is sentient. In Dowty's system, the subjects of the verbs of this class have sentience as their entailment. Sentience, on the other hand, "might in some cases be sufficient to license an argument's lexicalization as subject" (Dowty (1991): 581). Dowty's insight is compatible with the treatment of these verbs in the Theta System. The "sentience" entailment translates as [+m] in the Theta System, which is, in principle, consistent with two candidates: [+m] and [-c+m]. Either of these clusters would indeed merge externally – [+m] since it is assigned index 1 and [-c+m] since there is nothing preventing it from merging externally. It has, however, been noted in the literature (cf. Jaeggli (1986a) and the references there) that the Goal argument of *receive* is quite peculiar as it may exhibit quite Agentive behavior.

¹⁵¹There are indications that there is some variation among languages with respect to the way they encode verbal concepts. I assume that the permitted variation with respect to the same verbal concept is limited to underspecification.

Since the [+m] cluster - and not the [-c+m] cluster - is consistent with the Agent interpretation (i.e. expansion into [+c+m]), the grid is given as in (74a).¹⁵²

Let us sum up this discussion by revisiting the examples drawn from the literature from section 3.1. Verbs like *run*, *climb*, *pass*, *approach*, *translate*, *transmit*, *read*, and *analyze* are visible to the LMF since their theta-grid contains a [+c] role. Verbs like *know*, *see*, *fear*, *understand*, and *hear* are invisible to MF since they contain no [+c] role in their theta-grid.

Since the LMF Visibility Requirement specifies that those verbal concepts that lack a [+c] role will be invisible to MF, the fact that middles are restricted to certain groups of verbs (cf. section 2) follows naturally from it. In the light of this analysis, the correct empirical observation that verbs that are visible to the LMF turn out to have an external role is straightforward. Recall that by Merging Procedures, [+] clusters always merge externally. Verbs visible to the LMF contain a [+c] cluster. This cluster, on the other hand is a [+] cluster. Consequently, whenever it is realized in the syntax, it will always merge externally.

Last but not least, another observation made in the literature with respect to middles can be explained. Namely, it has been noted that “verbs that display causative/inchoative alternations are found in the middle construction, but there are a number of verbs found in the middle construction that do not display the causative/inchoative alternation” (Levin (1993): 26). In other words, the observation is that the set of verbs that are the input to Expletivization is a subset of verbs that are the input to the middle formation operation. This is exactly what the analysis here predicts. Expletivization applies only to [+c]-verbs (e.g. *break*, *open*, *close*, and the like). The LMF applies to the verbal concept with a [+c] cluster on their grid. This, in turn, means that verbs that contain either a [+c] or a [+c+m] cluster will be visible to the LMF, but only a subset of these verbs (i.e. [+c] verbs) will be visible to Expletivization.

With respect to the predictions other approaches to middles make, two things should be stressed. On the one hand, the LMF Visibility Requirement encompasses one of the oldest conditions placed upon middles: the external role of the input verb to the middle formation operation must be an Agent. (Cf. Roberts (1985), Abraham (1986), Pitz (1987)), since the requirement the LMF imposes makes both the [+c] (a cluster consistent with the Agent interpretation) and the [-c+m] (i.e. Agent) clusters visible to it. The advantage of the LMF Visibility Requirement over the Agent-generalization is that it captures both the agentive verbs like *bribe* (75a) and the causative verbs like *close* (75b). With respect to lexical operations, the distinction is

¹⁵² Note in passing that the grid in (i) would not be visible to LMF either.

(i) V ([-c+m], [-c-m])

important and real. Recall, for instance, that it is only the verbs like *close* and not the Agentive verbs like *bribe* that can serve as inputs to Expletivization.

(75a) *bribe*: ([+c+m], [-c-m])

(75b) *close*: ([+c], [-c-m])

With respect to the data like (75), Ackema and Schoorlemmer's (1995), (2003) approach makes the same predictions as the LMF Visibility Requirement. Namely, their condition successfully captures both (75a) and (75b). Their condition on middles can be stated as (76).

(76) The logical subject of middle must be Actor in Jackendoff's sense, where – in Jackendoff's (1987) terms – the Actor is the character that performs the action, and is picked out by “What NP did was...” test.

Thus, according to Jackendoff (1987), *the car* in (77a) is an Actor since we can say (77b).

(77a) The car hit the tree.

(77b) What the car did was hit the tree.

As already said, Ackema and Schoorlemmer are completely right in stating their condition on middles with respect to Actor, rather than with respect to the “affected object” -Patient in Jackendoff's (1987), (1990) system, since Jackendoff's test for the affected object like *what happened to YP was XP V YP* cannot capture middles like (78). Recall that, the object in (78) is clearly not a Patient (**What happened to the Rotterdam marathon was that Arnold ran it*), while the subject is clearly an Actor since it appears in the frame corresponding to *What Arnold did was run the Rotterdam marathon*.

(78a) Arnold loopt de marathon van Rotterdam.
'Arnold runs the marathon of Rotterdam.'

(78b) De marathon van Rotterdam loopt gemakkelijker dan die van Londen.
'The marathon of Rotterdam runs more-easily than that of London.'

With respect to some other data, the LMF Visibility Requirement might be preferred to Ackema and Schoorlemmer (1995), (2003) condition in (76). Namely, if the test in (76) is taken to be viable, it renders *escape* a legitimate input to the middle formation operation. Notice that just like *Arnold* in (78a), *Max* in (79) fits into the pattern in (76). Still, the middle in (79) is ungrammatical.

- (79a) Max escaped the secret police.
- (79b) What Max did was escape the secret police.
- (79c) *The secret police does not escape easily.

Since our starting point has been that the thematic and syntactic (e.g. external versus internal) criteria should not be mixed to account for the set of verbs that are visible to the LMF, there is no way to prevent (79c) within an Actor-based account.

The LMF Visibility Requirement is a minimal condition since it does not presuppose any additional apparatus or assumptions about the architecture of grammar. The Requirement covers all the verb classes in English and Dutch that allow MF, and, at the same time, excludes all the verb classes in English and Dutch that disallow MF. The LMF Visibility Requirement is tied to the properties of verbal concepts since the LMF operates on unordered sets of feature clusters prior to Marking Procedures. Finally, a word of caution is needed here. The operative word with respect to the LMF Visibility Requirement is “visibility”. Namely, there might be pragmatic as well as semantic factors that might render some middles better than others. In the light of this, it should not be surprising that one finds both examples like (80) and (81) in the literature. Both the unacceptable (80) and the acceptable (81) take the same verbal concepts as inputs. As noted by Ackema and Schoorlemmer, “provided an appropriate context”, the verbal concepts like *climb*, *pass*, and *enter* seem to undergo MF quite easily. Last but not least, note that the Dutch counterparts of (80) are argued to be fully felicitous outputs.

- (80a) *Mountains climb easily for experienced mountaineers.
- (80b) *Little villages pass easily.
- (80c) *Pubs enter only too easily for some people.
- (81a) (Prison architect :) This wall looks as if it would climb too easily. Better put some barbed wire on the top.
- (81b) (Co driver to driver :) The next truck won't pass easily – it's pretty long and traveling very fast.
- (81c) This park doesn't enter easily – there's only one gate that is hidden behind some bushes.

(Ackema & Schoorlemmer (1994))

4.3 The Lexicon Middle Formation Operation

So far, we have identified the level at which the LMF operates, and the set upon which it operates. Let us now examine the operation in question in more details. To be able to explore the issue in full, I will first make a short digression to remind ourselves of one of the puzzling characteristics of middles in Dutch and English: the Ban on Realizing the Recipient Goal.

4.3.1 The Ban on Realizing the Recipient Goal role

The examples in (82) illustrate the ban on realizing the Recipient Goal role in the middle derivation.

- (82a) *Long stories_[-c-m] don't tell easily to children_[-c].
- (82b) *Lange verhalen_[-c-m] vertellen niet gemakkelijk an kinderen_[-c]
'It is not easy (for one/people, in general) to tell long stories to children.'

The ban cannot be explained in terms of the LMF Visibility Requirement since *tell* is a [+c] verb, and indeed, it forms a perfectly acceptable middle in both Dutch and English. Thus, the grid of *tell* (83a) is correctly predicted to be visible to the LMF leading to (83b) and (83c).

- (83a) *tell*: ([+c+m], [-c-m], [-c])
- (83b) Long stories don't tell easily. (English)
- (83c) Lange verhalen vertellen niet gemakkelijk. (Dutch)

Consequently, it seems to me that any attempts to derive the Recipient Goal restriction as a restriction on the set of verbs that are visible to the middle formation operation is not on the right track.

Let us then explore other options. Repeated here as (84) is the preliminary description of the ban on realizing the Recipient Goal role ((13)) from section 2.2.

- (84) The Ban on the Realization of Recipient Goals
The ban on the realization of Recipient Goal is a formal restriction. Recipient Goals cannot realize on the middle entry, where 'realized' should be understood as 'read by the CS'.

The ban on the realization of Recipient Goals is ban on the co-realization of feature clusters. Recall (cf. Chapter 2) that the condition regulating the co-occurrence of feature clusters is the Cluster Distinctness Constraint (85).

- (85) Cluster Distinctness Revisited
Two underspecified clusters are indistinct if there is a construal under which they are identical.

Recall that by (85), the following pairs come out as indistinct:

- (86a) [-m] and [-c] - illicit construal: [-m-c] [-c-m]
 (86b) [-m] and [+c] - illicit construal: [-m+c] [+c-m]
 (86c) [+m] and [+c] - illicit construal: [+m+c] [+c+m]
 (86d) [+m] and [-c] - illicit construal: [+m-c] [+m-c]

By (85b), the pairs in (86e) and (86f) are distinct. Recall that there are no illicit construals for (86e) and (86f). Henceforth, these clusters can always realize together.

- (86e) [+m] and [-m] - no illicit construals
 (86f) [+c] and [-c] - no illicit construals

Recall further that ‘realized’ means either semantically or syntactically active. Consequently, the Cluster Distinctness Constraint is violated in both (87a) and (87b).

- (87a) */?The doctor worried Max about his health.
 (87b) */?Max was worried about his health by the doctor.

With respect to this, recall that the implicit argument of the middle is semantically active. If saturated roles count for the rules that regulate the co-occurrences of feature clusters, then it follows that the cluster of the implicit argument counts also for the rules that regulate the co-occurrences of feature clusters.

The first thing to notice is that the co-occurrence of the clusters of the input verb *tell* does not give rise to either the Non-Identity or Cluster Distinctness constraint. With the middle-*tell*, however, the co-occurrence of clusters gives rise to the violation of one of these two constraints. Consequently, the violation must be the reflex of the LMF itself. Let us then give the first approximation of the LMF (88).

- (88) LMF manipulates a feature cluster of the input verb

Note, that although verbs that give rise to middle derivations have different types and number of internal roles (89), what they have in common is the presence of the [+c] role on their grid.

(89a) *tell*: ([+c+m], [-c-m], [-c]) e.g. Long stories don't tell easily.

(89b) *scare*: ([+c], [-c+m]) e.g. Small children scare easily.

(89c) *break*: ([+c], [-c-m]) e.g. Porcelain vases break easily.

Let us then stipulate that the lexicon middle formation operation somehow manipulates the [+c] role of the input grid (90).

(90) LMF manipulates the [+c] cluster of the input grid.

The claim here is that the type of manipulation is a feature-deletion and, consequently, the type of violation is the CDC violation. The manipulation that the operation involves is the deletion of the content of the [+c+m] role of *tell*. Such manipulation must minimally involve the deletion of one of the features since only unary roles are sensitive to feature-distinctness. Binary roles – either syntactically realized or saturated are not sensitive to the CDC (91).

(91a) Peter_[+c+m] told a story_[-c-m] to children_[-c]

(91b) A story_[+c+m] was told to children_[-c] (by Peter)

Taking into account only the *tell*-type verbs, there are three logical possibilities (92) with respect to the feature-deletion. Single-feature deletion will give us either (92a) or (92b). If, both features are deleted, however, one ends up with (92c). Notice that the third logical possibility here (92c) - though not encountered yet – is predicted in the Theta System (cf. Chapter 1).

(92a) [+c]

(92b) [+m]

(92c) []

Notice, however, that it is not just the agentive verbs like *tell* that the LMF operates upon. Recall that [+c] verbs like *break* or *scare* also feed the middle derivation. Since the LMF uniformly applies to all visible grids, the only option with respect to the deletion is (92c) – the null cluster. The definition of the LMF and the result of the operation are given in (93a) and (93b), respectively.

- (93a) LMF
Target a verbal entry with a [+c] cluster and delete its content.
- (93b) The implicit role in middles in an empty list i.e. [] cluster

The LMF is an entry-changing operation. It deletes the content of the cluster it targets. The term ‘deletion’ should not be understood in the literal sense. The empty list is not devoid of semantic content. It is important to stress that the specification of the null cluster does not indicate that all semantically relevant pieces of information are obliterated. It is reasonable to assume that some of the conceptual properties of the role the LMF applies to are retained. Let us elaborate on this point. Recall (cf. Chierchia (1989), Levin and Rappaport (1995)) that reduced unaccusatives like (94) can occur with a phrase like *by itself* (on the interpretation *without outside help*).

- (94) The window broke by itself.

In Levin and Rappaport (1995), this indicates that the concept entails some reference to an external cause. *By itself* is then used to deny the existence of another cause, by expressing the identity of the cause and the notional object. In the Theta System (cf. Reinhart (2002)), the availability of the *by*-phrase in (94) is accounted for by saying that the feature-composition of the underlying verb (the [+c] role) is still available at the conceptual level, though it has no realization. Since a certain residue of role of the underlying – base - verb is left by an operation that completely reduces the role, then it seems reasonable to assume that some residue is left by an operation that is not as radical as Expletivization. In the light of these facts, let us offer a tentative explanation of why the LMF Visibility Requirement is set exactly the way it is set. Namely, why is it that only verbs with a [+c] on their grid are visible to the LMF? The reason might be rooted in the fact that unlike [+m] verbs, [+c] verbs are cross-linguistically compatible with the Agent interpretation. Namely, cross-linguistically, [+c] verbs like *break, close, open, scare*, and the like are always compatible with Agent interpretation. On the other hand, a great majority of [+m] verbs like *love, adore, know*, and the like are not compatible with the Agent interpretation. Since the implicit role in the middles in Dutch and English is interpreted as a potential Agent, this might be where this precise setting of the LMF Visibility Requirement stems from. This neutralization, rather than complete obliteration of the content of the [+c] role can further be responsible for the Instrument-licensing - characteristic of this implicit argument. Recall that unlike typical [+m] instantiations (e.g. the external role of the *love*-type verbs) both of the underlying clusters i.e. [+c+m] and [+c] (on the Agent interpretation) indeed license Instruments.

Throughout this section, we will be exploring the properties of the [] cluster. Even at this initial stage of our investigation, it is important to stress that the creation of the [] cluster is rooted in the semantics of middles – their generic interpretation and the presence of ARB. I return to deriving these properties in 4.4 and 4.5 of this Chapter. Since we have started this subsection with the problem of the Recipient

Goal restriction, let us first explore the kind of predictions [] has with respect to the CDC. Recall that only co-occurrences of underspecified clusters are filtered out by the CDC. Unlike other underspecified clusters, [] is underspecified for both /c and /m. Being underspecified for both, it follows that it is indistinct from both [-m] and [-c] (95).

(95) [] is indistinct from both [-c] and [-m]

The prediction of (95) is that the [-c] role of the input grid will never realize in the middle derivation. In the view of this, let us take a look at examples (82) repeated here as (96). If the LMF creates the [], the ungrammaticality of (96) is exactly expected.

(96a) *Long stories_[-c-m] don't tell easily to children_[-c]

(96b) *Lange verhalen_[-c-m] vertellen niet gemakkelijk aan kinderen_[-c]
'It is not easy (for one/people, in general) to tell long stories to children.'

Let us elaborate on this a bit further. So far, we have encountered a whole range of instances of a [-c] role that cannot co-occur with the implicit role of middles. Recall that - unlike (97) – the examples in (98) are legitimate middle derivations.

(97a) *Presents give to orphans easily.

(97b) *Children teach easily.

(97c) *Cheap apartments rent students easily.

(98a) Presents give easily.

(98b) These ideas teach easily.

(98c) Cheap apartments rent easily.

Both the grammaticality of (97) and the ungrammaticality of (98) are predicted in the system. Since the base-*give* and the base-*rent* contain a [+c] role, they are visible to the LMF by the LMF Visibility Requirement. Indeed, recall that it is not that a ditransitive verb cannot undergo MF; the point is that that the Recipient Goal argument cannot realize (either as a PP or a DP) once the middle-verb has been derived. If we assume, as we have all along, that the Benefactor/Goal role is [-c], then the answer to the puzzle is the following. Once they undergo the LMF, the [+c+m] role of *give* and the [+c] role of *bake* is rendered as []. As already said, a [] role and a [-c] role cannot realize on the same grid because they are indistinct. Once the [-c] role is left unrealized, the output is fully grammatical, or, at least,

much improved in comparison with the one where the role is realized. Consequently, the analysis of examples is given in (99).

- (99a) *Presents give to orphans easily.
 [] and [-c] are indistinct → *[], [-c-m], [-c]
- (99b) *Children teach easily
 [] and [-c] are indistinct → *[], [-c-m], [-c]
- (99c) *Cheap apartments rent students easily.
 [] and [-c] are indistinct → *[], [-c-m], [-c]

The analysis makes a correct prediction that both the DP-PP and the DP-DP alternates of ditransitive verbs are excluded. Furthermore, a uniform explanation (i.e. an explanation in terms of feature-distinctness) is given for both alternatives. The explanation itself does not appeal to any additional mechanism (syntactic or otherwise).

The account extends to the other instances of ditransitive [+c]-verbs we have encountered so far. The behavior of verbs like *tell* (100a) and *ship* (100b) gets a straightforward account. Since both contain a [+c] role, they are predicted to be visible to the LMF. This prediction is borne out (101).

- (100a) Peter_[+c+m] told a long story_[-c-m] to children_[-c]
- (100b) Peter_[+c+m] shipped a present to his friends_[-c]
- (101a) Long stories don't tell easily. Middle-*tell*: ([], [-c-m])
- (101b) Presents ship easily. Middle-*ship*: ([], [-c-m])

The Recipient (i.e. [-c]) role is not allowed to realize in either middle-*tell* or middle-*ship*, since there is a clash in formal features between the implicit argument [] and the Recipient Goal role [-c] (102).

- (102a) *Long stories don't tell easily to children_[-c]
- (102b) *Presents ship friends_[-c] easily

Let us now turn to the [-m] role. Recall that the prediction here is that [] is indistinct from the [-m] cluster as well. Since *worry*-type verbs (103) are both visible to LFM (i.e. they contain a [+c] cluster) and they also contain a [-m] cluster, let us test this prediction on *worry*-type verbs.

- (103) *worry*: ([+c], [-c+m], [-m])

Recall (cf. Chapters 1 and 2) that by the CDC, [+c] and [-m] are indistinct (104). The consequence of this is that not all three arguments of *worry* can realize together.

- (104) */?Peter_[+c] worried Mary_[-c+m] about her children_[-m]

Let us now examine the behavior of the middle-*worry*. As already said, verbs like *worry* are visible to the LMF since they have the [+c] role in their grid. This prediction is borne out (105).

- (105) A mother worries easily.
'It is easy (for one) to worry a mother.'

Bear in mind that by the application of the LMF, the content of the saturated argument of 'worry' is deleted and the [] cluster is created. Since the [] cluster is indistinct from the [-m] cluster, the prediction is that all three roles of base entry *worry* cannot co-occur with middle-*worry*. The prediction is borne out (106).

- (106) *A mother worries easily about unhappy children.
'It is easy (for one) to worry a mother about unhappy children.'

Scare, *surprise*, *excite*, and *shock* are among the verbs that pattern with *worry* in terms of their theta grids. They form perfectly acceptable middles (107), since – just like *worry* – they have the [+c] role on their grid.

- (107a) Old grannies scare easily. middle-*scare*: ([], [-c-m])
(107b) Mary surprises easily middle-*surprise*: ([], [-c-m])
(107c) Children excite easily middle-*excite*: ([], [-c-m])
(107d) Puritans shock easily. middle-*shock*: ([], [-c-m])

Just like with *worry*, the realization of a [-m] on the grid of the middle-*scare/surprise/excite/shock* is predicted to be illicit as the [] cluster and the [-m] cluster are indistinct. This prediction is borne out (108).

- (108a) *Old grannies scare easily about ghosts.
(108b) *Mary surprises easily about gifts.
(108c) *Children excite easily about holidays.
(108d) *Puritans shock easily about sex.

In Dutch, I will dub the *worry*-type verbs as *choqueren*-type verbs. The reason is simple. In Dutch, *zich zorgen maken* ("worry") is a reduced entry, and thus it is not

a suitable candidate for the cluster-distinctness test.¹⁵³ Just like with its English counterpart, the [+c] and the [-m] clusters of *chocqueren* cannot realize together (109c).¹⁵⁴

- (109a) Max/De pers_[+c] choqueert de puriteinse gemeenschap_[-c+m].
‘Peter/the press shocked puritan society.’
- (109b) De puriteinse gemeenschap_[-c+m] was geschokeerd **over seksueel liberalisme**_[-m].
‘Puritan society was shocked about sexual liberalism.’
- (109c) *Max/De pers_[+c] choqueert de puriteinse gemeenschap_[-c+m] **over (zijn) seksueel liberalisme**_[-m].
‘Peter/the press shocked puritan society about (his) sexual liberalism’

Just like its English counterpart, the input-entry *chocqueren* is visible to the LMF since it has the [+c] role on its grid.

- (110) Puriteinen choqueren gemakkelijk.
Puritans shock easily
‘It is easy (for one/people, in general) to shock puritan society.’

Just like its English counterpart, when the middle is formed, the [-m] role has to be left unrealized. The reason being that the [] role is present semantically. The presence of the [-m] role would result in the clash of formal features since the [] cluster is indistinct from the [-m] cluster (111).

¹⁵³ *Chocqueren* “shock” seems to be the best representative, as it most readily undergoes MF and as it strictly obeys the restriction on the co-realization of all three arguments. With respect to the second point, recall that with some of the verbs that are predicted to abide by this restriction, the co-realization of all three arguments either gives rise to marginally acceptable outputs or it does not give rise to ungrammatical outputs at all (cf. Pesetsky (1995) and the discussion in Chapter 2: section 4.2). I leave the behavior of this subset for further research.

¹⁵⁴ The reader should not confuse the [-m] arguments of the verbs under consideration here with adjuncts, which are, of course admissible to realization in derivations like (109c). In (i), this is illustrated for *choqueren*, though comparable examples can be construed for English as well. This is an uncontroversial consequence of the system. As argued in Chapter 2, rules like the CDC regulate the co-occurrences of the arguments of a predicate.

- (i) Max/de pers choqueert de puriteinse gemeenschap met (zijn) seksueel liberalisme.
‘Max/the press shocked puritan society with (his) sexual liberalism.’

- (111) *Puriteinen choqueren gemakkelijk over sex.
 Puritans shock easily about sex
 ‘It is easy (for one/people, in general) to shock puritan society about sex.’

Finally, notice that the [] is predicted to be indistinct form [+c] and [+m].¹⁵⁵ Consequently, I give the restriction on the co-realization with a [] cluster in its full form (112), from which it follows that the [] cluster can only co-occur with fully specified clusters.

- (112) A null cluster [] is indistinct from all underspecified clusters.

4.3.2 Which PPs can be realized in a middle derivation?

The instances of [-c] and [-m] clusters examined so far are all syntactically realized as PPs. This, however, should not mean that any PP is illicit to co-occur with the null cluster. There are two instances that need to be examined here: a) the availability of directional phrases with middle derivations in Dutch and English and b) the availability of *for/voor* phrases in English and Dutch, respectively. The examples in (114) are illustrative of the former. Unlike Recipient Goals (113), directional Goals can occur with middles in (114).

- (113a) *Small presents send easily to friends_[RECIPIENT]
 (113b) *Expensive presents send easily to friends_[RECIPIENT]
 (114a) Presents send easily to foreign countries_[LOCATION]
 (114b) Presents send easily to London_[LOCATION]

Again, for the sake of presentation, let us assume that, just like Recipient Goals, directional Goals are feature clusters encoded as [-c]. If they are encoded as [-c], one might be surprised at the fact that the Cluster Distinctness Constraint does not filter out the co-occurrences of Directional-Goals and implicit arguments. Following the discussion in Chapter 2, however, this should not come as a surprise. Recall first that the CDC operates on the verbal concept itself. It is tied to the Non-Identity Constraint, which, in turn, protects the uniqueness of feature clusters with respect to a single verb. Recall, further, that directional Goals like the ones in (114) are adjuncts with respect to the verb *send*. Since they are adjuncts, the Cluster

¹⁵⁵ In the case of middles, this cannot be attested empirically since there are no realizable verbal concepts with two [+] clusters. This is a non-controversial consequence of the system; verbs have only one “special argument” (argument that merges externally). Since [+] clusters always merge externally, a verbal grid with two [+] clusters would have two external arguments.

Distinctness Constraint will never be operative to “filter out” the co-occurrence of two underspecified clusters of a different status. Namely, unlike the clusters of arguments –the clusters of adjuncts are not listed on the verb to start with. Being an argument of the verb, the clusters of Recipients in (113) count for the Cluster Distinctness Constraint, yielding the outputs in (113) ungrammatical. The clusters of adjuncts (114) are not encoded on the verb and consequently do not count for the Cluster Distinctness Constraint, yielding the outputs in (114) grammatical.

Next, let us turn to examples in (115). The examples and judgments in (115a) and (115b) are taken from Fagan (1992).

(115a) *Small packages ship most customers easily.

(115b) ?? Small packages ship to most customers easily.

(115c) ?Small presents send easily to friends.

Following the discussion in Chapter 2, the fact that (115b) and (115c) are marginally acceptable should not come as a surprise either. Recall that the verbs like *send* and *ship* allow for both Recipient and Directional Goals. Consequently, a PP with such a verb is ambiguous between having the adjunct and argument status. The reason why (115b) and (115c) are still not perfect outputs might be rooted in the fact that the DPs in question are not felicitously construed as Directional Goals. This however, should not blur the fact that there is a contrast between (115a), on the one hand and (115b) and (115c), on the other hand. Namely, it is only in (115a) - which is a completely ungrammatical output - that the DP *most customers* is unquestionably a Recipient Goal – an argument. Recall that Directional-Goals cannot partake in the Double Object Constructions. Consequently, unlike the output in (115b) and (115c), the output in (115a) is predicted to be completely ungrammatical.

Finally, following the discussion in Chapter 2, one could expect the possibility of the reanalysis of some PP arguments as adjuncts. Namely, something like (116) is expected to be acceptable since the argument of the verb is reanalyzed as an adjunct.¹⁵⁶

¹⁵⁶ Following the discussion in Chapter 2, it is reasonable to assume that some native speakers might “override” the formal inadequacy of (i) by expanding the [-m] cluster. In the light of the data presented in Chapter 2 with respect to the variations in acceptability of outputs like (i), this hypothesis is not implausible. If that happens, I would, nonetheless, expect such outputs never to pass with flying colors.

(i) ?/* Old people scare easily about their health.

With some of the verbs of the [-m] class, overriding might be facilitated by the presence of *about*, which is argued to introduce the Theme-role in many instances. As I said in Chapter 2, I leave the question of whether the “fine-grained” approach to prepositions requires a tripartite, rather than a bipartite division for further research. Namely, if *about* indeed

- (116) Children scare easily - but not about ghosts

The second type of PP allowed with middles in Dutch and English are *for/voor* phrases (117).

- (117) The Bible reads easily for Mary.

The issue of *for*-phrases as in (117) is far from settled and uncontroversial in the literature, even on empirical grounds. Some authors claim that all middles allow *for*-PPs (cf. Stroik (1999)), for instance, whereas others (cf. Ackema and Schoorlemmer (1995)) claim that *for*-phrases are very limited – they cannot be licensed with a great majority of middle derivations. The licensing and semantics of *for*-PP phrases is not less of a dispute in the literature. For some, the licenser is the adverb (cf. Hoekstra and Roberts (1993)), for others it is the implicit argument (Stroik (1992)). For the purpose of our discussion, it is only the status of *for*-phrases in terms of the argument versus adjunct distinction that is important. It seems reasonable to conclude that *for/voor* phrases with middles are the counterparts of *by/door* phrases in passives. The DP within a *by*-phrase is standardly analyzed as an adjunct with respect to the verb in question (cf. Zubizarreta (1985) and Jaeggli (1986a)). It is clear from the interpretation of (118), that *for/voor*-phrase has the same relation with the implicit external argument as the *by/door*-phrase with the implicit argument of passive outputs. Consequently, in terms of the CDC, the presence of the *for*-phrase is unproblematic since it is an adjunct with respect to the middle-verb. In that respect, it behaves just like the directional Goal adjuncts in (118b) and (118c).

- (118a) Deze deur sluit makkelijk, zelfs voor kleine kinderen.
this door closes easily even for small children.
'Even for small children, it is easy to close this door.'

(Ackema & Schoorlemmer (2003))

- (118b) These books won't sell for the average shopkeeper

- (118c) These kinds of books just don't sell for any shopkeeper.

(Stroik (1999))

introduces Themes, then it is closer to semantically contentfull prepositions than Dative-*to*, for instance, is. On the other hand, when an argument introduced by *about* is no longer dependent on it for Case reasons, the preposition is redundant; hence it behaves just like a regular semantically vacuous preposition (ii).

- (ii) His_i health_[-m] worries every patient_{i[-c+m]} (*about)

To sum up, the LMF is an entry-changing operation. It deletes the content of the cluster it targets. It should be clear from the discussion that the term ‘deletion’ should not be understood in a literal sense. The empty list is not devoid of semantic content. Thus, a better term might be ‘neutralization’, rather than deletion. This again is consistent with the fact that the implicit role in the middle is interpreted as a potential Agent. Finally, the fact that the CDC is operative on the middle entry and not on the input entry is a clear indication that the middle formation operation in English and Dutch applies before marking i.e. that it is a Concept Changing Operation. Namely, the CDC operates after marking has taken place. Consequently, for the CDC to be activated in the instance of a middle-entry, the middle formation operation itself must apply prior to it. Thus, in (120), both the input and the output of the LMF (119) for the verb *read* are given:

- (119) LMF
Target a verbal entry with a [+c] role and delete the content of the [+c] cluster.
- (120) *base-read*: ([+c+m], [-c-m]) → LMF → *middle-read*: ([], [-c-m])

4.4 Derivation of Middles

Let us now proceed with the derivational history of middles. Repeated here (cf. Chapter 1) is the definition of Marking Procedures (121), Cluster Classes (122) and the computational system’s rules regulating merging of the arguments are repeated here as (123).

- (121) Marking Procedures
Given an n-place-entry, $n > 1$:
Mark a [-] cluster with index 2.
Mark a [+] cluster with index 1. If the entry includes both a [+] cluster and a fully specified [α , /-c], mark the verb with ACC feature.
- (122) Cluster Classes
Plus-clusters are [+c+m], [+c], [+m], minus-clusters are [-c-m], [-c], [-m]. A cluster can also have a mixed value. Mixed-clusters are Experiencers [-c+m] and Instruments [+c-m].
- (123) CS Merging Instructions
a. When nothing rules it out, merge externally.
b. An argument realizing a cluster marked 2 merges internally; an argument with cluster marked 1 merges externally.

The output of the LMF (119) and the input to the Marking Procedures is given in (124).

(124) middle-read: ([], [-c-m])

4.4.1 ARB-Role

Before moving to the final stage of the derivation of middles in Dutch and English, however, there are two important issues that need to be addressed: a) the behavior of [] with respect to the Merging Instructions and b) the fact that the external argument is semantically, but not syntactically active in the middle. Let us start by exploring the former issue first. Notice that by (121), [] cannot be merged, because there are no instruction on how to merge this cluster. The Marking Rules operate according to the value of the cluster. According to their value, clusters come as “plus”, “minus”, and “mixed” clusters (122). Thus, there is nothing in the Marking Rules that would give any indication how a cluster without any value would merge. This might be a rather odd state of affairs. Namely, it might seem rather odd that our repertoire of clusters would include a role that, in effect, cannot be linked in the syntax. I argue that the oddness does not actually exist since the [] cluster is the ARB-role.

Let us explore this issue. Notice first that it has been often proposed in the literature (cf. Fagan (1988), (1992), Booij (1992), and Ackema & Schoorlemmer (1994) that a way of licensing an unprojected argument in the derivation of middles in Dutch and English is by it being interpreted as arbitrary. Ackema and Schoorlemmer propose that, just like the instances of deletion, the instances of non-projection abide by the conditions of the Recoverability Constraint as given in their (125) and (126).¹⁵⁷

(125) Argument Projection from LCS to D-structure is optional:

¹⁵⁷ Ackema and Schoorlemmer point out that the condition (126b) might not be strict enough for their analysis, since internal arguments of stative verbs like *weten* “know” (i) in Dutch cannot be ARB. Namely a sentence like (i) cannot mean *she knows some arbitrary thing*.

(i) *Ze weet
she knows

To accommodate for (i), they add an assumption that “Only an argument represented at the action tier can be a nonprojecting ARB” and argue that the generalization might be a consequence of the fact that the content of doubly represented arguments (i.e. arguments represented at the action tier and the thematic tier) is more easily recoverable than those that are only represented at the thematic tier as is the case in (i). For our purposes, (126b) is optimal. Namely, the analysis here does not deal with the optionally unprojected arguments, but with the obligatorily unprojected ARB-role. The claim here is that [] is the ARB-role. Since it is the ARB role, it can never be realized in the syntax.

(126) Recoverability Condition

An A-marked nonprojecting semantic argument α must be

- (a) discourse linked to a semantic argument identical to α
- (b) ARB

Let us now turn back to the [] cluster. I assume that the ARB-role is different from optionally realized arguments that optionally get the ARB-interpretation. If the [] cluster is ARB-role – always interpreted as ARB – then one would expect that it never realizes in the syntax. Since it does not optionally – but obligatorily – get the ARB interpretation, it is not optionally – but obligatorily absent from the syntax (127). Notice now, that it is from the properties of that ARB-role that it follows that there are no merging instructions for the [] cluster.

(127) ARB role i.e. [] does not project in syntax

The assumption is fully consistent with the understanding of instances of *arb* that are obligatorily not projected in the syntax, as is the null object construction in English discussed by Rizzi (1986). According to Rizzi, in the null object constructions in English, the internal theta-role will be ‘saturated’ in the lexicon i.e. “will be understood as having the properties defining *arb*”. This saturation applies by the rule in (128). Importantly for our discussion, “if a theta-role is saturated in the lexicon, it is not projected; hence it never reaches syntax” (Rizzi (1986): p. 509).

(128) Assign *arb* to the direct θ -role

Since the application of the LMF involves the creation of the ARB-role in the lexicon (comparable to Rizzi’s (128) in the lexicon), it follows that such a role will never be projected in the syntax.

Finally, the fact that the implicit role in middles is interpreted with +human flavor could be seen as the reflex of the fact that ARB always has +human feature (cf. Rizzi (1986) and Jaeggli (1986b)). As stated by Rizzi (1986), among the collection of features referred to as “arbitrary interpretation” is +human. Recall that this is, indeed, what one needs for the semantics of middles.

4.4.2 Saturation¹⁵⁸

Since it cannot be linked in the syntax, some operation has to apply to the [] cluster. This leads us to the second issue – the fact that the external argument of middles is semantically, but not syntactically active. What I will assume is that the role, whose content has been deleted, is saturated i.e. it is semantically, but not

¹⁵⁸ Be reminded that the label ‘saturation’ is used here as equivalent to ‘variable binding’ as it does not cover only existential closure.

syntactically active. Recall that there are no known thematic restrictions on the operation of Saturation. For instance, in the case of passivization, a variety of thematic roles can be saturated (cf. Marantz (1984)). From this, one can conclude that any thematic role-type can be saturated. Consequently, Saturation applies in the case of the [] cluster (129).¹⁵⁹

(129) middle-read: Sat ([]) [-c-m]

There are also theory-internal arguments that corroborate the assumption that saturation is the only available operation in the case of the ARB-role – the [] cluster. Recall (Chapter 1) that the inventory of operations of the Theta System includes three types of operations: Bundling (as in the case of Reflexivization), Reduction (as in the case of Expletivization) and Saturation (as in the case of Passive). Though the set of verbs that feed reflexivization is not fully defined, we know empirically that the thematic requirement for Bundling is that a verb must have a cluster that – minimally – contains a /+m feature or – maximally – a fully specified [+c+m] (cf. Reinhart and Siloni (2003)). Regardless of whether one takes the presence of a /+m feature or a fully specified [+c+m] cluster as a requirement for Bundling, it should be clear that the [] cluster does not satisfy either of them. Consequently, the [] cluster cannot be bundled with another cluster. The second option is Reduction. The set of verbs that feed Expletivization is defined – only the [+c] role can be reduced. This entails that the [] cluster cannot be reduced since it is not a [+c] cluster. Consequently, one is left with the option of Saturation, for which, as already said, there are no known thematic restrictions.

Let us further explore the properties of middle-saturation and the ARB-role. In order to achieve this, I will make a brief detour into Chierchia's analysis of *si* constructions. In tackling the issue of impersonals in Italian, Chierchia (1995a) proposes that, there are two types of saturation: ordinary saturation (i.e. existential closure) and ARB-saturation. Both passive saturation and ARB-saturation bind the variable by existential closure.¹⁶⁰ However, unlike regular saturation, ARB-saturation introduces a sortal restriction to humans that is both syntactically and semantically projected in the form of a distinguished index. The analysis of the impersonal construction in Italian (130a) is given in (130b).

¹⁵⁹ The notation for saturation operations is suggested by Alexis Dimitriadis

¹⁶⁰ In the spirit of DRT, Chierchia further proposes that existential disclosure applies freely in the domain of quantificational adverbs. The quantificational adverb *always* first discloses and then closes x_{arb} .

(i) Se x_{arb} è alti , si è sempre anche biondi
If one is tall, one is always blond

(ii) $\forall x_{arb}$ [tall (x_{arb})] [blond (x_{arb})] (Chierchia (1995a))

(130a) *Si canta*
 ‘People sing’

(130b) $SI(\text{sing}) = \exists x_{\text{arb}} [\text{sing}'(x_{\text{arb}})]$
 $x_{\text{arb}} = \text{a variable restricted to ranging over groups of humans}$

As seen in (130b), Chierchia interprets *si* (i.e. the functor *SI*) as the operation of arbitrary saturation. *Si* can apply to any type of VP (two-place relations or 1-place properties). Just like the passive operation, *si* existentially closes the argument. Unlike the passive operation, the functor *SI* introduces a sortal restriction to humans that is both syntactically and semantically projected in the form of a distinguished index – “arb”. Here I adopt the core of Chierchia’s (1995) operation of Arbitrarization. The main difference lies in the treatment of the clitic *si/se*. Namely, on the approach here, the operation of Arbitrarization is independent from the presence of *si/se*. As I will argue in Chapters 5 and 6, the clitic *si/se* is a Case absorber (cf. also Reinhart and Siloni (2003)). Divorced from *si/se*, Chierchia’s arbitrary saturation is given in (131).

(131) $\exists x_{\text{arb}} [P(x_{\text{arb}})]$

The core idea of Chierchia relevant for our discussion here is that - unlike the variable introduced by ordinary saturation - the variable introduced by Arbitrarization (here either existential or generic) comes in with a built-in domain restriction, indicated by a special subscript “arb”. With the application of ARB-saturation, the set of individuals is restricted pragmatically and contextually - as it is in the case of passive saturation- with the special properties of *arb* being that a) it cannot be made referential and b) it ranges over groups of humans (+human).¹⁶¹ Thus, the ARB-saturation (either generic or existential) introduces a special type of variable - x_{arb} or index *arb*, which ranges over groups of humans. As will be argued in Chapter 5, this is essentially what happens in middles in syntax languages. In lexicon languages, Arbitrarization, in effect, applies in the lexicon. What I propose here is that the variable of the ARB-role is x_{arb} . Consequently, by creating the ARB-role, arbitrarization applies to a cluster. This, in turn, is desirable since the level at which the operation applies - the lexicon – contains only clusters.

Recall now (cf. Chapter 3) that the genericity of middles follows from the presence of Gen in the LF of middles. I further assume that it is the presence of the [] cluster that enforces Gen. In other words, the only operator that can bind the variable of a [] is Gen (132). I will return to this assumption in a bit more detail 4.4.2 of this Chapter and in Chapter 5. For the time being, it suffices to say that since we know of no other instance that utilizes the [] cluster but middles in lexicon languages, and since middles in lexicon languages never give rise to eventive interpretation, our working assumption is that the presence of the [] cluster necessarily enforces the

¹⁶¹ The reader is referred to Chierchia (1995a), where a cluster of properties of *si*-constructions is derived from the properties of x_{arb} .

presence of Gen, rather than any other operator. In other words, the assumption is that the only operator that can bind the variable of the [] cluster is Gen. Since Gen unselectively binds any variable in its scope, it follows that both the variable of the implicit role and the event variable are bound by Gen.

(132) middle-read: Gen ([]) [-c-m]

Thus, appealing to the [] cluster, one can account for the two key characteristics of middles we have identified so far; middles are generic statements that have an implicit (semantically, but not syntactically present) external role that is interpreted as ARB. As argued here, the creation of the [] cluster ensures that both of these requirements for middles are met.

Before we move to the interpretation of middles however, we have to address the question of what happens to the notional object of middles. The question that now arises is what happens to the [-c-m] role in (132) with respect to the Marking Procedures. The question, of course, is directly related to the issue of whether middles are unergative or unaccusative. How can the unergativity of middles be derived? Recall first that indices are assigned based on the value of a cluster. A cluster can have a 'plus' value, a 'minus' value, or a 'mixed' value. Consequently, one could say that if it has a value, a cluster is defined. The property of "being defined" can in turn be applied to the grid as a whole. Namely, one could say that the grid is defined if the clusters of a verb are defined. If we stipulate that the Marking Procedures apply only to defined grids: grids where every cluster has a value, then it could be said that the Marking Procedures do not apply in (132) since - for the marking procedure to apply - all the verb's clusters need to be defined. As a consequence, no indices are assigned to an entry with a [] cluster. In other words, not just that the [] cluster does not get any index, but [-c-m] cluster is not assigned an index either. For such an analysis, something like the bolded clause in (133) needs to be added.

(133) Marking Procedures
 Given an n-place-entry, $n > 1$, **where all the verb's clusters are defined (have a value):**
 Mark a [-] cluster with index 2.
 Mark a [+] cluster with index 1. In the entry includes both a [+] cluster and a fully specified [α , /-c], mark the verb with ACC feature.

Notice that although the bolded clause in (133) may appear as a stipulation it does not strike one as really *ad hoc*. The [] cluster will never be projected in the syntax. Consequently, assuming that the rules (Marking Procedure) that, in effect, tell syntax how to handle the clusters do not count the cluster that can never be realized in the syntax sounds reasonable. Notice that if Marking Procedures do not count the [], the grid of middle-read, in effect, gets the same treatment as a one-place entry with a theme-role. If this is the right analysis, then the derivation of a middle-output

(134a) proceeds along the same lines as the derivation of Theme-unergatives like *glow*. Since the [-c-m] cluster is not assigned index 2, it is free to merge externally since nothing rules this out (123a). In Chapter 5, one further argument will be presented to corroborate the unergative derivation of middles in lexicon languages.

(134a) middle-*read*: [], [-c-m]

Notice, importantly, that if future research is to bring empirical evidence – showing exclusively and conclusively that middles in lexicon languages are syntactically unaccusative and not unergative entries - the analysis here does not collapse. It simply means that the [] cluster counts for the Marking Procedures in so much as the Marking Procedures still *see* the [] cluster and consequently treat the middle-entry as a n-place entry, n>1. Let us, then, spell out this unaccusative option. Since the middle-entry is an n>1 entry, the Marking Procedures apply. The [-c-m] cluster has a value. It is a [-] cluster. Consequently, the Marking Procedures have a way of tackling it. The index 2 - the instruction to merge internally - will be assigned to the [-c-m] (134b).

(134b) middle-*read*: [], [-c-m]₂

The internal argument will necessarily move to Spec, IP/TP for Case/EPP reasons. Such a derivation of middles yields them syntactically unaccusatives.

4.5 Lack of Morphological Marking: ACC Feature

Let us continue our discussion by deriving the third property of middles in lexicon languages – the lack of morphological marking. To answer this, we need to focus now on the ACC feature. By (121), the ACC feature is assigned if the entry contains a fully specified [α , /-c] and a [+] cluster. The middle-entry contains a fully specified [α , /-c] – [-c-m]. It does not, however, contain a [+] cluster. Namely, the content of the base-entries' [+] cluster (e.g. the [+c+m] cluster of *read*) has been deleted to yield the null cluster - []. As a consequence of this content-deletion, the verb is not marked with the ACC feature. Bear in mind that middles in Dutch and English, unlike passives in Dutch and English, have no special morphology to absorb the ACC case. The claim here is that no special morphology is needed, since there is no case to be absorbed. In English/Dutch-type of language, the middle verb is not marked with ACC feature to start with. This, of course, is true for both (134a) and (134b); regardless of whether the notional object of middles merges internally and then moves (for Case/EPP reasons) or whether it merges externally.

As hinted at in section 2, the point regarding the absence of the ACC feature in the English/Dutch type of language is strikingly obvious when Dutch reflexives (135a) are compared to Dutch middles (135b).

(135a) Peter wast **zich**.
Peter washed
'Peter washed himself.'

(135b) Dit hemd wast goed.
'This shirt washes well.'

Let us explore the issue a bit deeper. Recall first that the indecisiveness to endorse the auxiliary test as conclusive with respect to nonmovement analysis of middles was rooted in the fact that there are alternative analyses to the phenomenon of auxiliary selection. Among them, I mentioned Reinhart and Siloni's (2003) work that relates auxiliary selection to Case. Their work is not focused on the question of auxiliary selection *per se*, but on the question of when the application of an arity operation affects the auxiliary selection. This question is exactly what interests us here. In the Theta System, the arity operations (i.e. reductions and saturations alike) affect the theta-grid of a verb as well as the ACC feature of the verb. Namely, arity operations are said to reduce the ACC feature of the verb. Reinhart and Siloni (2003) note that in some languages in which Reflexivization operates in exactly the same way e.g. French, Italian, and Spanish – there is a variation with respect to the choice of the auxiliary with the reflexive output. Namely, whereas Italian and French opt for *be*, Spanish opts for *have*. The examples in (136) are from Reinhart and Siloni (2003).

(136a) Roberto si è lavato (Italian)
Roberto SE is washed

(136b) Roberto s'est lavé (French)
Roberto SE is washed

(136c) Roberto se ha lavado. (Spanish)
Roberto SE has washed

Even with respect to Expletivization, which, recall, is a uniform operation that cross-linguistically takes place in the lexicon, languages do not exhibit the same auxiliary selection; whereas French and Italian use *be*, Spanish uses *have* (137).

(137a) La puerta se ha cerrado (Spanish)
The door SE has closed
'The door closed.'

- (137b) La porta si è chiusa (Italian)
 the door SE is closed
 ‘The door closed.’
- (137c) La porte s’ est fermée (French)
 the door SE is closed
 ‘The door closed.’

In the light of data like the above, Reinhart and Siloni (2003) propose that although operations like Reflexivization and Expletivization are uniform across-languages with respect to its effect on the theta-grid, the effect it has on the Case system with respect to ACC reduction differ across languages for independent reasons. The first question that arises is how reasonable is it to assume that the Case-reduction is not uniform across languages. The answer to it is that it is reasonable to make such an assumption since the Case systems are not identical cross-linguistically. What Reinhart and Siloni (2003) argue is that in some languages Case is “stronger” than in others, where “stronger” means that after an arity operation (i.e. either reduction or saturation) has applied, there is a residue of ACC case that needs to be checked. After the arity operation has applied, in languages that have strong ACC, a dummy Case checker is needed to check the case residue. Going back to the data in (136) and (137), Reinhart and Siloni (2003) argue that ACC in French and Italian is strong, whereas in Spanish it is not. In (137a), after Expletivization applies, the ACC is reduced and there is no residue to be checked. The auxiliary *have* is employed. In Italian and French, since the ACC Case feature is strong, there is always a structural residue of the ACC case to be checked. Whenever there is a residue to be checked, Reinhart and Siloni (2003) propose that the auxiliary selected is *be* (137b) and (137c).¹⁶²

For Dutch, Reinhart and Siloni (2003) propose that the ACC feature is strong. Consequently, after the application of arity operations, a dummy Case checker is required to check the structural residue of the ACC features. In the case of Expletivization, Dutch behaves just like Italian and French. An abstract Case absorber in the inflection projection is needed, which in turn, just like in Italian and French triggers the choice of auxiliary *be*. In the case of reflexives, the auxiliary *have* is used, in combination with *zich*. On Reinhart and Siloni’s account, in order to check the residue of the ACC, Dutch employs a referentially deficient *zich* (135a). After *zich* has taken care of the residue of the ACC feature, since there is nothing more to check, the auxiliary selection is *have*. Though, the Case feature in Dutch is strong, middles do not require *zich* because there is no ACC feature on the middle to start with. Since there is no structural residue to be absorbed, middles in Dutch come in unmarked. Thus, the answer to the puzzle of why there is no marker in Dutch middles is that middles do not require a dummy Case checker since there is not Case to start with.

¹⁶² For the sake of presentation, I am glossing over the details of the proposal. Namely, what Reinhart & Siloni (2003) propose is that *be* is the reflex of some checking procedure and the ACC residue is most likely handled in some inflectional projection.

4.6 Interpretation of Middles

The sentence in (138a) is understood generically, which – as argued in Chapter 3 - is formally represented in terms of the presence of the generic operation in the LF of (138a). Recall also that according to the quantificational analysis of generics - which I have adopted here – generics are represented in logical form by a tripartite structure which consists of a generic operator, a restrictive clause, and a matrix. What is described by the matrix generally holds for the restrictor of a generic sentence. Recall that the partitioning of middles is determined by focus. I take that the interpretation of (138a) is “it is a generic property of events of reading *Tristram Shandy* by any arbitrary person that they are easy events for that arbitrary person”. The most salient reading of (138a) is the one where the adverb *easily* is the focus (cf. Chapter 3: section 2.3.1 for discussion). Consequently, it is the adverbial that ends up in the matrix, whereas the topic (*Tristram Shandy*) and the background end up in the restrictor (cf. Krifka et al (1995)). Recall now that the [] cluster requires Gen to bind its variable and that Gen binds any free variable in its scope. It follows then that both the x_{arb} and the event variable are bound by Gen, which – given the interpretation of middles - is exactly the right result. Consequently, the logical form of (138a) is given in (138b).

(138a) *Tristram Shandy* reads easily.

(138b) Gen e, x_{arb} [reading (e) & [-c-m] (e, *Tristram Shandy*) & [] (e, x_{arb})] [easy (e, x_{arb})]

To sum, the LMF involves the creation of the ARB-role i.e. the [] cluster. The creation of this role directly accounts for crucial properties of middles; a) the presence of the implicit role that is interpreted as ARB, b) the presence of Gen c) the lack of morphological marking with middles in Dutch and English, and d) the restriction on the co-realization of clusters of the base entry. Finally, with respect to the syntax of middles, the unergativity of middles in lexicon languages can also be explained. Since the [] cluster can never be linked in the syntax, the assumption is that the Marking Procedures do not apply to entries that contain it.

4.7 *Laten*-Middles

In the last two sections of this Chapter I would like to briefly address two constructions that are argued to be exhibited by Dutch and not English: a) *laten let*-middles and b) the so-called adjunct middles.

An example like (139b) illustrates the *laten let*-construction. Since examples like (139b) exhibit the core characteristics of middles, they deserve to be taken into our consideration of middles. Namely, just like the “regular” middles in Dutch (139a),

let-middles like (139b) are generic statements, typically with the modal flavor of capability and an arbitrary implicit external role. Also, just like in regular middles, syntactically, only the notional object is syntactically realized.

- (139a) Kikkerbiljetjes eten gemakkelijk.
Frog-legs eat easily
- (139b) Kikkerbiljetjes laten zich gemakkelijk eten.
Frog-legs let zich easily eat
'Frog-legs eat easily.'

If regular middles like (139a) and *let*-middles like (139b) are semantically equivalent, one would expect something like (140) to be a contradiction. This prediction is borne out.

- (140) *Dit boek leest gemakkelijk maar het laat zich niet gemakkelijk lezen.
the book reads easily but it (=the book) lets ZICH not easily read

There are, however, differences between the two types of middles in Dutch. For a detailed account of *laten*-middles, the reader is referred to the work of Ackema and Schoorlemmer. Crucially for our discussion, Ackema and Schoorlemmer (2003) argue that unlike "regular" middles, *let*-middles are created in the syntax. If *laten*-middles are derived in the syntax, this gives us an opportunity to test the criteria proposed in subsection 4.1 of this Chapter for their membership in syntactic or the lexicon middle formation. As argued in 4.1 if the middle formation operation takes place in the syntax, the middle is not expected to exhibit a) restrictions with respect to the type of verb that can feed the middle derivation, b) no Cluster Distinctness Violation should be observed, and c) the Case-absorbing morphology should be present in the derivation. These predictions are borne out. Namely, as seen in (141), *let*-middles do not pass any of the three criteria for the LMF. The example in (141b) is taken from Everaert (1990).

- (141a) There is no restriction on the type of verb that can participate in *let*-middle construction (cf. also Everaert (1986)).

e.g. Deze regel laat zich niet gemakkelijk begrijpen.
this rule lets zich not easily understand
'It is easy for one to understand this rule.'

- (141b) No Cluster Distinctness Constraint violation is observed in *let*-middles

e.g. Het verhaal laat zich gemakkelijk aan de kinderen voorlezen
the story let zich easily to the children read
'It is easy for one to read this story to children.'

(141c) Presence of the case absorbing morphology – presence of *zich*

e.g. Dit boek laat *zich* gemakkelijk lezen.
This book reads easily.

Recall that the characteristics absent in the examples in (141) are argued to be the defining criteria for a membership in the LMF class of languages, since they arise from the way the LMF operates. Recall also that I have argued that the absence of these characteristics indicates that middles are formed in the syntax. It follows then that *laten*-middles are formed in syntax. This is, indeed, the analysis proposed for *laten*-middles by Ackema and Schoorlemmer (2003). Since the LMF Visibility Requirement is valid only for the lexicon middle formation, *let*-middles are not expected to be restricted to verbs that have a [+c] role (141a). Since syntactic operations cannot manipulate the feature content of a cluster, the content of the external role of *voorlezen* “tell” in (141c) stays intact - [+c+m]. It follows then that no Distinctness Violation is observed with *let*-middles either (141b). Finally, since the manipulation of the content of the implicit role has not taken place, ACC will be marked on the verb. Just like in other cases (e.g. reflexive outputs) where *zich* is needed to absorb the structural case residue with the application of an arity operation, with the application of saturation in *laten*-middles, *zich* is needed to absorb the case (141c).

Another important difference between regular middles in Dutch and *laten*-middles identified by Ackema and Schoorlemmer is that *let*-middles allow temporal adverbials illicit in regular middles. It has been pointed by Ackema and Schoorlemmer (2003) that regular middles in languages like Dutch are different from *let*-middles in that whereas regular middles can never be episodic, *let*-middles can. Recall that *in X time* adverbials are licensed only with eventive, and never with stative outputs. The example in (142) is taken from Ackema and Schoorlemmer (2003).

(142) Het probleem liet zich in tien minuten oplossen.
the problem let ZICH in ten minutes solve

Note first that *let*-middles are not unique in this respect. As will be argued in Chapter 5, SC and Italian, for instance, behave in exactly the same way. Recall that just like *let*-middles, SC middles do not exhibit any of the three requirements for the LMF type of language. Recall (Chapter 3: section 2.1.3) that the *se*-construction in SC can receive a middle – quasi-universal (143b) as well as a passive - eventive (143a) interpretation. Just like with the *laten*-construction, though the generic interpretation is no longer available for (143a), it is a perfectly grammatical output.

- (143a) *Mol Flanders* se upravo čita.
Moll Flanders SE right now reads
 ‘*Moll Flanders* is being read at the moment/right now.’
 (episodic)
- (143b) *Mol Flanders* se lako čita.
Moll Flanders SE easily reads
 ‘*Moll Flanders* reads easily.’
 (generic)

As already argued for middles in general, I take it that the generic reading of *let*-middles boils down to the presence of Gen. If Gen is present in the logical form of a *laten*-construction, it will have a quasi-universal – generic interpretation. Just like I will argue for SC and Italian, the episodic reading follows from the presence of the existential operator in the logical form of a *laten*-sentence. Consequently, in cases like (142), the event variable is existentially bound and the resulting output is a particular sentence. This means that a *let*-construction is, in principle, ambiguous between the episodic and quasi-universal reading, which are formally represented by the presence/absence of Gen in the logical form of a *laten*-sentence. The fact that – just like in SC – the implicit role is interpreted as arbitrary with +human flavor in (143) follows from the fact that in either case (i.e. existential closure or variable-binding with Gen), the saturation is ARB – the variable introduced by ARB-saturation comes in with a built-in domain restriction, indicated by a special subscript “arb” that ranges over groups of humans as proposed in Chierchia (1995a). Thus, in order to avoid the confusion, one should, perhaps label (142) and (143a) as ARB-passives, whereas the label ‘middle’ should be reserved for (139b) and (143b).

Importantly for our discussion here, this kind of variability is never allowed with “regular” middles in Dutch and middles in English (cf. the discussion in Chapter 3: sections 2.1.1 and 3.1.3). The presence of the adverbial of specific time reference will not result in an acceptable output (144b) and (145b). The important thing to note about (144b) and (145b) is not that they are no longer generic, but that they are completely unacceptable.

- (144a) The dress buttons.
- (144b) *The dress is buttoning at the moment
- (145a) This manuscript reads easily.
- (145b) *This manuscript is reading easily at the moment.

Recall further (cf. chapter 3: section 2.1.1) that ‘regular’ middles in Dutch and middles in English can sometimes occur in the progressive. Importantly for our discussion, even when they occur in the progressive, they are argued not to be eventive (cf. Roberts (1985), Bland (1988), Fagan (1992) and Ackema and Schoorlemmer (2003), to name just a few). Since progressive middles are not

eventive, they are exactly predicted to be ungrammatical if they contain an adverbial expression like *at the moment*.

(146a) This manuscript is reading better every day.

(Fagan (1992))

(146b) Bureaucrats are bribing more than ever in Reagan's second term.

(Roberts (1985))

We know that the fact that middles receive generic interpretation is due to the presence of Gen with either lexicon or syntactic middles. Since generic statements are stative, the fact that generic statements are resilient to appearing in the progressive follows from it (cf. Chapter 3: section 2.1.3). Notice, however, that this does not explain why the middle-predicate in Dutch and middles English cannot be used to form particular sentences *on a par* with the *laten*-construction in Dutch or *se*-construction in SC. I have already offered a possible explanation for it. Namely, under the assumption that the presence of the [] cluster enforces Gen, one can account for the fact that "regular" middles in Dutch and middles in English can never get an eventive interpretation. Since no manipulation of the cluster occurs with syntactic middles, the variable of the intact [+c+m] of *vorlezen tell* and the event variable of a *laten*-sentence can be bound either generically (139b) or closed existentially (142).

4.8 Adjunct-Middles

The so-called adjunct-middles are attested in Dutch, but are argued not to exist in English. Some examples of adjunct middles from Ackema and Schoorlemmer (2003) are given in (147).

(147a) Deze schoenen lopen prettig.
these shoes walk comfortably

(147b) Deze naalden breien lekker.
these needles knit nicely

(147c) Deze stoel zit prima.
this chair sits nicely

It has been argued in the literature (cf. Ackema and Schoorlemmer (2003)) that these adjunct-middles are true middles. Ackema & Schoorlemmer's conclusion about their

status seems to be warranted.¹⁶³ From the point of view of the syntax and semantics that we have identified for middles, examples like (147) seem to pattern with the regular middles. Namely, though syntactically intransitive, they have two semantically active roles. The implicit role is interpreted as *arb*. They are generic statements that ascribe properties to entities (e.g. *deze schoenen*, *deze naalden*, and *deze stoel*, respectively).

The property that looks unexpected with them as well as the reason why they got their name lies in the fact that the surface subjects look like adjuncts, rather than arguments. Namely, the notional objects in (147) correspond to PPs in (148).

- (148a) *Ze loopt gemakkelijk in deze schoenen.*
she walks comfortably in these shoes
- (148b) *Ze breit altijd met deze naalden*
she knits always with these needles
- (148c) *Ze zit altijd in dezelfde stoel.*
she sits always in the same chair

(Ackema & Schoorlemmer (2003))

I concur with Ackema and Schoorlemmer (1994), (2003) that appearances here are deceiving. Following the work of Hornstein and Weinberg (1981) and Neeleman (1997), Ackema and Schoorlemmer (2003), argue that the PPs in (148) are argument PPs, not adjunct PPs.¹⁶⁴ There are several tests in the literature that help one distinguish argument PPs from adjunct PPs. Hornstein and Weinberg (1981) and Neeleman (1997) argue that preposition stranding is allowed with argument PPs, and not with adjunct PPs. Based on the preposition stranding test, the PPs in (148) behave like arguments, rather than like adjuncts (149).

- (149a) *Welke naalden breide je mee?*
which needles knitted your with
- (149b) *Welke stoel zat je in?*
which chair sat you in

(Ackema & Schoorlemmer (2003))

Contra the behavior of the PPs in (148), Ackema & Schoorlemmer show that true adjuncts (150) neither allow for middle construction (151), nor do they allow for preposition stranding (152).

¹⁶³ For an in-depth elaboration of “adjunct-middles”, the reader is referred to Ackema and Schoorlemmer (1994), (2003).

¹⁶⁴ Recall the discussion in Chapter 3.

- (150a) *Ze breit altijd met een muziekje op*
she knits always with a music-diminutive on
- (150b) *Ze zit altijd voor de tv.*
she sits always in-front-of-the TV
- (151a) **Een muziek breit lekker.*
a music-diminutive knits nicely
- (151b) **De tv zit het best.*
the tv sits the best
- (152a) ?/**Welk muziekje breide je mee?*
which music knitted you with
- (152b) ?/* *Welke tv zat je voor?*
which tv sat you in-front-of

Notice further that - though English is generally argued not to have adjunct-middles-Dutch adjunct-middles are quite reminiscent of another so-called adjunct construction available in English: adjunct-passives (cf. Chapter 2). Recall (cf. Jaeggli (1986a)) that the surface subject DP in examples like (153a) is argued not to be a Locative adjunct, but an argument of the verb. Recall also that on Jaeggli's account, the verb and the preposition jointly assign a theta-role in such cases. As also noted by Jaeggli, among other things, the true Locatives cannot participate in the so-called adjunct-passives (153b).

- (153a) This bed was slept in by George Washington.
- (153b) *London was slept in by George Washington.

Notice that just like in English pseudo-passives, Locatives adjuncts in Dutch (154) do not partake in the so-called adjunct-middles (154). The ungrammatical output in (154b) is in sharp contrast with the grammatical (147a).

- (154a) *Ik loop gemakkelijk in Londen[adjunct]*
I walk easily in London.
- (154b) **London loopt gemakkelijk.*
London walks easily

Last but not least, notice that the preposition is absent in the adjunct-middles (147). This seems quite reminiscent of the behavior of semantically vacuous prepositions, which become redundant once the DP is no longer dependent on them for Case reasons. This could further mean that the notional object DP in (147) is not thematically dependent on the preposition at all. If the preposition is not needed in

the middle, it means that its role is purely to check structural case. Since the DPs in (147) have another source for Case i.e. nominative in (147), the preposition is not needed.

Whichever way one analyzes the cases in (147), the DPs in the surface subject position come out as arguments with respect to the verbs in question, not adjuncts. Since there is nothing “adjunct” about middles in (147), they cannot be taken as problematic for lexicon approaches to middles in Dutch and English.

5. Concluding Comments

The aim of this Chapter was to present an alternative analysis of the phenomenon of middles in the Dutch/English type of language. An alternative approach seems warranted since present approaches to middles seem to be burdened with certain conceptual and/or empirical problems. Reinhart’s Theta System was chosen as the theoretical framework since it has proved itself successful in accounting for other phenomena in the domain of derived verbal entries. Furthermore, recall, that the ban on realization of Recipient Goals can only be approached in a system that does not treat thematic roles as primitives, but further decomposes them into features.

The main points of this Chapter could be summed up as follows. Firstly, the characteristics of Dutch/English have been identified and elaborated upon. In the remainder of the Chapter, an attempt was made to provide an exhaustive account for the semantic and syntactic characteristics of middles in Dutch/English type of language. Let us briefly review the main elements of the approach to middles in the Dutch/English type of language. Instead of a constraint like the Affectedness Constraint or the “Actor-constraint”, the proposal here is that the LMF should be constrained by the LMF Visibility Requirement (67) - repeated here as (155).

- (155) LMF Visibility Requirement
A verb is visible to LMF iff its verbal concept contains a [+c] role.

This Requirement accounts in a clear and formal way for the lexical restriction present in languages such as Dutch and English. It defines the set of verbal concepts that disallow the LMF and captures the common denominator such verbal concepts have. It exhaustively defines the set of verbal concepts the LMF can apply to. The LMF deletes the content of a [+c] cluster and creates the [] cluster - ARB-role. As shown in this Chapter, the creation of this role directly accounts for the crucial properties of middles in the Dutch/English type of language: a) the presence of the implicit role and its interpretation as ARB, with +human flavor, b) the presence of Gen - standardly assumed to account for the generic reading of middles (cf. Condoravdi (1989), Krifka et al. (1995), and Steinbach (1998)) and the inability of the middle-verb to appear in particular sentences, c) the lack of morphological

marking (the absence of the Case-absorbing morphology in middles in lexicon languages), d) the restriction on the co-realization of clusters of the base entry, and e) the unergativity of middles in Dutch and English.

In tackling the issue of *let*-middles, I have already touched upon the issue of middles in syntax languages. An account of middles in languages like French, Italian, Polish, and SC is offered in Chapter 5.

Chapter 5

Middles in Syntax Languages

1. Introduction

The sample of languages that are in the focus of interest in this Chapter includes French, Italian, Polish and Serbian/Croatian (SC). For ease of reference, I label these “syntactic” or “syntax” languages, which simply means that the middle formation operation in these languages does not apply in the lexicon, but in the syntax (LF) instead. As already stated in previous chapters, the nature of the illusiveness of middles in “syntax languages” is somewhat different from the illusiveness of the middles in “lexicon languages”. With respect to lexicon languages like English, the existence of the middle has never been questioned. As discussed in Chapter 3, the task in a language like English involves the elimination of the “middle imposters”, like stative unaccusatives, rather than the justification of the existence of the category of the middle.¹⁶⁵ In the literature on middles in Italian, however, one finds accounts that treat the Italian middle as being more similar to the English passive than to the English middle. Our first task, then, is examine the status of what is called the middle in French, Italian, Polish, and SC on a wider range of data with respect to the characteristics that have been identified as the core characteristics of the middle as a category. One would further like to understand why middles in

¹⁶⁵ Stative unaccusatives seem, by far, the most serious imposters. In the literature, one finds examples like (i) and (ii) also treated as middles. I have not discussed them since these are ordinary transitive outputs of [+c]-verbs. There is nothing even remotely “middle” about them. The examples are drawn from Ackema and Schoorlemmer (2003) who share the view that they are not middles. Ackema and Schoorlemmer treat these as “instrumental clauses, with the instrument role realized externally. I do not consider these “instrument clauses”, but ordinary [+ c] verbs in the Theta System whose external role is consistent with Agent, Cause and Instrument interpretation (cf. Chapter 1).

- (i) The key opened the door
- (ii) De zon droogt de tomaten
The Sun dries the tomatoes.

syntactic languages give rise to such controversy. Whereas middles in syntactic languages will be argued to exhibit the characteristics of the middle identified in Chapter 3, I will also argue that differences between middles in lexicon languages and middles in syntactic languages exist. Both the similarities and the differences between the languages under consideration in this study will be summed up here and presented against a broader range of empirical data. As will be argued here, the differences between lexicon and syntactic middles are rooted in the fact that the middle formation operation applies in different modules, which - in turn - abide by different rules. The discussion is followed by a possible answer to why lexicon middle formation is not available in languages like SC. An additional issue that will be addressed in this chapter is the range of the application of Chierchia's (1995) ARB-saturation in constructions other than the middle in syntactic languages.

2. Properties of Middles in Syntax Languages

2.1 The Puzzle of *Si/Se/Się* Constructions

It has already been said that the middle in languages under consideration here is morpho-syntactically indistinguishable from a special type of passive. Apart from copular passive (i.e. a participle preceded by *be*), Romance and Slavic languages also utilize *si/se*-passive. Passive-*si* in Italian is illustrated in (1a) – taken from Lepschy and Lepschy (1977) - and passive-*se* in SC is illustrated in (2a). Middle-*si/se* is illustrated in the examples in (b). The example in (1b) is taken from Cinque (1995). Just like the Italian examples in (1), the SC (2a) and (2b) are strikingly similar. The clitic – *si* in Italian and *se* in SC - marks both of these outputs. The notional object is in the surface subject position as witnessed by the agreement with respect to person and number features between the verb and this argument, which - in both Italian and SC - is obtained only between the verb and nominative DPs. The external argument is not linked in the syntax. It is implicit – present in the logical forms of the derivations in (1) and (2).

- (1a) Questo giornale *si* legge ogni mattina.
This newspaper *SI* read every morning
'This newspaper is read every morning.'
- (1b) Questo tavolino *si* trasporta facilmente.
this table *SI* transports easily
'This table transports easily.'
- (2a) Kuća *se* gradi.
House *SE* builds
'The house is being built.'

- (2b) Mrlje od crnog vina se ne skidaju.
Smudges from black wine SE not clean
'Red wine stains do not clean.'

There is no doubt that the similarities between *si/se* derivations in (1) and (2) are uncanny. Notice now that - as seen in examples in (3) –drawn from Roberts (1985) – it is possible to license an agentive adverb with a *si*-output in Italian (3a) as well as with a SC *se*-output in (3b). Furthermore, purpose clauses – generally illicit to appear with middles in English and Dutch (cf. Chapter 3) – are legitimate with a *si*-output in (3c).¹⁶⁶

- (3a) I bambini *si* lavano **volentieri**. (Italian)
the children SI wash willingly.
- (3b) Kuća se **dobrovoljno** gradi. (SC)
house SE willingly build.
- (3c) I bambini *si* lavano [per far piacere a Maria] (Italian)
the children SI wash to give Maria pleasure.

Consequently, it should not come as a surprise that some authors were led to conclude that the middle in Italian “more closely resembles English passives than does the English middle” (Roberts (1985): 511).

2.2 Similarities between Middles in Lexicon and Syntax Languages

Cinque (1988), (1995), however, successfully argues that the middle in Italian is far more similar to the middle in English than previously acknowledged in the literature (cf. Keyser and Roeper (1984), Roberts (1985)). He points out that the status of middles in Italian is blurred by the fact that - in addition to middle-*si* - Italian also has passive-impersonal *si*. For that reason, Cinque (1988) resorts to testing the properties of middle-*si* in untensed contexts like (4). As seen in (4a), Cinque’s middle-*si* is only acceptable with generic time reference. As seen in (4b), the middle-*si* does not license agentive adverbs.

- (4a) *? Il sindaco ha il vantaggio di essersi già corrotto ieri.
the mayor has the advantage of already being bribed yesterday
- (4b) *Il libro ha il pregio di vendersi volutamente.
the book has the merit of selling voluntarily

¹⁶⁶ Following the discussion in Chapter 3 regarding purpose clauses, I am presenting them here purely for the sake of completeness of the data.

Furthermore, as seen in examples (5) drawn from Cinque (1988), middle-*si* does not allow control into purpose clauses and fails to license the *by*-phrase (cf. also di Sciullo (1990) for the same conclusion regarding Italian middles).¹⁶⁷

- (5a) Quell'uomo politico hai il vantaggio di potersi corrompere facilmente [*per dimostrare le propria influenza].
that politician has the advantage of *si* bribing easily (to show one's influence)
- (5b) Questo vestito ha il vantaggio di potersi laver *da tutti
this suit has the advantage of *si* being able to wash by everybody

Thus, Cinque's (1988) careful separation of middle-*si* from other *si*-outputs that he labels impersonal-passive *si* has the right effect of rendering English and Italian middle much more similar than assumed in Keyser and Roeper (1984) and Roberts (1985).

To account for the contrast between (6) and (7), Cinque (1988), (1995) postulates that the clitic *si* has a dual status: an argumental use and a non-argumental use. Cinque interprets the contrast between the data like (6) and (7) as being rooted in the presence of argument-*si* in impersonal-passive constructions and the absence of it in middles in Italian.

- (6a) Questi appartamenti si vendono volutamente occupati.
these apartments *SI* sell deliberately occupied
- (6b) Quell' uomo politico si può corrompere (facilmente) per dimostrare la propria influenza.
that politician *SI* can bribe (easily) to show one's influence
- (7a) Questi appartamenti hanno il vantaggio di vendersi (*voluntamente) occupati.
these apartments have the advantage of *si* being sold deliberately occupied
- (7b) Quell' uomo politico ha il vantaggio di potersi corrompere facilmente [*per dimostrare la propria influenza]
that politician has the advantage of *si* bribing easily (to show one's influence)

¹⁶⁷ As already said, following the discussion in Chapter 3, I will not be use semantic control and the *by*-phrase to diagnose middles. As argued there, the problem with these two tests is not that middles in the languages under consideration here do not pass them, but in the fact that the one is not sure what the tests in question diagnose. It is for the sake of completeness of Cinque's (1988) arguments that I am presenting them here.

Namely, he concludes that impersonal-passive *si* is compatible with agentive adverbs (6a) and can control the subject of a purpose clause (6b) because the former type of construction relies on the argument *si*, whereas middles - as in (7a) and (7b) - rely on the non-argument *si*. This part of Cinque's (1988) analysis has been elaborately criticized by Dobrovie-Sorin (1998) who argues against the existence of [+arg (ument)] *si*. On her account, control configurations differ with respect to the type of controller they allow: some configurations require a syntactically realized controller, others allow control by implicit Agents (cf. also Koster (1984)). Since the control configurations that involve purpose clauses are not instances of syntactic control (cf. also Fellbaum and Zribi-Hertz (1989) for the same conclusion), they cannot be used to corroborate the argument status of *si* in examples like (6). In Chapter 6, I will return to the empirical problems posed by the dual status of the clitic.

Abstracting away from the postulation of the dual status of the clitic, Cinque conclusively shows that the middle in Italian behaves just like its counterpart in English as it fails/passes the same tests as its counterparts in Dutch and English. Another important point of Cinque's (1988), (1995) analysis is that in recognizing the differences between Italian and English middles, following Zubizarreta (1982), (1987), he proposes that the middle construction is syntactic in Italian and lexical in English. As evidence for the different level at which they are formed, Cinque notes that - unlike the middle in English - the middle in Italian "is possible with the verb taking non-affected theme objects, which disallow the middle construction in English" (Cinque (1988): 563). The Italian example in (8) - drawn from Cinque - is illustrative of this type of behavior. Indeed, it is a fairly standard assumption that whereas syntactic processes are productive, lexical processes are restricted.

- (8) Certe lingue hanno la proprietà di impararsi con più facilità di alter.
 certain languages have the property of SI acquiring more easily than others

Bearing these two major points of Cinque's approach in mind, I conclude that the core of Cinque's (1988), (1995) approach to middles does not differ from the core assumptions in this study. Firstly, attempting to show that middles in Italian pass/fail the same tests as middles in English amounts to working under the premise that there is a set of core properties that pertain to the middle as a category cross-linguistically, as argued in Chapter 3 of this study. Secondly, Cinque (1988), (1995) acknowledges that there are differences between middles in languages like English and Italian and that they follow from the different level at which the middle is formed in the respective languages. This is also true of the approach that I have been developing in this study. Namely, as argued throughout this study, the middle formation operation is a parameterizable operation. Thirdly, Cinque identifies that the core of the confusion regarding the status of the middle in Italian arises from the fact that - in addition to the middle-*si* - Italian also utilizes the passive-impersonal *si*. I concur with Cinque on this point as well. Unlike in Cinque (1988), (1995), on the

analysis here, the differences in behavior of various *si/se* derivations do not stem from the different status of the clitic across different *si/se* construction, but follow from the semantics of middles as opposed to the semantics of passives. On the account here, the fact that middles do not license agentive adverbs does not stem from the “absence of [+arg] *si*” with middles, but from the stative nature of middles. The stativity of middles, in turn, can be viewed as a “by-product” of the genericity of middles (cf. Chapters 3 and 4).

Repeated here as (9) are the core properties of middles identified in Chapter 3.

(9) Core Properties of Middles:

- a. Middles are characterizing - generic statements (i.e. ascribing properties to entities, involving quasi-universal reading, typically with a modal flavor of capability or potentiality).
- b. The external role of middles is not linked in the syntax, but it is always present in the semantics and interpreted as ARB with +human flavor.

Let us now check the validity of (9) against a wider range of data in syntactic languages. As already noted, there does not seem to be anything in purely syntactic terms that would help us separate the middle-*si/se* from passive-*si/se*. Furthermore, with both middle and passive-*si/se*, the external role of the input verb is suppressed by the application of the arity operation of saturation. The role cannot be linked in the syntax, but is present in semantics as witnessed by the availability of Instrument phrases with both passives and middles. As seen in the SC examples in (10), both the passive-*se* (10a) and the middle-*se* (10b) license Instrument phrases.

- (10a) Put se gradi nano-mašinama.
road SE builds nano-machines-instrumental
'The road is being built with nano-machines.'
- (10b) Mrlje od crnog vina se lako skidaju belim vinom.
stains from red wine SE easily clean white wine-instrumental
'Red wine stains clean easily with white wine.'

The derivations in (10) are marked with the clitic *se*, whose role is to absorb the offending ACC feature. The absorption of ACC triggers the movement of the internal argument to the Spec, IP position as in (11).^{168 169}

- (11) [IP DP [I' SE [VP [V' V t]]]]

Consequently, I conclude that there is no special morpho-syntax for middles in languages like SC that differentiates them from passive-*si/se*. The Instrument test – helpful in distinguishing stative unaccusatives from middles – will not be helpful either since both the middle *si/se/się* and the passive *si/se/się* have a semantically active external role.

Let us then resort to Cinque's diagnostics of testing the *si/se* construction in an untensed context. As seen in (12), French *se* in an untensed context behaves *on a par* with Cinque's *si* in an untensed context. As shown in (12a), it disallows agentive adverbs like *intentionally* and *deliberately* (12b). Secondly, whereas it licenses adverbs of generic time reference (12c), it is ungrammatical with adverbs of specific time reference (12d).¹⁷⁰

- (12a) Cette voiture a la propriété de se conduire de manière sportive.
this car has the property to SE drive in manner sportive

¹⁶⁸ The representation in (11) depends on one's inventory of functional projections. For ease of exposure, I am ignoring the inner structure of the IP (i.e. TP, AgrSP, and NegP). Unless relevant for the discussion, I will be opting for the 'simplified' representation as in (11). The precise structural position of the clitic is not the in focus of this inquiry and I leave it for further research. What we will be exploring here is the role of the clitic across different derivations that are marked with its presence. Its structural position is given as standardly assumed in the literature (cf. Cinque (1988) for Italian and Zribi-Hertz (1982) for French). Alternatively, the clitic could be base generated within the VP (cf. Kayne (1975) and Manzini (1983) (possibly on the verb itself) and then moved to I as proposed in Cinque (1995)). The reader will also notice that I am resorting to a more traditional motivation for movement. An alternative is, of course, that the movement is triggered by the EPP feature, not for Case reasons. On either account, the important thing for our discussion is to notice that both middles and passives share the common – unaccusative syntax.

¹⁶⁹ For ease of reference, when referring to *si/se/się* I use the cover label "SE", which should be understood as a cover-label for the varying realization of the Case-absorbing clitic across the languages under consideration here.

¹⁷⁰ Note in passing that just like the Italian middle, the French middle disallows licensing of purpose clauses (i).

- (i) *Cette voiture avait la propriété de se conduire de manière sportive
[pour frimer]
This car had the property to SE drive in the manner sportive in+order
show off

With respect to the licensing of *by*-phrases, French seems to behave like Polish and SC in disallowing them regardless of the type of *se*-construction.

- (12b) *Cette voiture a la propriété de se conduire intentionnellement de manière sportive.
this car has the property SE drive intentionally in manner sportive
- (12c) Cette voiture avait la propriété de se conduire de manière sportive au vingtième siècle.
this car had the property to SE drive in the manner sportive in+ the 20th century
- (12d) *Cette voiture avait la propriété de se conduire de manière sportive hier soir.
this car had the property to SE drive in the manner sportive yesterday evening

When applied to SC, Cinque's test gives the same results for the middle-*se* in this language. The outputs like the ones in (13) do not admit either adverbs of specific time reference (14a) or agentive adverbs (14b).

- (13a) činovnici su imali osobinu [da su se lako potkupljivali]
bureaucrats had the characteristic that are SE easily bribed
- (13b) Ova haljina ima osobinu [da se teško pere]
this dress has the characteristic that SE with difficulty wash
- (14a) *činovnici su imali osobinu [da su se juče lako potkupljivali]
bureaucrats had the characteristic that are SE yesterday easily bribed
- (14b) *Ova haljine ima osobinu [da se namerno teško pere]
this dress has characteristic that SE deliberately with difficulty wash

As evident from the glosses in (13) and (14), there is one important difference between the SC data in (13) and the French data in (12). Namely, SC opts for finite *da* "that"-clauses, rather than infinitival clauses in (13). Since *se* in (13) does not occur in a non-finite environment, there must be something other than non-finiteness that makes agentive adverbs (14a) and adverbs of specific time reference (14b) illicit. The argument here is that it is the construction *X has a property/characteristic* itself that disambiguates between the possible readings of a SE-construction by enforcing the characterizing, generic reading. A number of such constructions that enforce generic reading are noted in the literature. Constructions in (15) drawn from Krifka et al. (1995) are but a sample of them.

- (15a) John has an inclination to smoke a pipe.

- (15b) Sue has the disposition/is disposed to get the flu in the winter.

What the construction *X has a property/characteristic* does is disambiguate among possible readings of a SE-construction by enforcing the generic reading and disallowing a particular reading. Consequently, regardless of the finiteness of the environment SE finds itself in – on a generic reading – adverbials that are incompatible with the stative nature of generic sentences should be automatically excluded. Again, this corroborates the conclusion reached in Chapter 3 that the middle is a semantic category, whose core characteristic is that it is a generic statement. Consequently, if one controls a SE output for the middle – generic – reading, a potentially ambiguous SE-construction in a tensed context is predicted to disallow adverbs of specific time reference, since generic sentences are aspectually stative. The opposite should also hold. Namely, if it is controlled for passive - particular reading, adverbs that are compatible with the sentences that describe particular events in time are predicted to be legitimate. Let us illustrate these points on SC. SC is a nice testing ground since a copular passive construction cannot be used to describe an ongoing event in the present. A SE-construction must be used instead. Thus, a sentence like (16a) is, in principle, ambiguous between the generic and a particular reading (i.e. can be used to describe a particular event). Under the generic reading, however, adverbials of specific time reference such as *at the moment* are rejected by native speakers. If it is used to describe a particular event in time like the ongoing event of removing/cleaning a red wine stain (as a particular sentence), the presence of such adverbials is legitimate. Crucially, the output in (16b) is grammatical but it has nothing to do with the characterizing, generic reading of middles. Finally, notice that the same contrast is observed when the *X has a characteristic* construction is used (16c). Since the construction enforces a generic reading, *at the moment* is not licensed to occur (16d).

- (16a) Mrlja od crnog vina se skida belim vinom.
red wine stain SE cleans/removes with white wine.
- (16b) Mrlja od crnog vina se **upravo** skida belim vinom.
'**At the moment**, a red wine stain is being cleaned/removed with white wine.'
- (16c) Mrlja od crnog vina ima osobinu da se skida belim vinom.
red wine stain has characteristic that SE cleans/removes with white wine.
- (16d) *Mrlja od crnog vina ima osobinu da se **upravo** skida belim vinom.
red wine stain has characteristic that SE at the moment cleans/removes with white wine.

Consequently, with respect to syntax languages, it is the semantics of middles that gives us some leverage in distinguishing them from passive derivations. Middles are

generic statements. As was argued in Chapters 3 and 4, generic statements are aspectually stative. The stativity of middles follows from the fact that the Gen operator binds the event variable in the middles. Unlike middles, passives can be eventive. This follows from the fact that the event (situation) variable in passives is bound by the existential operator. A direct consequence of the stativity of middles and eventivity of passives is that middles are predicted to be incompatible with specific time reference whereas passive-*se* is expected to be compatible with specific time reference. To further illustrate the difference between the passive and middle-*se*, let us refer to Progovac's (1997), (1998a) account of the event pronominal *to* in SC (recall the discussion in Chapter 4: 3.4). One of its three uses is the "deictic *to*" (17a). In this referential use, "*to* refers deictically to an event/scene" (Progovac (1997): p. 80).¹⁷¹ In simple terms, for the deictic use of *to*, one needs a particular event to point to. Then, it follows that the deictic *to* can only be used in cases when the event variable is existentially closed. Indeed, Progovac points out that deictic *to* cannot be used in cases of universal quantification over events (17b).¹⁷²

(17a) To Novak pliva.
That Novak swims
'What you see is Novak swimming.'

(17b) *To Marina uvek peva.
That Marina always sings (Progovac (1997))

Going back to our passive/middle-*se*, the deictic *to* is expected not to occur with middles (generic quantification) but is expected to occur with passives (existential closure). As seen in (18), both of these predictions are borne out.¹⁷³ Since middles do not report particular events, *to* is not legitimate in (18a).

(18a) *To se krompir **lako** ljušti. (middle)
To se potatoes **easily** peel

(18b) To se krompir **upravo** ljušti. (passive)
To se potatoes **at the moment** peel
'What you are witnessing is an event of peeling of potatoes.'

¹⁷¹ For an elaborate discussion, the reader is referred to Progovac (1997), (1998a).

¹⁷² Notice, in passing, that one could speculate the stative nature of middles is at the core of why middles generally do not license the purpose clauses (cf. Roberts (1985) for such an approach). As noted in the literature (cf. the discussion in Chapter 3), purpose clauses are as illegitimate with regular statives (i) as they are with middles.

(i) *He knows the answer [in order to annoy the teacher]

¹⁷³ The same behavior observed with middles with respect to *to* is, of course, observed with habitual statements that have an overtly present adverbial such as *usually*.

In terms of languages like Italian and SC, it is the fact that these languages use the same morpho-syntactic construction for a variety of semantic means that blurs the existence of the common characteristics that middles in these languages share with middles in languages like Dutch and English. The middle-SE passes and fails the same tests as the middle in Dutch and English. In both lexicon and syntactic languages, the generic operator binds any free variable in its scope. In the case of both lexicon and syntactic middles, both the event variable and the variable of the implicit role are bound by Gen. Since generic sentences are stative, the middle in both English and SC is incompatible with adverbs of specific time reference.

The second property (cf. (9b)) that middles share across languages is the presence of the implicit argument that is interpreted as ARB with +human flavor. As elaborated in Chapter 4, in lexicon languages, the middle formation operation utilizes the ARB role i.e. the [] cluster. The variable of ARB-role is not x but x_{arb} . In lexicon languages then, the Arbitrarization is of a cluster. This, in turn, is desirable since the level at which the Arbitrarization applies - the lexicon - contains only clusters. The question that now arises is what happens in syntactic languages. Recall that syntax cannot manipulate the content of the cluster. Recall (cf. Chapter 4), however, that following Chierchia (1995a), I assume that variable binding can also be ARB-binding. Unlike the variable introduced by ordinary saturation, the variable introduced by Arbitrarization comes with a built-in domain restriction, indicated by a special subscript *arb*, which ranges over groups of people. I argue that it is ARB-saturation that ensures that the saturated role in syntax languages is interpreted as ARB with +human flavor. Just like with lexicon languages, the fact that Gen binds the situation/event variable ensures that the middle is interpreted with a quasi-universal flavor.

The representation of English (19a) is given in (20a) and of its SC middle counterpart (19b) in (20b).

(19a) *Tristram Shandy* reads easily.

(19b) *Tristram Šendi* se lako čita.

(20a) Gen e , x_{arb} [reading (e) & [-c-m] (e, *Tristram Shandy*) & [] (e, x_{arb})] [easy (e, x_{arb})]

(20b) Gen e , x_{arb} [reading (e) & [-c-m] (e, *Tristram Šendi*) & [+c+m] (e, x_{arb})] [easy (e, x_{arb})]

Both the middle in SC (19b) and the middle in English (19a) are interpreted as “it is a generic property of events of reading *Tristram Shandy* by any arbitrary person, that they are easy events for that arbitrary person”. This is, indeed the desired outputs for both SC and English. Since the middle formation is bound to two different modules in these two languages, it is not surprising that they use different tools to achieve the

same semantic goal. Namely, lexicon languages like English have at their disposal the option of the [] cluster i.e. the ARB-role. Syntax languages like SC cannot utilize cluster manipulation operations. What they have, however, is ARB-saturation (ARB-Genericismization in the case of middles) at their disposal.

2.3 Differences between Middles in Lexicon and Syntax Languages

Having overviewed the shared characteristics of middles in lexicon and syntax languages, let us now focus on the differences between the two. It has already been stated that middles in Dutch and English are formed in the lexicon, whereas middles in French, Italian, Polish and SC are formed in the syntax. As argued in the previous section, Middle Formation in lexicon languages employs the ARB role – the [] cluster, which requires Gen to bind its variable and (since Gen binds unselectively any variable in its scope) the event variable, Middle Formation in syntactic languages employs ARB-Genericismization to achieve the same result. Consequently, though both lexicon and syntactic languages reach the common goal, the operation is executed differently in the lexicon than in the syntax. The same is true of other parameterizable operations. Recall that Reflexivization/Bundling - essentially identification function – is executed differently in the lexicon than in the syntax. Whereas in the lexicon, it bundles two roles by creating a complex role, in the syntax, the two roles are bundled by being assigned to the same argument upon merge. Different types of execution are expected on conceptual grounds. Namely active lexicon and syntax are two distinct modules. This, in turn, means that they abide by different rules and have different tools at their disposal. The operations permitted at a given level are those that are in accord with the laws that hold at that level. As already pointed out in Chapter 1, outputs derived in the syntax behave differently from those derived in the lexicon. As shown by Siloni (2003), a whole range of properties that lexicon and syntactic reflexives exhibit, follows from the fact that Reflexivization is parameterized across languages. As I will argue in this section, the same is true of lexicon and syntactic middles. Namely, just like in the case of reflexives – differences in the behavior of middles in lexicon and syntax languages follow from the level at which the operation applies in a given language. With respect to middles, there are also differences that follow from different executions of the middle formation operation in these two different modules. Let us then review both types of differences.

Recall first that the middle formation operation in the lexicon manipulates the [+c] cluster, creating an empty list i.e. []. Recall that - in terms of co-occurrences of feature clusters - the empty list is indistinct from all other underspecified clusters. It can only co-occur with fully specified clusters. A [-c] cluster is one of the instantiations of the unspecified cluster. Since the middle-entry of verbs like *teach* and *hand* (21a) is qualitatively different from the base-entry of these verbs (21b), the prediction is that the [-c] cluster - which can normally co-realize on the grid of these verbs (22) - cannot realize in the middle derivation. As argued in Chapter 4, this prediction is borne out. As seen in (23a) and (24a), *teach* and *hand* form perfectly

acceptable middles. This is exactly what one would expect. They are visible to the lexicon middle formation operation since they have a [+c+m] cluster on their grid. As seen in (23b) and (24b), the [-c] cluster of these verbs, however, cannot be realized in the middle derivation as it is indistinct from the [] cluster. The examples in (23) and (24) are from Hoekstra and Roberts (1993).

(21a) middle-*teach/hand*: ([], [-c-m], [-c])

(21b) base-*teach/hand*: ([+c+m], [-c-m], [-c])

(22a) Peter taught children_[-c] these ideas

(22b) Peter handed some secrets to Mary_[-c]

(23a) These ideas_[-c-m] teach easily

(23b) *These children_[-c] teach easily

(24a) Secrets hand easily.

(24b) *Secrets hand easily to spies_[-c]

We have already established that utilizing the [] cluster is not an option for syntax languages. Instead of using the ARB-role, the syntactic languages utilize ARB-saturation. What are the predictions with respect to the co-occurrences of clusters of the base-entry in syntactic languages? Since the middle formation operation does not involve the manipulation of clusters in syntactic languages, one would expect all the co-realizable clusters of the input-verb to be able to co-realize in the middle derivation as well. Let us check the validity of this prediction. In syntax languages, one would expect the input three-place verb like *izdavati* “rent” (25a) to allow all the clusters of the base-entry to co-occur in the middle derivation. Since the middle formation operation in SC applies in the syntax, a direct empirical consequence of this should be that the [-c] role can realize in the middle in syntactic languages. As seen in (25c) from SC, this prediction is borne out. All the clusters that are realizable in (25b) are realizable in (25c).

(25a) *izdavati* “rent”: [+c+m], [-c-m], [-c]

(25b) Petar_[+c+m] je izdavao skupe stanove_[-c-m] studentima_[-c].
Peter is rented expensive apartments to students-dative

(25c) Skupi stanovi_[-c-m] se ne izdaju lako studentima_[-c].
Expensive apartments SE not rent easily students-dative

As seen in (26), French, Italian, and Polish pattern with SC in this respect. The underspecified clusters of the input verb – the [-c] cluster in (26a)-(26c) – can be

realized in the middle since no manipulation of the content of the $[/+c]$ cluster occurs in syntactic languages. No manipulation of the content of the $[/+c]$ role can occur since the syntax has no means of manipulating the content of feature clusters.

- (26a) Les longues histoires ne se racontent pas facilement aux enfants_[-c]
 Long stories not SE tell easily to children.
 ‘It is not easy for one/people, in general to tell long stories to children.’
- (26b) Queste idee si insegnano/comunicano ai bambini_[-c] con facilita
 These ideas teach to children with ease
 ‘It is easy for one/people, in general to teach these ideas to children.’
- (26c) Tanie mieszkania latwo wynajmują się studentom_[-c]
 cheap apartments easily rent SIE students
 ‘It is easy for one/people, in general to rent cheap apartments to students.’

The fact that lexicon and syntax languages behave differently with respect to the co-realization of the clusters of the input grid follows from the fact that the middle formation operation is executed differently in these two types of languages.

Secondly, notice that middle derivations like (25) and (26) are marked with the presence of the clitic *si/se/się*. The fact that the middle entry is morphologically marked with the presence of the clitic *si/se/się* can be seen as a consequence of the fact that the middle formation operation in French, Italian, Polish and SC does not involve the manipulation of clusters. Recall first that in lexicon languages like Dutch, a reflexive output requires the presence of the arity operation marker *zich*. The role of the referentially deficient *zich* is to absorb the offending ACC case feature (cf. Reinhart and Siloni (2003)). Recall also that - regardless of the level of its application - Reflexivization/Bundling does not involve manipulation of the content of the clusters. Therefore the ACC marking that would otherwise (i.e. in the absence of any arity operation) be obtained, obtains also with reflexives. Recall further that the structural residue of ACC is taken care of by *zich* (27). Middle derivations in Dutch, on the other hand, are unmarked. In Chapter 4, it was argued that no Case-absorbing morphology in Dutch is needed since there is no ACC on the verb to start with. ACC is not marked on the middle-verb since - unlike the base-entry in Dutch - the middle-entry in Dutch - does not meet the criteria for ACC marking.

- (27) Max wast **zich**.
 Max washed ZICH

Unlike in lexicon languages, the input to middle like in (25c) is the verbal entry given in (25a). The entry contains a [+] cluster and a fully specified [-c,α] cluster. Such an entry meets the criteria for ACC marking. Since one of the arguments does not merge in the syntax, the verb is left with an “extra” Case feature that needs to be checked. Consequently, syntactic languages are predicted to employ some device to get rid of the offending ACC feature. The assumption here is that ACC has to be taken care of by the clitic *si/se/šie*.

Thirdly, recall that lexicon languages exhibit restrictions with respect to the type of verbs that give rise to felicitous middles. As argued in Chapter 4, only verbs with a [+c] role on their grid are visible to the lexicon middle formation operation. Recall that restrictions of this type are typical of lexicon processes. Syntactic processes are standardly assumed to be fully productive. Thus, in syntax languages, the LMF Visibility Requirement is not expected to be operative to start with. Indeed, as seen in (27a) – (27d), the LMF Visibility Requirement is not operative in SC, French, Italian, and Polish.¹⁷⁴ Just like [+c] verbs, [+m] verbs form felicitous middles in syntactic languages. The Italian example in (28c) is from Cinque (1988).

- (28a) Dobra deca se lako vole.
Nice children SE love easily
'It is easy for one/people, in general to love good children.'
- (28b) Les ennemis cruels se détestent facilement.
Cruel enemies SE hate easily.
'It is easy for one/people, in general to hate cruel enemies.'
- (28c) La luce gialla ha il vantaggio di vedersi bene anche nella nebia
più fitta.
Yellow lights have the advantage of si seeing even in the thickest
of fog
- (28d) Małe rzeczy łatwo się gubią.
small objects easily SE lose
'It is easy for one/people, in general to lose small objects'

Notice further that it is quite clear that no manipulation of the cluster targeted by the middle formation operation happens in the syntax since the saturated [+m] role in the middle retains the properties of its syntactically realized counterpart. For instance, the implicit role in the middle in (29b) cannot license the Instrument any more than its syntactically realized counterpart in (29a). Consequently, unlike in lexicon languages, it is only ARB-saturation that applies in syntactic languages,

¹⁷⁴ With respect to the same conclusion for Italian, the reader is referred to Cinque (1988) and with respect to French; the reader is referred to Fellbaum and Zribi-Hertz (1987).

making the [+m] unavailable for syntactic purposes, but nonetheless, interpretatively equivalent to its syntactically realized counterpart.¹⁷⁵

- (29a) Maks mrzi neprijatne ljude (*nožem)
Max hates unpleasant people *with a knife
- (29b) Neprijatni ljudi se lako mrzi (*nožem)
unpleasant people SE easily hate *with a knife

Fourthly, recall that ECM-middles are available in languages like French (30a) and SC (30b) and disallowed in languages like English (30c).

- (30a) Ces maisons peuvent se croire belles facilement seulement avec beaucoup de bonne volonté.
These houses can SE think beautiful easily only with lots of good will.
- (30b) Nerazradjena ideja se teško smatra dobrom.
Un-worked idea SE with difficulty consider good.
'It is difficult to consider an idea that is not worked out good'.
- (30c) *John considers stupid easily.

ECM constructions like (30a) and (30b) involve theta roles of distinct predicates. The absence of ECM-middles in English follows straightforwardly if the middle formation operation in English takes place in the lexicon. The availability of such middles in languages like French and SC follows straightforwardly if the middle formation operation takes place in the syntax. Furthermore, the data in (30a)-(30b) clearly indicate that the surface subject of middles is a derived subject – it ends up in the surface subject position as a result of movement. Consequently, the availability of ECM-middles points to the fact that the middle in syntax languages is derived through movement. Indeed, the availability of ECM-middles in Italian is standardly used to argue that the middle in Italian is derived in the syntax through movement (cf. Zubizarreta (1982), (1987) Cinque (1988), (1995), for instance). The Italian ECM-middle in an untenstet context (31) is illustrative of this behavior.

- (31) Certe armi hanno il vantaggio di potersi rendere facilmente [t inoffensive]
Certain weapons have the advantage of si rendering harmless easily

(Cinque (1988))

¹⁷⁵ If the input verb to the middle formation operation in SC is a [+c+m]-verb like *write* or a [+c]-verb like *break*, Instruments can, of course, be licensed (cf. Chapter 3).

Last but not least, in Chapter 3, it was noted that the middle-predicate in lexicon languages cannot be used to form episodic sentences. Thus, the middle predicate like (32a) can never give rise to a particular sentence (32b).

(32a) This dress buttons.

(32b) *This dress is buttoning at the moment.

This behavior of middle-predicates in lexicon languages is quite unusual since basic eventive predicates can give rise to generic statements (33a) but, crucially, they are commonly used to form episodic sentences (cf. Krifka et al. (1995)). When such predicates occur in the progressive, the sentences are fully grammatical, though they lose their generic character. They are not reporting a stative property, but describing a particular event. Sentences like (33b) are grammatical since the input predicate is eventive and consequently compatible with the progressive, which is typically used to describe particular events in time.¹⁷⁶

(33a) The Italian/an Italian/Luigi drinks wine with his dinner.

(33b) The Italian/an Italian/Luigi is drinking wine with his dinner.

(Krifka et al. (1995))

Middles in Dutch and English are exclusively generic. Even when forced into progressive, middles are never episodic (cf. Roberts (1985), Bland (1988) Fagan (1992), Ackema and Schoorlemmer (1994), to name just a few). Instead of being eventive, progressive middles (34), express a change in properties over time (cf. Chapter 3: 2.1.1).¹⁷⁷

(34a) Bureaucrats are bribing more than ever in Reagan's second term.

(Roberts (1985))

(34b) This manuscript is reading better every day.

(Fagan (1992))

¹⁷⁶ For the semantics of progressive aspect, the reader is referred to Dowty (1979), Parsons (1990), and Delfitto (2002) and the references there.

¹⁷⁷ The reader might note that this behavior of middle-predicates is parallel to that of "lexical characterizing predicates" like *know French*, *like John*, *love*, and *weight* of Krifka et al. (1995). I leave it for further research whether exploring properties of these predicates can shed further light on the behavior of middle-predicates in lexicon languages, and vice versa. One should, however, note that – as already said – even if one were to entertain a stipulation that stative verbs do not have an event variable, it cannot be extended to middle predicates in lexicon languages as they are derived from basic eventive predicates.

In Chapter 4, I have argued that this kind of behavior can be accounted for if we assume that the [] cluster allows only for Gen to bind its variable. Recall that for the [] cluster to be created, however, the input entry needs to have a [+c] cluster. Furthermore, as argued in Chapter 4, the middle formation operation always targets an n-place entry with a [+c] cluster, where $n > 1$. Let us now provide a further piece of evidence that both of these conclusions are valid. If they are, then one would predict that the basic one-place entries that cannot undergo Agentivization, i.e. addition of the [+c+m] cluster (cf. Chapters 1 and 2), can never feed the middle formation operation, and consequently, never exhibit the type of behavior - illustrated in (32b) and (34) - that middle-predicates do.

Verbs like and *blush* and *reek* seem to be the best candidates to test this. Just like the input verbs to middles, both *blush* and *reek* are eventive verbs.¹⁷⁸ Importantly for our discussion, both *blush* and *reek* are a) basic one-place verbs without a [+c] role and b) they cannot undergo Agentivization. If the type of manipulation the LMF involves (i.e. the creation of the [] cluster that, in turn, enforces the presence of Gen) is contingent on the presence of a [+c] cluster, verbs like *blush* and *reek* are expected never to exhibit the behavior of middle-predicates. This prediction is borne out. Though they can give rise to generic statements (35), verbs like *blush* and *reek* are perfectly fine in particular sentences as well (36).

(35a) Max blushes

(35b) This dress reeks.

(36a) Max is blushing at the moment

(36b) This dress is reeking at the moment.

The fact that *blush* and *reek* cannot undergo Agentivization has some interesting repercussions for our discussion here. Let us elaborate on this point a bit further. Take a look at (37) first. Just like *blush* and *reek*, *walk* is a basic one-place entry (37a) that gives rise to the derivations like (37b).

(37a) *walk*: ([+c+m])

(37b) Fido walks.

Unlike *blush* and *reek*, recall (cf. Chapters 1 and 2) that verbs like *walk* can undergo Agentivization. The entry of the derived *walk* is given in (38a). In principle, one

¹⁷⁸ Again, the use of the label ‘eventive’ here covers “activities”, “achievements” and “accomplishments”, with only *love*-type verbs being labelled as stative (cf. Parsons (1990) as well). By Vendler’s classification, they are activities. For the purposes of our discussion here, however, no further fine-grinding of the aspectual classes is needed.

could expect that verbs like *walk* can feed the middle formation operation, once they undergo Agentivization. This prediction is borne out (38c).¹⁷⁹

(38a) *walk*: ([+c+m], [-c+m])

(38b) Fido walks easily.
'It is easy for one to walk Fido.'

This is consistent with the analysis developed here. The entry in (38a) is a two-place verb (i.e. $n > 1$) with the [+c+m] cluster on its grid. Recall that by the LMF Visibility Requirement, all entries containing a [+c] cluster are visible to the middle formation operation in lexicon languages. As argued in Chapter 4, the result of the application of the Lexicon Middle Formation operation is the [] cluster. The special thing about the [] cluster is that it enforces Gen to bind its variable. Thus, just like in the case of the middle-verb in (32a), the prediction is that the middle-*walk* can never give rise to a particular sentence. Indeed, this prediction is borne out. When progressivized, the output like (39) can no longer be treated as a middle. The only source for the grammatical (39) is the one-place entry in (37).

(39) Fido is walking easily at the moment.

Thus, the middle formation operation in lexicon languages always applies to an n -place entry with a [+c] cluster where $n > 1$. It targets the [+c] cluster of such entries and deletes its content – creates the [] cluster. Once the middle predicate has been created, it cannot be used to form episodic sentences since the [] cluster enforces Gen to bind its variable.

Let us now go back to syntactic languages. If the restriction on the type of the operator that can bind free variables in middles in lexicon languages stems from the presence of the [] cluster, the prediction is that this type of restriction will be absent in syntactic languages. Indeed, this prediction is borne out. Recall now that a SE-construction is, in principle, ambiguous between the generic and episodic reading. The stative versus eventive character of the outputs then will be dependent on the presence/absence of Gen in the logical form of a SE-sentence. On an eventive reading, the semantic representation of (40a) is given in (40b). As already said, an output like (40a) is compatible with *at the moment* type of adverbial since it

¹⁷⁹ Some of the native speakers I have interviewed showed a preference for middles of agentivized *march* (i) and *run* (ii) rather than those of *walk*. I have no explanation for this preference. Importantly for our discussion, since the grid of all three verbs is the same in its basic and derived form, the point can be made with either one of them.

- (i) (One general to another :) Untrained soldiers march with difficulty.
- (ii) (One lab assistant to another :) Trained mice run easily through the maze.

describes a particular event in time. The only difference between the copular passive and the passive in (40a) is in the fact that the variable of the implicit role is bound by ARB-saturation.¹⁸⁰

- (40a) Tristram Šendi se (upravo) čita.
 Tristram Shandy SE (at the moment) reads
 ‘(At the moment), Tristram Shandy is being read.’
- (40b) $\exists e \exists x_{arb}$ (reading (e) & [-c-m] (e, TS) & [+c+m] (e, x_{arb}) & Hold (e, now)]

Consequently, the fact that the verbs like *read* in syntax languages can be used to form both generic and episodic sentences (ARB-passives like (40a)) is exactly expected on the account here.

To sum, the differences between the middle in lexicon and the middle in syntactic languages follow from the fact that the middle formation operation is a parameterizable operation. In languages like SC and Italian, it applies in the syntax (LF). In languages like English and Dutch, it applies in the lexicon. Some of the differences between lexicon and syntactic middles (e.g. the availability of ECM-middles in syntactic but not in lexicon languages) follow from the fact the operation applies in different modules. Other differences (e.g. restrictions on the co-realization of the clusters of the input verb) follow from the different executions of the middle formation operation in these two different modules.

3. Parameterizability of UG Arity Operations

What remains to be explained is why Lexicon Middle Formation is not available in languages like SC, French, Italian, and Polish. To understand this issue, we have to look at the broader picture of arity operations. Recall (Chapter 1) that the set of arity operations includes parameterizable and non-parameterizable ones. Recall that Expletivization applies cross-linguistically in the lexicon. Since Expletivization is cross-linguistically bound to the same module, it is reasonable to assume that it is executed in the same way across languages. From this, it follows that there should not be cross-linguistic variations with respect to Expletivization. Indeed, the outputs of Expletivization behave uniformly across the language sample under investigation here (cf. Reinhart’s work). The level of the application of other operations – Reflexivization/Bundling (cf. Reinhart (2002)), Reciprocalization (cf. Siloni (2003)), and Middle Formation - is a matter of parametric choice. The availability of an

¹⁸⁰ I leave it for further research whether in some languages like SC and Polish the *by*-phrases are always illicit since the x_{arb} can never be referential. Though a possible alley to explore, the first problem that arises with such an assumption is that SC and Polish outputs like (40a) do not allow even for arbitrary *by*-phrases.

operation α to apply in the lexicon or in the syntax is captured by the generalization in (41). Since the syntax and the lexicon are distinct modules, one would expect that variations across languages exist with respect to parameterizable operations. Indeed, as already said, the availability of ECM-middles in SC follows from the fact that Middle Formation applies in the syntax. The fact that English disallows ECM-middles follows from the fact that Middle Formation in this language is bound to the lexicon (cf. Chapters 3 and 4).

- (41) The Lexicon-Syntax Parameter
 UG allows thematic arity operations to apply in the lexicon or in the syntax.

The question that (41) raises is whether the choice of the parameter-setting is determined for each operation individually. The answer to this question seems to be negative. The set of languages that sets the parameter onto syntax with respect to the middle formation operation turns out to be the same set that fixes the parameter onto syntax with respect to other parameterizable operations. Languages that fix the parameter onto the lexicon with respect to Middle Formation are the same ones that fix the parameter onto lexicon with respect to other parameterizable operations.¹⁸¹ Let us illustrate this. SC is a syntactic language. It follows then that the parameterizable operations: Reflexivization, Reciprocalization, and Middle Formation apply in the syntax. Given this, one would expect SC to allow not just ECM-middles, but ECM-Reflexives and Reciprocals as well. This prediction is borne out (42).

- (42a) Maks se smatra glupim.
 Max SE considers stupid
 ‘Max considers himself stupid.’
- (42b) Nerazradnjena ideja se teško smatra prihvatljivom.
 Idea that is not worked out SE with difficulty consider
 acceptable
 ‘It is difficult for one to consider an idea that has not been
 worked out acceptable.’
- (42c) Maks i Petar se smatraju budalama.
 Max and Peter SE consider fools
 ‘Max and Peter consider each other fools.’

English has been argued to set the parameter for the middle formation operation onto lexicon. For that reason, ECM-middles are disallowed in English. By (41), one

¹⁸¹ For elaborate presentations with respect to cross-linguistics variations reflexive and reciprocal predicates exhibit, the reader is referred to Siloni (2001), (2002) and Reinhart and Siloni (2003).

would further expect ECM-reflexives and ECM-reciprocals to be disallowed in English as well. This prediction is borne out (43). Consequently, the answer to the question of why SC cannot utilize lexicon middle formation is because it sets the parameter for all the parameterizable operations to syntax.

- (43a) *John considers intelligent.
(intended reading: ‘John considers himself intelligent.’)
- (43b) *Such ideas consider smart with difficulty.
(intended reading: It is difficult for one to consider such ideas smart.’)
- (43c) *Max and Peter consider fools.
(intended meaning: ‘Max and Peter consider each other fools.’)

Let us further test the generalization with respect to a parameter-setting here with a language not tackled so far. Hebrew is argued to be a lexicon language. With respect to Reflexivization and Reciprocalization, there is an ample amount of evidence to corroborate this. (cf. Siloni (2003) and Reinhart and Siloni (2003)).¹⁸² As seen in (44), ECM-reflexives and well as ECM-reciprocals are unavailable in Hebrew.

- (44a) *dan mitxašev inteligenti.
Dan considers(refl.) intelligent
- (44b) *Max ve-peter mitxashvim xaxamim.
Max and Peter consider each other smart

(Reinhart and Siloni (2003))

How about the Hebrew middle? Let us first establish that an output like (45) is comparable to middles in languages we have explored so far.

- (45) xulca zo mitkabet be-kalut im Ariel.
‘This shirt washes easily with Ariel.’

An output like (45) is a generic statement (with the modal flavor of capability or potentiality), whose implicit role is interpreted as ARB with +human flavor. The derivation in (45) cannot have the punctual interpretation in present or past. Furthermore, Agentive Adverbs like *voluntarily* and *deliberately* cannot be licensed in (45). Just like with middles in the languages that have been considered so far, the middle in (45) licenses Instruments. Again, Instrument licensing is expected since the external role in middles is saturated, not reduced. Consequently, a Hebrew

¹⁸² For an elaborate discussion, the reader is referred to Reinhart and Siloni (2003) and Siloni (2001), (2002).

middle in (45) exhibits the cross-linguistic characteristics of middles identified so far.

If the generalization in (41) is right, the prediction is that Hebrew middles should behave like middles in Dutch and English. This prediction is borne out. Firstly, the LMF Visibility Requirement is operative in Hebrew. Just like in English and Dutch, only verbs with a [+c] role are visible to the middle formation operation in Hebrew. Henceforth, just like in Dutch and English, middles like (46) are illicit in Hebrew.

(46a) *anashim ka'ele nisna'im be-kalut.
people-such hate in easiness

(46b) *muzika ro'eshet nishma'at be-kalut.
music loud hears in -easiness

One would further expect the middle-entry in Hebrew to exhibit the same restriction on the co-realization of clusters of the input verb as has been observed in Dutch and English middles (cf. Chapter 4 and the Section 2.3 of this Chapter). This prediction is borne out. As seen in (47a), the verb *teach* is visible to the lexicon middle formation operation since it contains a [+c] cluster. However, since the LMF involves manipulation of the [+c] cluster, which results in the creation of the [] cluster, the [-c] cluster can no longer be realized in the middle derivation in Hebrew (47b).

(47a) matanot zolot nitanot be-kalut.
presents cheap give-Pl Fem. in-easiness
'Cheap presents give easily.'

(47b) *matanot zolot nitanot **le-xaverim**_[-c] be-kalut.
presents cheap give-Pl Fem. to friends in-easiness

Recall that restrictions with respect to the co-realization of feature clusters pertain only to arguments of the verb (cf. Chapters 2 and 4). Just like in English and Dutch, verbs like *send* form perfectly acceptable middles in Hebrew (48).

(48) xavilot ktanot nishlaxot be-kalut.
'Small parcels send easily.'

Just like in other lexicon languages, the contrast between the behavior of locative Goals (adjuncts with respect to the verbal predicate) and Recipient Goals (i.e. arguments with respect to the verbal predicate) in Dutch and English is observed in the middle derivation in Hebrew (49).

(49a) *xavilot ktanot nishlaxot be-kalut **le-xaverim**.
small parcels send easily to friends [Recipient Goal]

- (49b) xavilot ktanot nishaloxot be-kalut **le-aracot rexokot**.
 small parcels send easily to foreign countries [Locative Goal]

Thus, the Hebrew data corroborate the generalization in (41): a set of parameterizable operations: Middle Formation, Reflexivization, and Reciprocalization all apply in the lexicon in Hebrew. The fact that the generalization in (41) holds for various parameterizable operations with respect to a single language, makes the setting of the parameter during acquisition much easier: by setting the parameter for one parameterizable operation, the child fixes the parameter for all of them.¹⁸³

Last but not least, notice that extending the inquiry to Hebrew might also be beneficial for the dispute regarding the unergative versus unaccusative analysis of middles in lexicon languages. Recall first that though the tests Ackema and Schoorlemmer (1994) present for the unergativity of Dutch middles do not constitute exclusive evidence for it, the results of their tests are consistent with the unergative analysis of Dutch middles. Having established that middles in Hebrew are formed in the lexicon, it seems reasonable to test whether they exhibit unergative or unaccusative behavior. In the literature on Hebrew, the possessive dative test is standardly taken to be a reliable test for unaccusativity. As argued by Borer and Grodzinsky (1986) possessive datives can only modify internal arguments in Hebrew. Thus, they can serve as possessors to subjects of unaccusatives (50a), but not the subject of unergatives (50b). The examples in (50) are from Reinhart and Siloni (2003).

- (50a) šney sfarim naflu le-dan. (unaccusative)
 two books fell to Dan
 ‘Dan’s books fell.’
- (50b) *ha-kelev šaxav le-dina. (unergative)
 the dog lay to-Dina
 ‘Dina’s dog lay.’

Notice now that the subject of Hebrew middles fails the test of possessive dative, from which it follows that the middle in Hebrew exhibits unergative behavior. The example in (51) is from Reinhart and Siloni (2003).

¹⁸³ Though German is not the subject of this study, it is interesting to note that empirical data point to the fact that Middle Formation applies in the syntax in German (cf. Marelj (2002a)). This, on the other hand, is exactly what one would expect under (41) as Reflexivization and Reciprocalization apply in the syntax in German (cf. Reinhart and Siloni (2003)). My same seems to be true of Spanish, in which Middle Formation seems to apply in the lexicon and which is argued to be a syntactic language with respect to Reflexivization and Reciprocalization (cf. Reinhart and Siloni (2003)).

- (51) *sdiney kutna mitkabsim le-kitan be-kalut.
 sheets cotton wash Kitan-possessive easily
 (intended reading: ‘Kitan’s cotton sheets wash easily.’)

Taken together with Ackema and Schoorlemmer’s (1994) findings on Dutch, Hebrew data like (51) point to another area of difference between middles in syntactic and lexicon languages. If no other factor intervenes, the prediction is that the middles in lexicon languages are expected to exhibit unergative behavior, whereas middles in syntax languages are expected to exhibit unaccusative behavior.¹⁸⁴ On the account developed here, the unergativity of middles in lexicon languages is expected considering the properties of the [] cluster and the assumptions about the way Marking Procedures operate. Namely, I argued that it is reasonable to assume that Marking Procedures do not apply in the case of the middle-entry in lexicon languages, since the [] cluster has no syntactic life (cf. Chapter 4: section 4.4). From this, it follows that for the purposes of merging, the middle entry in lexicon languages is treated as an unergative one-place verb.

4. Arbitrarization

Chierchia’s (1995a) ARB-saturation proved to be an invaluable tool in accounting for middles in syntactic languages. Though Chierchia’s analysis is primarily developed for the impersonal construction in Italian, his prediction is that ARB-saturation extends to cover other *si*-constructions as well. Here, I would like to briefly show that Chierchia’s ARB-saturation extends to account for impersonals in SC and Polish as well as another construction, which, for the lack of better term, I will label Object-Arbitrarization.¹⁸⁵

¹⁸⁴ I leave the issue for further research as – among other things - it requires the extending the sample of languages one is taking into consideration. Namely, it is plausible to assume that other factors might influence the syntactic behavior of the middle derivations. For instance, recall that, apart from clitics, referentially deficient pronouns like *zich* in Dutch might also be utilized to check the ACC feature. Unlike the clitic SE, an element like *zich* needs to merge VP-internally as a complement. Suppose, now, that there is a syntactic language that uses this referentially deficient pronoun rather than the clitic to check Case. I would expect the middle in such a language to be syntactically unergative and, at the same time, to behave *on a par* with other syntactic languages with respect to other tests.

¹⁸⁵ As already said, the crucial point of difference between Chierchia’s account and the account here is that the ARB-saturation is in the treatment of the clitic. On the account here, the role of the clitic is simply to absorb the case feature. In Chapter 6, I will return to the role of the clitic in some detail. Here, I would like to remind the reader that divorcing the clitic from the operation has the immediate consequence of allowing one to account for the *laten*-middles, which seem to utilize ARB-saturation, but which do not exhibit the use of the clitic.

4.1 Impersonals

Cross-linguistically, the best known among the constructions that involve arbitrary reference is the third-person plural construction, illustrated in (52).¹⁸⁶ The pronoun *they* receives arbitrary interpretation.

(52) In Italy, they sing in the street.

The same strategy is available in SC and Polish. The difference between the English third-person plural construction in (52) and that of SC in (53a) is that the pronoun in SC is obligatorily null. When the third plural pronominal is overtly expressed in SC, the construction loses its arbitrary reading for the subject and becomes fully referential (53b).^{187 188}

(53a) U Italiji, pevaju na ulici
in Italy, pro sing-3PsPl in the street

(53b) U Italiji, oni pevaju na ulici.
In Italy, they sing in the street.

Far more commonly, though, South (e.g. SC) and West (e.g. Polish) Slavic languages employ the *se/sie*-construction to express the arbitrary reference.¹⁸⁹ The SE-construction in (54a) and (54b) and the third person plural construction as in (53a) are roughly equivalent.¹⁹⁰ The same construction is pervasively used in Italian (54c). The example is drawn from Chierchia (1995a).

¹⁸⁶ For other constructions with arbitrary reference, the reader is referred to Roberts (1985) on English, Cinque (1995) and Chierchia (1995a) on Italian, and Franks (1995) on Slavic languages, for instance.

¹⁸⁷ Franks (1995) notes that this is not the case in Russian. Unlike in SC, the overt *they* is consistent with arbitrary interpretation. This follows from the fact that, unlike SC, Russian is a “discourse”-drop and not a “proper” pro-drop language (cf. Franks (1995) and the references there).

¹⁸⁸ Though not pertinent to our discussion, the issue is extremely important for readers interested in null subject phenomena as such. The reader is referred to Montalbetti (1984), Jaeggli (1986b) and Franks (1995) for illuminating analyses regarding the relation between the overtness of plural pronominals and thematic pro-drop parameter.

¹⁸⁹ This is yet another difference among the Slavic subgroups. Namely, East Slavic (e.g. Russian), employ the third-person plural strategy much more pervasively than South and West Slavic. The use of this type of arbitrary construction is far more restricted.

¹⁹⁰ The subtle differences between the two arbitrary constructions are not quite clear. For instance, in Franks (1995) the third person plural construction is said to always correspond to semantic plurality. Though, generally, this seems to be the case, it does not seem to be the rule. Take (i), for instance.

(i) Jutros su te tražili iz kancelarije. Telefonska veza je bila loša, ali mislim da je bila Marija.

- (54a) U Italiji se peva na ulici
In Italy SE sings-3PsSg in the street
- (54b) We Włoszech się spiewa na ulicy
in Italy SE sing-3Sg in the street
"People in general sing in the street"
- (54c) In Italia, si canta
In Italy, si sings-3PsSg
'In Italy, people sing.'

The construction in (54) is usually referred to as impersonal construction. The term "impersonal" most often reflects the lack of agreement such constructions exhibit.¹⁹¹ The Spec, IP position is non-thematic. It is occupied by the expletive *pro*. Since there is no Nominative thematic argument for the verb to agree with, the agreement is default - depending on the richness of agreement system in a given language – it

This morning (they) looked for you from the office. The telephone line was bad but I think it was Maria.

As the continuation of the sentence shows, there is no commitment to the semantic plurality: the sentence is true even if only a single individual (e.g. *Marija* in (i)) was found to satisfy the description. As argued by Cinque (1988), the same is true in Italian. The second area of difference noted in Franks (1995) is that whereas the arbitrary SE-construction has a modal interpretation, the third-person plural one does not. The observation seems essentially right though it is not quite clear what it should be related to. For instance, other constructions with arbitrary interpretation can have the modal reading. A sentence like (ii) in Dutch can have the reading of prescriptive modality. I leave such issues for further research.

- (ii) Je zingt in de straat.
'One should sing in the street.'

The only clear difference between the two constructions in SC as well as in other languages (cf. Chierchia (1995a) for Italian and Jaeggli (1986b) for Spanish) is that the arbitrary third person plural construction obligatorily excludes the speaker whereas the SE-constructions do not. As pointed out by Jaeggli (1986b), "verbal agreement, then, is 'defective' in the sense that one of the formal features present lacks significance, but it is not completely without sense" (p. 54).

¹⁹¹ The term impersonal might be a somewhat misleading since it is often used to cover all the constructions where the agreement features on the verb are "default". The term is, thus, used to cover cases like (i) with Datives as the logical subject. The agreement features on the verb are default since *Max* does not check nominative. Constructions like the one in (i) are not the subject of investigation here.

- (i) Maksu-Dat je bilo-3PsSg žao
Max-Dat is been-3PsSg sorry.

ranges from 3PsSg (Italian) to 3PsSgNeuter (SC and Polish). The syntax of (54) is given in (55)

(55) [IP $\text{pro}_{\text{expletive}}$ [I SE[_{VP} sing]]

The external argument is not linked in the syntax. It is however, present in the semantics of impersonals. For instance, just like in (56a), the Instrument is licensed in the impersonal in (56b). Thus, the impersonal cannot be the output of reduction. It must be the output of some sort of saturation.

(56a) Maks zviždi zviždaljkom.
Max whistles with a whistle

(56b) Zviždi se zviždaljkom.
Whistles SE with a whistle.
'One should whistle/whistles with a whistle.'

In Italian (cf. Chierchia (1995a)), Polish and SC, the saturated external argument of impersonals is interpreted as unspecified, generally – though not exclusively - plural, human entity. As already said (cf. Chapter 4: 4.4.2), for Italian impersonals, Chierchia proposes the use of ARB-saturation. Recall that the crucial point about ARB-saturation is that it introduces the index *arb* that ranges over groups of humans. The interpretation of an impersonal like (54c) is (57).

(57) $\exists x_{\text{arb}}$ [sing(x_{arb})]
 x_{arb} =a variable restricting to ranging over groups of humans

The fact that, due to ARB-saturation, impersonals can be used to describe only the situations involving +human entities becomes particularly striking if one takes into account the interpretation of examples like (58). The only way to interpret (58a) in SC and (58b) in Polish is relating to humans, not cats.

(58a) Na ulici/ovde se mjauče
In the street/here SE meows

(58b) Na ulicy/tutaj się miały.
In the street/here SIE meows
'One/people (should) meow in the street/here.'

In Chierchia's analysis, an impersonal like (59a) is expected to be ambiguous depending on whether it is understood generically or episodically. The same is true of its SC counterpart in (59b).

(59a) Si canta.
si sings

- (59b) Peva se.
sings se

As already said, in Chierchia's analysis, the ambiguity is formally represented in terms of the presence or absence of the generic operation in the semantic representation of the relevant sentence. Episodic reading arises in contexts given in (60a) and (60b) - taken from Chierchia (1995a). Consequently, on the episodic reading, the logical form of (59) is (60c).¹⁹²

- (60a) Q: Che sta succedendo qui? A: Si canta.
Q: What is going on here? A: People are singing
- (60b) Cosa é successo ieri in campeggion? A: Si é cantata
What happenend yesterday in the campground? A: People sang.
- (60c) $\exists e \exists x_{arb} [\text{singing } (e) \ \& \ [+c+m] (e, x_{arb})]$

A generic reading arises from the presence of a Gen-operator in the logical form of (59a). According to Chierchia, there are two possibilities depending on how the scope of Gen is selected. The one relevant for our purposes is the one where Gen takes a sentential scope. "Since the argument of *cantare* is existentially closed by *si*, the only possibility is for Gen to bind the event/situation variable" (Chierchia (1995a): 123). Chierchia's formula for the generic reading is given in (61).¹⁹³

- (61) Gn s [C(s)] [$\exists x_{arb} [\text{singing } (s, x_{arb})]$] (Chierchia (1995a))

The formula in (61) states that in "every contextually relevant situation, there is singing going on". As argued by Chierchia (cf. also Krifka et al. (1995) and Krifka (1995)), the value for C can be provided in different ways. In (62a), for instance, the previous context makes it clear how the variable C is to be interpreted.¹⁹⁴

¹⁹² Tense is not captured in this formalism. A simplified formula is given since our focus here is on *arb*.

¹⁹³ Recall (cf. Chapter 4) that in DRT, the existential disclosure freely applies in the domain of quantificational adverbs. Recall also that the generic operator is a phonologically null counterpart of the adverb of quantification such as *usually* or *typically* (cf. Chapter 3). Note also that the partitioning developed by Chierchia (1995a) is different from the partitioning presented in Chapter 3, as the restrictor coincides with the material that is not c-commanded by Gen. Last but not least, Chierchia's representations are not based on event-semantics. I am glossing over all of these specifics here since the crucial point of our discussion is to show that the special type of saturation that introduces the index *arb* is an invaluable tool in accounting for the properties of middles, impersonals and object-arbitrarizations.

¹⁹⁴ Considering (62a), the reader should note that the verb ends up in the matrix if focus is taken to be the determining factor as well.

- (62a) Q: Casa is fa' di solito in campeggio? A: Si canta.
 what si does usually while camping? A: SI sings.
 What do people usually do while camping? They sing.

(Chierchia (1995a))

In (54) – repeated here as (63) - a syntactically overt restrictor for Gen in the form of a locative is present.

- (63a) U Italiji se peva na ulici.
 in Italy SE sings-3PsSg in the street
- (63b) We Włoszech sie spiewa na ulici.
 in Italy SE sing-3Sg in the street
 'People in general sing in the street.'
- (63c) In Italia, si canta.
 in Italy, si sings
 'In Italy people sing.'

As argued throughout this section, the core of Chierchia's analysis of Italian impersonals extends to Polish and SC impersonals as well. As for the clitic, I argue that its function is consistent with what we have seen so far. It is a Case-absorber. The difference between the Case absorbing properties of SE that we have seen so far is in the fact that the Case absorbed with impersonals like in (62) is Nominative rather than ACC. The ability of the clitic to absorb Nominative case should not come as a surprise. Namely, a regular case absorbing morphology - in impersonal-passive in Dutch and German (64) - is argued to absorb nominative (cf. Jaeggli (1986a), for instance).

- (64a) Es wird getanzt.
 There is danced
- (64b) Er werd gedanst.

Last but not least, note that there seems to be an indication that ARB-saturation rather than regular existential closure is involved in German and Dutch impersonal-passives as well. Native speakers of Dutch and German that I have interviewed interpret the implicit argument in sentences like (64) as unspecified, generally plural, human subject. Note further that even in the cases like *bark* where the world knowledge would 'dictate' the interpretation to be - at least - consistent with - human +animate entities like *dogs*, Frajzyngier (1982) claims that impersonal-passives in Dutch and German are consistent only with +human entities, just as it is the case in SC and Polish (57). If this is correct, then - once divorced from the presence of the clitic - Chierchia's ARB-saturation but might also be responsible for

the interpretation of the implicit argument in German and Dutch impersonal-passives.

4.2 Object-Arbitrarization

Apart from Impersonals, Chierchia's (1995) ARB-saturation seems to apply in yet another SE-construction that I label Object-Arbitrarization (65).¹⁹⁵

- | | | |
|-------|---|----------|
| (65a) | Maks se gura.
Max SE pushes
'Max pushes people/others.' | (SC) |
| (65b) | Maks bije się.
Max beats SE
'Max beats people/others.' | (Polish) |

The construction is truly intriguing for various reasons. Firstly, unlike the SE-constructions examined so far, the Object-Arbitrarization seems to be restricted to Slavic languages as no Romance language is reported to have the SE-use exhibited in (65).¹⁹⁶

In SC, verbs that typically give rise to the Object-Arbitrarization construction are *gurati* "push", *udarati* "hit", *tući* "beat", *pljuvati* "spit at", *prskati* "splash with water, sprinkle", *gristi* "bite" *ujedati* "bite", *šutati* "kick", *grliti* "hug", *ljubiti* "kiss", *bosti* "sting/prick", *štipati* "pinch", and *grebati* "scratch". Generally speaking,¹⁹⁷ the set of transitive verbs – whose precise definition requires further research – that allow for Object-Arbitrarization is not a garden variety "object-drop" verbs like *eat*.¹⁹⁸ Namely, just like in English (67), SC *push* (66b) – unlike SC *eat*

¹⁹⁵ The reader is referred to Rivero (1999) and the references there for Polish, Dimitrova-Vulchanova (1996) for Bulgarian, and Progovac (1998) for the SC Object-Arbitrarization construction.

¹⁹⁶ Cf. Rivero (1999).

¹⁹⁷ There is, however, one interesting thing to note about English here. In (i) – taken from Levin (1993) – the author reports that the understood object is interpreted as something like *people*. Furthermore, the set of verbs that allow for this construction seems to be a subset of verbs that allow for Object-Arbitrarization in SC. The set is reported to be fairly restricted and that "the action named by the verb is, in some sense, characteristic of the subject" (Levin (1993): p. 39). I leave the question of if and how it is related to the Object-Arbitrarization and to the Arbitrarization in the lexicon for further research.

(i) That dog bites.

¹⁹⁸ Notice further that in the cases of "object-drop" or unspecified NP deletion" alternation "the verb in this variant is understood to have as object something that qualifies as a typical object of the verb" (Levin (1993): p. 33). This alternation seems to be still quite illusive.

(66a) - does not allow object-drop. Still, as we saw, *push* in SC allows object arbitrarization.

- (66a) Maks je jeo.
Max is eaten
- (66b) *Maks je gurao.
Max is pushed
- (67a) Max ate.
- (67b) *Max pushed.

The interpretation of (65) is such that the internal role is present in the semantics of the construction. Consequently, I assume that the constructions like (65) are the outputs of some sort of saturation, rather than reduction. I propose that the saturation in question is ARB-saturation. Just like with impersonals and middles, the internal argument in Object-Arbitrarization is interpreted as an unspecified, generally plural, and +human entity. To illustrate this, compare the transitive use of *push* (68a) and *hit* (69a) with the derived Object-Arbitrarization in (68b) and (69b). The interpretation of the internal argument in (68a) and (69a) is consistent with +/-animate and +/-human. The internal role of derivations like (68b) and (69b), however, can only be +human.

- (68a) Maks gura sto/Mariju.
'Max is pushing the table/Maria.'
- (68b) Maks se gura
Max se pushes
- (69a) Maks udara Mariju/psa
Maks hits Marija/ the dog
'Max is hitting the dog/Maria.'
- (69b) Maks se udara
Max se hits

Thus, just like with impersonals in the previous section, the implicit argument is interpreted as an unspecified, generally plural, human entity. It is important to stress that just like with impersonals (cf. Chierchia (1995a)), the group –drawn from a salient set – most commonly includes the speaker. Consequently, just like with the Italian impersonal in (70a) drawn from Chierchia (1995a), the speaker-oriented interpretation is quite often favored with Object-Arbitrarization (70b) as well.

There are various proposals in the literature regarding the analysis of this alternation (cf. Levin (1993) and the references there).

- (70a) Ti si é cercato.
 you-ACC si AUX-Past look for
 ‘People/we looked for you.’
- (70b) Maks se pljuje.
 Max SE spits
 ‘Max spits at people/us.’

Though generally plural – provided the right context -the saturated +human entity can be singular.¹⁹⁹ If you are in a crowded bus and you are being persistently pushed by another passenger for the past 10 minutes, you are quite likely to utter something like (71).

- (71) Ne gurajte se, molim vas!
 Not push-Imperative2Ps SE
 ‘Stop pushing me/us, please!’

Just like in the case of impersonals, the Object-Arbitrarization construction can give rise to both a particular and a generic interpretation. As with the impersonals, I assume that the difference can be formally captured by the presence of Gen in the logical form of the Object-Arbitrarization construction. Let us take a look at the examples in (72).

- (72a) Ovo dete se ne udara.
 this child SE not hits
- (72b) Max se grize.
 Max SE bites

An output like (72a) is likely to get a generic interpretation stating that in every contextually relevant situation that includes *this child*, our child does not hit people, most likely, children. The most salient interpretation of (72a) is that of a characterizing sentence roughly equivalent to something like *This child is not a bully*. The most salient reading of (72b), on the other hand, is of an episodic sentence reporting a particular event of biting that includes *Max* and a group of people - most likely - children.

¹⁹⁹ As already said (cf. fn.138) this is quite typical of different arbitrary constructions across languages. For instance, Jaeggli (1986b) notes that the arbitrary plural construction in Spanish like (i) - taken from Jaeggli (1986b) - is undetermined with respect to the number of individuals referred to. Namely, something like (i) would be true even if “only one individual was found, or was know to be, knocking at the door”.

- (i) Lllaman a la puerta.
 pro are-calling at the door.

The difference between the ARB-saturation in impersonals and middles, on the one hand, and in the Object-Arbitrarization construction, on the other hand, is that it applies to the internal role in the case of the latter. The saturated argument is present in the semantics, but not in the syntax.²⁰⁰ The syntactically realized DP/NP is base-generated as the external argument of the verb. As with the other constructions dealt with so far, the valency of the verb is taken care of by the clitic. Thus - just like in middles and impersonals - SE in (72) absorbs the offending Case feature - ACC - in this instance.

To sum up, the ARB-saturation of Chierchia (1995a) is not just an invaluable tool in accounting for impersonals in a variety of syntax languages, but it extends to middles and ARB-passives in such languages as well as to the Object-Arbitrarization construction, which is pervasive across Slavic languages. Note, importantly, that the fact that the implicit role in all these three constructions is interpreted as an unspecified, generally plural, human entity becomes straightforwardly accounted for if one resorts to this special type of saturation.

5. Concluding Comments

In accordance with the hypothesis that the middle formation operation is a parameterizable operation (cf. Chapters 3 and 4), the main objective of this Chapter was to account for the properties of middles in syntactic or syntax languages – languages in which the middle formation operation applies in the syntax (LF). The first step was to show that middles in syntactic languages exhibit the cross-linguistic characteristics identified for middles in Chapter 3. This exploration allowed us to pin-point the root of the illusiveness of middles in syntactic languages. The existence of the middle comparable to the middle in Dutch and English is blurred in syntax languages due to the fact that it shares the morpho-syntax with passives, which are, semantically, quite different from middles. As argued in this Chapter, the existence of these ARB-passives in syntactic languages is not just explained - it is actually predicted on the account here. Unlike in lexicon languages, since no cluster-manipulation occurs in syntactic languages, there is nothing to enforce Gen.

In both lexicon and syntax languages, middles are generic statements. Both types of middles obligatorily retain the implicit external role, which is interpreted as ARB, with +human flavor. Since the middle-formation operation is bound to different

²⁰⁰ If SC were to behave *on a par* with Italian, comparing Object-Arbitrarization here to Rizzi's (1986) object-*arb* construction would, in principle, be a good testing ground to show that the internal argument in Object-Arbitrarization is syntactically inactive. Having tested the object-*arb* construction of Rizzi in SC, I conclude that it behaves like English object-*arb*, rather than like Italian object-*arb*. Since the English arbitrary object is argued to be syntactically inactive (cf. Rizzi (1986)), comparing the two in SC would not lead to any illuminating results. I am grateful to Željko Bošković for the discussion regarding the object-*arb* construction in SC.

modules, lexicon and syntax languages use different tools to reach their common semantic goal. Whereas lexicon languages utilize the ARB-role i.e. the [] cluster, syntactic languages utilize ARB-saturation. Namely, in lexicon languages, the process is arbitrarization of a cluster, while in syntax languages, it is arbitrarization of a variable. This, in turn, is perfectly consistent with the levels at which these two types of Arbitrarization apply. Whereas Arbitrarization in lexicon languages applies in the lexicon, where there are only clusters, Arbitrarization in syntactic languages applies at LF. As argued further in this Chapter, ARB-saturation of Chierchia (1995a) is not just an invaluable tool in accounting for impersonals in a variety of syntactic languages, but it extends to middles and ARB-passives in such languages as well as to the Object-Arbitrarization construction, which is pervasive across Slavic languages. As noted, without appealing to this special type of saturation, it is quite difficult to account for the fact that in all three constructions, the implicit role is interpreted as an unspecified, generally plural, human entity.

The differences between lexicon and syntax languages exist and they follow from the fact that the middle formation operation is a parameterizable operation. Whereas some of the differences follow from the very fact that the middle is derived at different levels (e.g. the availability of ECM-middles in syntactic and unavailability of ECM-middles in lexicon languages), others follow from the way the operation is executed in these two distinct modules (e.g. restrictions on co-realization of clusters, which is active in the lexicon but not in syntactic languages). As shown on the sample of languages in this study, the choice of the parameter-setting does not seem to be determined for each of the parameterizable operation individually. Rather, it follows from the generalization in (41) - repeated here as (73) - and holds for various parameterizable operations with respect to a single language.

(73) The Lexicon-Syntax Parameter

UG allows thematic arity operations to apply in the lexicon or in the syntax (LF).

This, in turn, makes the setting of the parameter during acquisition much easier: by setting the parameter for one parameterizable operation; the child fixes the parameter for all of them.

Though most of the puzzling characteristics of middles – both in individual languages and across languages presented in this study - have been explained and derived on the analysis here, some of the issues are left for further research. The solution to the licensing of *by*-phrases is one of them. Another issue pending further research is the definition of a set of adverbs admissible in middles. As already said, further research should also focus on expanding the sample of languages. As illustrated in Section 3 of this Chapter, expanding the sample of languages is of crucial importance in testing the validity of the criteria that hold of lexicon and syntactic middles as well as in testing the validity of the generalization in (73).

Among the further issues that are related to the subject matter of this study in a broader sense, the interaction between the actional-aspectual realm and genericity, particularly with respect to Slavic languages seems quite intriguing. Namely, it is standardly assumed in the literature that generics tend to go with imperfective aspect. As pointed out in Dahl (1985), (1995), Slavic languages seem to be somewhat different as they can use the “perfective aspect for generics when a ‘bounded’ event is referred to” (Dahl (1995): p 420). The SC example (74) –taken from Dahl after Mónnesland (1984) - is illustrative of the behavior Dahl refers to. The verb *popiti* in (74) is traditionally referred to as a perfective verb, as opposed to the imperfective *piti drink*.²⁰¹

- (74) Svako jutro popijem čašu rakije.
 ‘Every morning I drink a glass of brandy.’

Last but not least, I hope the study has shown that the allure of middles goes well-beyond their empirical elusiveness and curiousness. The theoretical relevance of middles - pointed out and exploited in many studies (cf. Keyser and Roeper (1984), Zubizarreta (1987), Fagan (1992), and Hoekstra & Roberts (1993), to name just a few) – has been exploited in this study as well. I hope this study has shown that middles are truly fruitful ground for testing hypotheses about the intricate interplay between the system of concepts, computational system, inference and discourse as well as an invaluable testing area for different assumptions about the languages faculty itself. The value of middles with respect to the current issues and on-going debates in theoretical linguistics is immense. A particular issue that I would like to stress here is the relevance of middles for the on-going lexicalist versus non-lexicalist dispute. In this respect, it is of paramount importance to stress again that, as shown on a sample of languages in this study, differences between middles across-languages can be straightforwardly captured only if one works under the hypothesis that the language faculty contains an active lexicon. Namely, as shown in 2.3 of this Chapter, a whole range of properties that lexicon and syntactic middles exhibit follows from the fact that Middle Formation is a parameterizable operation. The parameterization, in turn, can only be accommodated in a model that contains an active, dynamic component of the lexicon.

²⁰¹ With respect to the peculiarities of the aspectual marking in of Slavic languages - as opposed to Romance and Germanic - the reader is referred to Delfitto (2002).

Chapter 6

SE-Derivations

1. Introduction

In Chapter 1, I have presented a sample of seven constructions that involve the presence of the clitic *se* in SC. The question that immediately arose from the presentation there was whether it would be to find a common denomination for all these constructions (other than the presence of the clitic) and whether it is possible to account for the presence of the clitic in all these constructions in a uniform way. Four constructions that we have dealt with so far – middles, passives, impersonals and object-arbitrarizations – were in this sample. The conclusions reached in the previous Chapter were that these are derived entries – entries derived by the application of one arity operation or another. The answer to the question of why the clitic SE marks all these outputs is that in these constructions the role of the clitic is to absorb an “extra” Case feature - ACC or Nominative. These four constructions share another thing in common. Namely, all four constructions are the outputs of some saturation operation, the application of which leaves one of the arguments unavailable for syntactic, but available for semantic purposes. Should we then conclude that the presence of the clitic is somehow contingent on saturation? The answer to this question is negative. To explore this issue, I tackle – in this Chapter - the remaining three constructions presented in Chapter 1. Let us take a look at the examples in (1). The uses of SE illustrated in (1) for SC are attested in French, Italian and Polish. The example in (1a) is a reflexive output, (1b) is an unaccusative output, and (1c) is a “frozen” output, where “frozen” simply means that there is no active transitive alternate of the V-*se* verb in SC.

- (1a) Maks se okupao.
Maks SE washed
'Max washed.'
- (1b) Vaza se razbila.
vase SE broke
'The vase broke.'
- (1c) Nesreća se desila u tri sata.
accident SE happened at three o' clock
'The accident happened at three o' clock.'

Consequently, the goal of this Chapter is to further test the validity of the hypotheses that all the SE-derivations under consideration here are derived outputs and that the clitic *si/se/się* is a marker of arity operations whose function is to absorb Case (cf. Reinhart and Siloni (2003)). The hypotheses will be tested against the remaining three constructions (1a) – (1c) – from the sample of constructions introduced in Chapter 1. I will argue that the common denominator, of all the SE-constructions dealt with in this study is that they are derived outputs. I will argue here that - under the hypothesis that the clitic is a Case-absorbing marker of one or another arity operation - one can explain its appearance across the range of constructions that are under the investigation in this study. This, on the other hand, is both conceptually and empirically desirable.

In the remainder of this Chapter, I will explore whether the clitic is in any way associated with the theta-role that is affected by the arity operation. The answer to this question is negative. Contra to some authors (cf. Cinque (1995) on Romance and Rivero (1999) on Slavic), I argue that the clitic is not an argument and that it is not associated in any way with the theta-role. It is simply case-absorbing morphology. To tackle this issue, I will revisit the Impersonal SE-construction (cf. Chapter 5). Finally, section 2.5 of this Chapter explores whether the unification of the presence of the clitic across all the different constructions - dealt with in Chapter 5 and in this Chapter - can be achieved in any other way. A quite common approach towards a unified analysis of some of the constructions dealt with in this study is by appealing to the diachronic axe. Namely, the use of the same morphology can be viewed as relating these various constructions diachronically. I will argue that though the diachronic approach can account for most of the SE-constructions under consideration here, it cannot extend to include all the constructions of the present-day languages that are under consideration in this study. A better generalization underlying the presence of the clitic across these different SE-outputs seems to be the one that unifies them on the account of being derived by the application of one or another arity operation, which is, in turn, marked by the presence of the Case-absorbing morphology - clitic SE.

2. SE-Outputs

2.1 Reflexive Outputs

Reflexive outputs are quite different both syntactically and semantically from the SE-outputs we have explored so far. Recall (Chapter 1) that reflexives are considered to be the outputs of one type of reduction operation. The question of what kind of reduction is at stake (i.e. the external or the internal role reduction) brought about two main lines of research in the literature. On the one hand, there are proponents of the external role reduction (cf. the work of Marantz, Grimshaw, and Kayne). On the other hand, there are proponents of the internal role reductions (cf. the work of Reinhart and Reinhart and Siloni). On either approach, when the

reduction applies, the same value is assigned to the two occurrences of a variable (2b). Consequently, something like (2a) – is interpretatively equivalent to (2c). In semantic terms, then, reflexives are quite different from any of the SE-constructions we have seen so far.²⁰²

- (2a) Maks se obrijao.
Max SE shaved
'Max shaved.'
- (2b) Max λx (x wash x)
- (2c) Max je sebe obrija
'Max shaved himself.'

What about the syntax of reflexives? Reinhart (1996), Reinhart and Siloni (2003) convincingly show that reflexives are unergative outputs.²⁰³ Among the tests that these authors present is *en*-cliticization in French and *ne*-cliticization in Italian. It is a well-known fact that the clitic *en* in French and its Italian counterpart *ne* can criticize only out of the object position. This being so, the behavior of this clitic can be used to test whether an argument in the postverbal position is internal or external. If reflexives are unergative, one would predict *en/ne*-cliticization to be illicit with them. This prediction is borne out. Namely, as shown by Reinhart and Siloni, a reflexive output like (3a) disallows *en*-cliticization in French (3b). Thus, reflexives in French pattern syntactically with unergatives.

- (3a) ?Il s'est lave beaucoup de tourists dans ces douches publiques,
récemment.
there SE is washed many tourists in these public showers
recently
'Many tourists washed in these public showers recently.'
- (3b) *Il s'en est lave beaucoup dans ce lave-vaisselle.
there SE of+them-CL is broken many in this dish-washer

Italian is argued to pattern with French in this respect as the reflexive verb (4) disallows *ne*-cliticization.

²⁰² For details regarding the operation of Reflexivization/Bundling, the reader is referred to Reinhart (1996), Reinhart and Siloni (2003).

²⁰³ In this brief presentation, I am only focusing on syntactic languages. For a detailed elaboration and a barrage of tests with respect to English, Hebrew, Dutch and Romance reflexives, the reader is referred to Reinhart and Siloni (2003).

- (4) *Se ne sono vestiti tre.
SI of+them-CL are dressed three.

(Reinhart and Siloni (2003), after Grimshaw (1990))

Slavic languages show very little sensitivity with respect to the standard tests of unaccusativity. The most robust test on unaccusativity cited in the literature on Slavic languages is the so-called Genitive of Negation or Slavic Genitive (cf. Pesetsky (1982)). Whereas Russian is reported to be fairly straightforward with respect to this test (cf. Neidle (1988) and Franks (1995)), the test is inapplicable in both SC and Polish for different reasons. Whereas in SC, Genitive of Negation is no longer productive, Genitive of Negation in Polish, though productive, cannot be used to as to diagnose unaccusativity.²⁰⁴ Unlike in Russian, Genitive of Negation applies obligatorily, but only to those complements that would be accusative in affirmative sentences. Consequently, unlike in Russian (5), it does not apply to objects of unaccusatives (6a) or passive verbs (6b).

- (5a) Nikakix gribov ne rastët v ètom lesu.
no-any(gen) muschoorms (gen) NEG grow(3sg) in this wood
'No mushrooms grow in these woods.'
- (5b) Nikakogo mjasa ne plavalo v supe
no-any(gen) meat(gen) NEG floated (n) in soup.
'No meat floated in the soup.'

(Babby (1980))

- (6a) *Nie przysło żadnej/ (ani) jednej kobiety
NEG arrived no-any(gen)/no-even one(gen) woman(gen)
- (6b) *Nie było budowano katedry
NEG was(n sg) built (n sg) cathedral (gen)

(Franks (1995))

The syntactic test that might be used to diagnose unaccusativity in Polish and SC seems to be the Left-Branch Extraction (henceforth: LBE). The phenomenon - first noted by Ross (1967) - sharply contrasts languages like English and languages like Polish, where the extraction of left-branch constituents such as demonstratives, possessives, and interrogative elements is possible in the latter type of languages (8b) and impossible in the former (7b). The Polish example in (8b) is taken from Corver (1992). As seen in (9), SC behaves just like Polish with respect to Left-Branch Extraction. Corver (1992) roots the difference between Polish and English in

²⁰⁴The loss is relatively recent. In the 19th century literature, one encounters genitives under sentential negation, comparable to the present day Russian.

the fact that such elements should be treated as adjectival in languages like Polish, whereas they are determiners in languages like English.^{205 206}

- (7a) They are forecasting nice weather!
- (7b) *Nice_i they are forecasting [t_i weather]
- (8a) Zapowiadają [wspainalą pogodę]!
 pro_{thematic} are forecasting great weather!
- (8b) Wspainalą_i zapowiadają [t_i pogodę]!
 great (they) are forecasting weather!
- (9b) Predvidjaju [lepo vreme]!
 pro_{thematic} are forecasting nice weather!
- (9b) Lepo_i predvidjaju [t_i vreme]!
 nice (they) are forecasting weather

With respect to LBE, the important point for our discussion is that there is an asymmetry with respect to the possibility of extraction out of the postverbal subject and postverbal objects. Languages that allow LBE allow it from postverbal objects and disprefer the extraction from postverbal subjects. Provided reflexives in Polish are syntactically unergative, one would expect LBE to be illegitimate with them. As seen in (10), this prediction is borne out. Consequently, the NP/DPs *small child* and *handsome man* must be base-generated externally. Notice further that with unaccusative derivations like (11) the LBE is possible: the NP/DPs *crystal vase* and *tasty meal* are base-generated as internal arguments.

- (10a) *Małe_i umyło się [t_i dziecko]
 small washed SE child

²⁰⁵I should stress that the behavior of languages that are argued to allow LBE is not as uniform as one would expect. In general, extraction seems to be much more liberal in SC than in Polish. For Polish native speakers that I have interviewed, examples like (8b) sound, at least, slightly odd. Provided the right contexts, for SC native speakers, both sentences in (9) are fine. Secondly, as it will become obvious from the data and discussion, the subject–object asymmetries with respect to LBE are, generally speaking, much milder in SC than they appear to be in Polish.

²⁰⁶Since the seminal paper of Corver (1992), the availability of LBE has been unequivocally interpreted to indicate that Slavic languages do not have a category D – that noun phrases come in ‘bare’ as NPs. Regarding the same conclusion in SC, the reader is referred to Zlatić (1997), Aljović (2000), and Stjepanović (2001), for instance. The account has been challenged by Rappaport (2000) who provides a completely different account of the LBE. For the purposes of our discussion, it is irrelevant which of these two accounts one adopts. The relevant point is that languages show subject-object asymmetry with respect to LBE.

- (10b) *Przystojny_i ogolił się [t_i męszczyzna]
Handsome shaved SE man
- (11a) Kryształowa_i rozbiła się [t_i waza]
Crystal broke SE vase
- (11b) Smaczne_i przypaliło/spaliło się [t_i danie]
Tasty burned/burned up SE meal

With respect to SC, the extraction out of the postverbal objects is perfectly grammatical, whereas the extraction out of the postverbal subjects is less free (12b). In the SC example in (12a), the *wh*-word is extracted from the complement of the verb *read*, whereas in (12b) it is extracted from the postverbal subject of the verb *read*. As indicated, whereas (12a) is perfectly grammatical, (12b) is ungrammatical.²⁰⁷

- (12a) Koji_i Maks misli [da je Kafka napisao [t_i knjigu]]?
which Max thinks that is Kafka wrote book
- (12b) *Koji_i Maks misli [da je *Proces* napisao [t_i pisac]]?
which Max thinks that is *Process* wrote writer

Other examples are less so clear-cut (13). The contrast between (13a) and (13b) is detectable, but far more subtle.

- (13a) Koji_i Maks misli da je stigao [t_i student]? (unaccusative)
which Maks thinks that is arrived student
- (13b) ?Koji_i Maks misli da je telefonirao [t_i student]? (unergative)
which Maks thinks that is telephoned student

With respect to the differences between the outputs with the *wh*-word extracted from the subject as opposed to the object NP, judgments seem to be the clearest in the cases where there is some intervening material between the post-verbal NP/DP and the CP domain. As seen in the examples in (14), the best results are achieved if the intervening material is the argument of a verb. Examples (14a) and (14b) as well as the judgments are taken from Aljović (2000)). For me, the ungrammaticality of (14a)-type examples is, truly, uncontroversial; the contrast between (14a) and (14c) is sharp.

- (14a) *Koji_i ovu knjigu čita [t_i student]?
which this book reads student

²⁰⁷ With embedded questions with the overt matrix subject, the contrast in acceptability gets to be, at least, a bit more robust.

- (14b) ??Koji_i dobro čita [t_i student]?
which well reads student
- (14c) Koji_i ovaj student čita [t_i knjigu]?
which this student reads book

With respect to the extraction test and reflexives, dative-reflexives in SC allow the “robustness” that is witnessed in (14a). Just like in other syntactic languages (cf. Reinhart and Siloni (2003)), dative-reflexivization is available in SC (15).

- (15) Maks si je kupio kola.
Max si-CL is bought a car.
‘Max bought himself a car.’

Consequently, let us use dative-reflexives for the LBE test. The contrast between (16a) and (16b) is sharp. The extraction from the postverbal object (16b) gives rise to a grammatical output. The extraction from postverbal subject (16a) is completely ungrammatical. Notice further that the desired contrast does not just obtain in long-distance (16), but in short-distance questions as well (17).

- (16a) *Koji_i Maks misli da si je ova kola kupio [t_i kupac]
which Max thinks that SI is this car bought buyer
- (16b) Koji_i Maks misli da si je ovaj kupac kupio [t_i kola]
which Max thinks that SI is this buyer bought car
- (17a) *Koji_i si je ova kola kupio [t_i kupac]?
which SI is this car bought buyer
- (17b) Koji_i si je ovaj kupac kupio [t_i kola]?
which SI is this buyer bought car

With regards to the data here, then, one can conclude that reflexives in Polish and SC are unergative. Consequently, both in semantic and in syntactic terms, they are quite different from middles in these languages. Yet, just like middles, they are marked with the presence of the clitic SE.

2.2 Outputs of Expletivization: Unaccusatives and Subject-Experiencer Verbs

Recall (cf. Chapter 3) that unaccusative outputs are standardly assumed to lack the external theta-role. In the Theta System, unaccusatives are outputs of Expletivization – external reduction (cf. Chapter 1). Cross-linguistically, Expletivization applies to the set of [+c] verbs. The operation reduces the [+c] role of such verbs completely. Just like *razbiti* “break”-type verbs (18), Expletivization applies to psychological

verbs with a [+c] role like *plašiti* “scare”. As seen in (19a), just like with *break*-type verbs, the external argument of *plašiti* “scare” is consistent with Agents, Instruments and Causes: it is a [+c] role. It follows then that *scare* can undergo Expletivization (19b). The difference between the *break*-type verbs and the *scare*-type verbs is in the way the internal role is encoded. Since the mental-state of the participant assigned the internal role of *scare* is relevant – henceforth the label ‘psych-verb’- it is encoded as [-c+m]. Syntactically, whereas the reduced entry of *break*-type verbs is unaccusative, the reduced entry of psych-verbs is unergative. This follows from the fact that whereas the [-c-m] cluster of *break*-type verbs is marked with index 2 (i.e. the instruction to merge internally), the mixed cluster ([-c+m]) of psych verbs like *plašiti* “scare” merges obligatorily externally since nothing rules it out.²⁰⁸

- (18a) Petar/Kamen/Orkan je razbio prozor_[-c-m]
Peter/stone/hurricane-Nom is broken window-ACC
- (18b) Prozor_[-c-m] se razbio
Window SE broke
- (19a) Petar/Orkan/Nož_[+c] nije plašio Maksi_[-c+m]
Peter/hurricane/knife-Nom not-is scared Max-ACC
- (19b) Maksi_[-c+m] se nije plašio
Max-Nom SE not-is scared

Just like it was shown for the outputs of Expletivization in lexicon languages (cf. Chapter 3), the differences between the outputs of Expletivization and middles in syntactic languages are sharp. The presence of the implicit role in the middle and the absence of the implicit role in derivations like (18b) and (19b) have been dealt with so far with respect to lexicon languages. Let us now complete this picture by presenting the data from syntactic languages as well. Just like in lexicon languages, the Instrument-Test (cf. Chapter 3) can be used to show that the implicit role is present in the middle in syntactic languages as well (20). The middle example in (20a) is from SC, (20b) –drawn from Reinhart and Sioni (2003) - is from French, (20c) is from Italian, and (20d) is from Polish.

- (20a) Ovakav tumor se lako uklanja laserom.
this kind of tumor SE easily removes laser-instrumental
- (20b) Les nouveaux fours se nettoient facilement avec un chiffon humide.
the new oven SE cleans easily with a rug humid
- (20c) Questo vestito si lava facilmente con Ariel.
this dress SE washes with Ariel

²⁰⁸ For an in-depth analysis, the reader is referred to Reinhart (2002).

- (20d) Jedwabne sukienki łatwo pierze się Arielem.
this dress easily washes SE Ariel-instrumental.

Just like with the reduced entries in lexicon languages, the Instrument cannot be licensed with unaccusatives in syntactic languages. Unlike with the (a)-examples in (21)-(23) that contain a syntactically realized external role, the (b)-examples in (21) - (23) do not license Instrument – since they contain no external role: explicit or implicit. The French example in (22b) is taken from Reinhart and Siloni (2003).

- (21a) Maks je razbio prozor kamenom.
Maks is broke the window with a stone.
- (21b) Prozor se razbio *kamenom.
the window SE broke-perf *with a stone
- (22a) Il a cassé la branche avec une hache.
he broke the branch with an axe
- (22b) Le branche s'est cassé *avec une hache.
the branch SE is broken *with an axe.
- (23a) Lusi przestraszyła Maksa nożem.
Lucie scared Max with a knife.
- (23b) Maks przestraszył się *nożem.
Max scared SIE with a knife.
- (24a) Ha rotto la finestra con un martello.
he broke the window with a hammer
- (24b) La finestra si è rotta *con un martello.
the window broke with a hammer

Reduced entries do not pass various other tests for the presence of the external role. For instance, as argued by Fagan (1992), reflexive adjuncts like *de soi-même* or *oneself* can only be licensed with outputs that have the implicit external role. As seen in (25), such adjuncts are licensed with French middles (25a) but not with French unaccusatives (25b).

- (25a) Cela se dit facilement de soi- meme.
that SE says easily of oneself
'It is easy to say that about oneself.'

- (25b) Quand tout s'effond autour de soi (*meme), on per la tête.
 when everything SE collapses around one (*SELF), one loses
 one's head
 'When everything collapses around one, one loses one's head.'

(Fagan (1992), after Ruwet (1976))

Last but not least, it is important to notice that there is a theory-internal argument that sets outputs of the middle formation operation apart from those of Expletivization. In both lexicon and syntactic languages, the set of verbs that allows for Expletivization is a subset of verbs that allows for Middle Formation. Recall that Expletivization applies only to [+c]-verbs and fully reduces the [+c] role of such verbs. The [+c] role of the input verb is not present in the logical form of unaccusative outputs. The logical form of (26a) is given in (26b).

- (26a) Vaza se razbila.
 the vase SE broke
 'The vase broke.'
- (26b) $(\exists e)$ [breaking (e) & [-c-m] (e, the vase)]

If the reduction of the external role could target the entries with the [+c+m] role, then one would expect verbs like *read* to give rise to unaccusative derivations. This prediction is not borne out (27). Consequently, one has to conclude that the external role reduction simply cannot target the [+c+m] role.²⁰⁹

- (27a) Maks_[+c+m] je pročitao knjigu
 Max is read book
- (27b) Max_[+c+m] read the book
- (27c) *Knjiga se pročitala.
 the book SE read
- (27d) *The book read.

Unlike Expletivization, in both lexicon and syntactic languages, the [+c+m]-verbs like *read* give rise to perfectly acceptable middles (28). It follows then that Middle Formation Operation cannot involve the reduction of the external role.

- (28a) This book reads easily.

²⁰⁹ Of course, the SC output in (27c) is grammatical on passive *the book was read* reading. This, again, is expected since passive involves saturation, not role-reduction.

- (28b) Ova knjiga se lako čita.
This book SE easily reads

Importantly for our discussion here, though outputs of Expletivization are different from all SE-outputs we have seen so far, they share with them the presence of the clitic.

So far, we have encountered six distinct outputs that are marked with the presence of the clitic SE: middle, passive, impersonal, object arbitrarization (cf. Chapter 5), reflexive and the reduced entry (unaccusatives and subject-experiencers) whose common denominator does not seem to follow in any straightforward way, either by appealing to their syntax or semantics. For instance, some of these constructions are syntactically unergative (i.e. reflexives, object-arbitrarizations and subject-experiencers); with others, the sole syntactic argument merges internally (middles and unaccusatives). Some of the outputs are the result of reduction operations (unaccusatives and subject-experiencers); others are the result of saturation operations (impersonals, middles, and passives). What all of these outputs share is that they are derived entries – entries derived by the application of one or another arity operation. The common characteristic of arity operations is that they render one of the verb’s clusters unavailable for syntactic or for both syntactic and semantic purposes. In addition to reducing the number of arguments, the arity operations must somehow take care of the Case feature as well. If the Case feature is not checked, the derivation will crash. Following Reinhart and Siloni (2003), I propose that Case-absorption is the role of the clitic SE.²¹⁰ Regarding SC, this is also consistent with the conclusion reached in Progovac (1997) who notes that “*se* is used when the verb assigns more theta roles than are realized structurally” (Progovac (1997): 87). The structural position of the clitic may depend on the case feature that it absorbs. As argued in Progovac (1997) for SC *se*, the clitic does not need to be located in the same structural position when it absorbs different cases. On Progovac’s account, it is located in the head of AgrOP when it absorbs ACC case. When it absorbs Nominative, it is located in the head of AgrSP.^{211 212}

Unaccusatives fit into the generalization under which the common denominator of the SE-outputs is that they are derived entries. Provided the ‘decompositional approach to Case’ of Reinhart and Siloni (2003) and Reinhart, Reuland and Siloni (to appear), unlike the rest of the SE-constructions that have been considered so far, unaccusatives do not constitute positive evidence for the hypothesis about the role of

²¹⁰ The argument here should not be misconstrued. The analysis here pertains only to the clitic SE. It does not extend to other pronominal clitics. For other pronominal clitics, I assume Bošković’s (2000), (2001) analysis, according to which - with respect to the theta and Case requirements - pronominal clitics (other than *se*) behave just like their non-clitic counterparts.

²¹¹ Cf. Franks’ (1995) for a similar account of both the “reflexive” and “participial” Case-absorbing morphology in Slavic languages.

²¹² An alternative is, of course, that the clitic is in the Spec, rather than the head position (cf. also Franks (1995) and Progovac (1997)). Importantly for our discussion, regardless of its position, its function is that of a Case-absorber. It is not associated with the theta-role.

the clitic as a Case-absorber. Let me explain. In Reinhart and Siloni (2003) and Reinhart, Reuland, and Siloni (to appear), all Cases have two components: the structural and the thematic component. Case, then, encodes two different relations: that of a theta argument and that of a syntactic complement.²¹³ Arity operations uniformly eliminate the thematic Acc component. In syntactic languages, the authors assume that the thematic Acc component is taken care of by the clitic. It follows then that the clitic should be obligatorily present in impersonals, middles, passives, and reflexives in Italian, for instance. This prediction is borne out. Recall, now, that Expletivization cross-linguistically applies in the lexicon. This, in turn, means that the thematic component of the Acc case is taken care of by the operation itself. Given that Expletivization takes place in the lexicon in Italian, Reinhart and Siloni predict that the clitic will not obligatorily be present in all unaccusative derivations. Indeed, unlike with middles, impersonals, passives, and reflexives, the clitic is not obligatory in all instances of unaccusative derivations. Let us illustrate this with some evidence from Italian. With *affondare* “sink”, *invecchiare* “age”, and *cambiare* “change”, for instance, *si* is disallowed. *Fondere* “melt”, *cuocere* “bake” and *refredare* “cool” optionally allow *si*. This sample of Italian data indicates that *si* is not required for Case reasons with unaccusative, which is predicted on the account of Reinhart and Siloni and Reinhart, Reuland, and Siloni. Note, however, that the clitic is obligatory with the unaccusative member of the pair with *rompere* “break”, *alterare* “alter”, and *svegliare* “awake”, for instance.²¹⁴ Whereas it is clear that the clitic is not required with unaccusatives, it is not clear why the clitic is obligatorily present with some of them. On Reinhart’s account, whether an unaccusative will select *si* is determined in the lexicon. Judging by this sample of Italian data, the variability in the appearance of the clitic seems to suggest that one is, indeed, dealing with the idiosyncrasies of the lexicon. The appearance of the clitic with those verbs that select it in the lexicon could be viewed as related to the fact that they are derived entries. As such, they could be argued to require some sort of marking that indicates that the arity operation has applied. The issue requires further research.

2.3 “Frozen” Entries

In addition to the *se*-outputs presented so far, there is one more construction mentioned in Chapter 1 that requires our attention. Recall that *se* occurs also with the frozen entries like the one given in (29). As already said, the label “frozen” indicates that there is no active transitive alternate of the V-*se* verb in SC.

²¹³ I am presenting here only those elements of the ACC Case Parameter that are relevant for our discussion here. For in-depth presentation and analysis, the reader is referred to Reinhart and Siloni (2003) and Reinhart, Reuland, and Siloni (to appear).

²¹⁴ This is but a small sample of the verbs that instantiate the three groups in Italian. The reader is referred to Folli (1999) for a comprehensive list of such verbs.

- (29) Desila **se** nesreća.
 happened SE accident
 ‘The accident happened.’

Following Chierchia (1989) and Reinhart (2000), I take it that the frozen unaccusatives like in (29) are also derived entries. The difference between them and derived entries we have seen so far is that they do not have a lexicalized transitive alternate or their transitive alternates are not related to the V-*se* verb morphologically. Chierchia (1989) proposes that unaccusative verbs like *come*, which lacks a causative alternate in English, are related to a causative verb meaning something like *bring*, but that this causative verb is either not lexicalized or is marked as being lexicalized by a verb that is not related to intransitive verb morphology. Various facts point to the validity of Chierchia’s conclusion. “Frozen” entries have unstable valency. As Chierchia points out “they tend to oscillate in valency from transitive to intransitive and *vice versa*, both diachronically and across dialects”. Chierchia notes that in Italian, one finds transitive uses of verbs like *morire* “die” and *ribellare* “uprise”. Such unstable-valency unaccusatives are not only found in Italian. For instance, the English verb *deteriorate*, which is, most dominantly, used intransitively, can find itself in transitive derivations (30b). Examples are from Levin and Rappaport (1995).

(30a) Over the years the roof_[-c-m] deteriorated

(30b) The pine needles_[+c] were deteriorating the roof_[-c-m]

Chierchia proposes that if an unaccusative entry is derived, it should have a transitive alternate in one language or another. Reinhart (2000) shows that, indeed, the set of “frozen” unaccusatives is not uniform across-languages. As pointed out by Reinhart the “the overwhelming majority” of unaccusatives verbs have an active transitive alternate in some language or another. For example, *come* and *die* do not have alternates in English, however, the Hebrew verb for *bring* is the transitive alternate of *come* (31d), with the same stem but a different verbal morphology. *Die* (31e) and *happen* (31a) in Hebrew behave in the same way. If the frozen unaccusatives are derived entries, the fact that languages cross-linguistically do not “freeze” the same entries is expected.²¹⁵

(31a) *solel* “bring about” → *hitsolel* “happen/take place”

(31b) *kiyem* “carry out” → *hitkayem* “take place/exist”

²¹⁵ Though not evident in Modern English, OE seems to behave just like Hebrew with respect to the *kill-die* pair. As pointed out by Parsons (1990), the causative-unaccusative pair related to *kill* (i.e. *cwellan* – *cwelan*) existed until the replacement of the unaccusative *cwelan* die with the *die* (related to the Old Icelandic *deyja*), which, of course, is not etymologically related to *kill*.

- (31c) *herim* “raise” → *hitromem* “arise”
 (31d) *heb’i* “bring” → *ba* “come”
 (31e) *hemit* “kill” → *met* “die”

Notice further that just like other verbs that partake in transitive-unaccusative alternation, the transitive counterparts of (31) are [+c]-verbs (32).

- (32) hamada /einstein /ha-microscop_{1+cj} xolel shinui b-a-olam.
 ‘Science /Einstein /the microscope brought-about a change in the world.’

Finally, as noted by Chierchia, a significant class of unaccusatives of this type is marked by the presence of the clitic *si* just like those unaccusatives that have an active transitive alternate in Italian. Following Chierchia (1989) and Reinhart (2000), (2002), one can give a unified account of the unaccusative character of both *break* and *die*, account for the fact that the unaccusatives like *die* are in effect unstable in their valency, and explain the presence of the clitic with both. Their uniform marking follows if both groups are assumed to have a [+c] transitive alternate from which they are derived. The difference between them is that the former can be taken to have an abstract transitive alternate, rather than an active one.

Thus, just like with the other constructions marked with the presence of the clitic SE - the seemingly frozen entries are derived entries. The advantage of an approach like the Theta System is that a great many of “seeming” idiosyncrasies are, in effect, derivable from general principles. For those that are left unaccounted for, a reasonable assumption is that either the governing generalization behind them has not yet been found, or that they are genuine “quirks” of the lexicon.²¹⁶ Namely, there is a possibility that there are genuinely frozen entries in the lexicon – entries that do not have a transitive alternate in any language. Though most of the so-called frozen entries seem to have a transitive counterpart in one language or another, Reinhart notes that cross-linguistically the only entry that seems to be frozen is *appear*. As pointed out by Reinhart, this is not necessarily conceptually problematic since - on any approach to the lexicon - if there are idiosyncrasies in the language; they are expected to be accommodated in the lexicon.

To sum, the generalization behind the outputs *si/se/šie* appears is that they are entries derived by the application of some arity operation. The role of the clitic – common to the derived entries - is to take care of the Case feature. So far, we have seen evidence that the presence of the clitic *si/se/šie* across various entries is consistent with its role as a Case-absorber. All the entries examined so far are entries derived by the application of one or another arity operation upon the base entry. The

²¹⁶ A diachronic explanation might be among of the possible candidates here. Cf. footnote 158.

question that remains to be answered is whether the clitic is in any way associated with the theta-role that is affected by the arity operation. The answer to this question is negative. Contra to some authors (cf. Cinque (1995) on Romance and Rivero (1999) on Slavic), I argue that the clitic is not an argument associated in any way with the theta-role. It is simply case-absorbing morphology. To tackle this issue, let us revisit the Impersonal SE-construction.

2.4 Impersonals Revisited: Impersonal SE in Transitive Context

Though the term impersonal often refers to the SE-outputs of one-place verbs like the SC example in (33a), it also includes sentences involving transitive verbs like (33b) and (33d) from SC or (33c) and (33e) from Italian. The examples in (33c) and (33e) are from Cinque (1995).

- (33a) U Italiji se puno radi.
in Italy SE a lot works.
'In Italy people work a lot.'
- (33b) Roditelje se poštuje.
parents-ACC SE respect
'One/people, in general (should) respects parents.'
- (33c) Da qui, si vede le montagne.
from here SE sees-Sg the mountains
'One sees the mountains from here.'
- (33d) Roditelji se poštuju.
parents-Nom SE respect
'One/people in general respect parents.'
- (33e) Da qui, si vedono le montagne.
from here, SE see-Pl mountains
'One sees the mountains from here.'

For sentences like (33c) and (33e) Cinque (1995) uses the label "impersonal *si* in transitive context". What unifies the prototypical (33a), the non-agreeing (33b) and the agreeing (33d) impersonal construction is their semantics. All the sentences in (33) are interpreted as the arbitrary *they*-construction in English or *on* in French. There are important differences between the syntax of the two types of impersonals in transitive context. The syntax of the construction in (33b) and (33c) is truly "impersonal". Just like with prototypical impersonals, with "non-agreeing impersonal SE in transitive context", saturation applies to the external argument of the verb. The external role it is not linked in the syntax, but it is present in the semantics. The Spec, IP position is occupied by the expletive *pro*. Just like with the prototypical impersonals, the verbal agreement is default. Just like with regular

impersonals, the Case feature absorbed in Nominative. The internal argument gets its theta-role and checks its ACC feature in a standard fashion. The internal argument of the verb either stays in its base generated position (cf. Italian) or - plausibly - moves to the CP domain: the domain where the illocutionary force of the sentence is encoded.²¹⁷ This typically happens in both SC and Polish (34).

- (34) [CP parents-acc [IP pro_{expletive} [I SE [VP respect t_i]]]

Unlike the sentences in (33a) - (33c), whose syntax is given in (34), the syntax of (33d) and (33e) is not impersonal. There is agreement in person and number between the surface subject (notional object) and the verb. I argue that syntactically examples like (33d) and (33e) look just like the passive and the middle-SE (35).²¹⁸

²¹⁷ I am ignoring the internal architecture of the CP since it is not relevant for our purposes here. It suffices to say that if *the parents* are taken to be the “given” - old information, the DP will end up in Spec, TopP. If it is taken to constitute new information, it will end up in Spec, FocP.

²¹⁸ The similarities are not only syntactic. It is often noted that “agreeing” impersonals in Italian cannot be told apart from *si*-passives (cf. Lepschy and Lepschy (1977)). Indeed, when eventive, impersonals like (33d) and (33e) do not seem to be any different from ARB-passives. When impersonals like (33d) and (33e) are interpreted quasi-universally, they are quite similar to middles. The difference between them and middles seems to be in the way semantic material is partitioned. As already said (cf. Chapter 3), I leave the issue of whether different partitioning of the semantic material can account for the fact that adverbs like *passionately* are permitted with impersonals (i) – (ii) for further research.

- | | | |
|------|---|----------|
| (i) | U Italiji se strastveno igra fudbal.
In Italy SE passionately play football.
‘People in Italy play football passionately.’ | (SC) |
| (ii) | We Włoszech gra się w piłkę nożną z pasją.
In Italy plays SIE football with passion
‘People in Italy play football passionately.’ | (Polish) |

The second difference between middles and agreeing-SE in transitive context is that the interpretation of the latter ranges across different modal interpretations, whereas with middles it seems to be typically limited to the capability reading. The French example in (ii) is from Boons et al. (1976), and (i) is from SC. Sentences like (i) - (ii) prescribe how “one/people, in general should eat frog legs”. Formalizing these intuitions is outside of the scope of this research. A plausible assumption is that an approach to semantics of Gen as a modal operation like Kratzer (1981) should account for the different modal interpretation here (cf. also Krifka et al. (1995) for discussion).

- | | |
|------|---|
| (i) | Zablji bataci se jedu prstima.
Frog-legs SE eat with fingers |
| (ii) | Les cuisses de genouilles se mangent avec les doigts.
the leg of frogs SE eat with the fingers
‘One/people in general (should) eat frog legs with fingers.’ |

The external role is saturated. SE absorbs the ACC feature. The internal argument moves to Spec, IP for Case/EPP reasons.

(35) [IP parents-Nom [I SE[_{VP} respect t]]

Regardless of the differences between agreeing and non-agreeing impersonal SE in transitive context, it is important to stress the agreeing and the non-agreeing outputs like in (33c) and (33d) allow for the same interpretation. Regarding the Slavic group of languages, the same conclusion is reached in Siewierska (1988) in comparing Polish – a language which is argued by Siewierska to allow the use of the non-agreeing SE in transitive context quite freely and languages like Czech that are argued not to allow the non-agreeing construction. As indicated by the translation of (33b) and (33d) the same is true of SC. The same conclusion seems to be valid for Italian agreeing (36a) and non-agreeing construction (36b) as well. Examples in (36) and their paraphrases are from D’Alessandro (2003).

(36a) In Italia si mangiano gli spaghetti.
in Italy si eat-3PsPl the spaghetti-PlMasc
‘In Italy people eat spaghetti’

(36b) In Italian si mangia spaghetti.
in si eats-3PsSg spaghetti-PlMasc
‘In Italy, people eat spaghetti.’

Finally, the Polish impersonal in (37a) – drawn from Siewierska – is equivalent in interpretation not just to its SC counterpart in (37b) but – according to the native speakers I have interviewed – to its agreeing Polish counterpart in (37c).

(37a) Owe przesady dzisiaj inaczej się interpretuje.
these prejudices-ACC today differently SIE interpret-3Sg

(37b) Ove predrasude se u današnje vreme drugačije interpretiraju.
these prejudices-Nom today differently SE interpret-3Pl

(37c) Owe przesady dzisiaj inaczej się interpretują.
these prejudices-Nom today differently SIE interpret-3Pl
‘One interprets these prejudices differently today.’

The existence of the non-agreeing SE in transitive contexts raises a lot of interesting questions.²¹⁹ Firstly, it looks quite unusual among the “saturation”-constructions (e.g. middles, regular passives, SE-passives, and “agreeing” impersonals) as it absorbs nominative and leaves the ACC. Secondly, unlike the agreeing-impersonal

²¹⁹ For further peculiarities of Italian non-agreeing SE in transitive context, the reader is referred to D’Alessandro (2003).

in transitive context, the availability of the non-agreeing SE in transitive context cuts across the Romance and Slavic groups: some Slavic and Romance languages allow it whereas others disallow it (cf. Franks (1995), Cinque (1995) and Rivero (1999)).

Various accounts in the literature have been proposed to account for the variation across-languages with respect to the existence of the non-agreeing construction. For instance, Franks (1982) compares Russian - a language that disallows the non-agreeing construction - with Polish - a language that allows it - and proposes that the existence of the non-agreeing construction is dependent on the type of morphology a language uses. He relates the availability of the non-agreeing construction to the different status of the Case-absorbing morphology in languages that allow the construction from those that disallow it. He concludes that it is disallowed in Russian since Russian uses a bound suffix *-sja*, whereas it is allowed in Polish since it uses a clitic *-się*. Being a clitic, *się* is more moveable and, henceforth, able to absorb either Nominative or ACC, whereas the bound morphology has no such choices. As Franks (1995) points out, there are clear empirical difficulties with such an absolute approach to the Case-Absorption Parameter. It is a well-known fact (cf. Sobin (1985) and Franks (1995)) that Ukrainian bound morphology can apparently absorb Nominative, leaving the ability of the verb to assign ACC intact.

- (38) Stadion **bulo zbudovano** v 1948 roc'i.
stadium-ACC be-PastNeuter build-ParticipleNeuter in 1984

(Sobin (1985))

To the Ukrainian data, I would like to add data from Ute, which exhibits two distinct types of bound morphology for two different outputs of saturation. Givón (1981), (1988) describes in detail two types of passive in Ute. Whereas the first type of passive seems comparable to that of English, the second type - which he calls the impersonal-passive - seem to resemble the Ukrainian cases like (38). Namely, the surface subject in (39b) is base generated as the object and it retains its objective-case marking. There is no agreement between the verb and the surface subject and the suppressed agent is some unspecified person. Just like in Ukrainian (38), the element employed in such a construction is a bound morpheme *-ta*, not a clitic (39b). Consequently, appealing to the different status of the case-absorbing morphology (i.e. participial versus clitic) does not seem to be the right way to account for this phenomenon.

- (39a) ta'wa-ci sivaatu-ci paxa-xa.
man-SUBJ goat-OBJ kill-ANT

- (39b) sivaatu-ci paxa-**ta**-xa.
 goat-OBJ kill-Pass-ANT
 ‘The goat was killed (by some unspecified person).’

(Givón (1988))

Another way of accounting for the difference between the languages that allow and languages that disallow the non-agreeing construction is by appealing to the dual status of the clitic in question. With respect to Slavic languages, it has been argued - particularly in Polish literature - that the implicit argument is actually realized as a surface subject of the non-agreeing construction, the clitic *się* being among the possible candidates for this realization.²²⁰ It should follow then that those Slavic languages that do not utilize the non-agreeing impersonal construction lack this argumental use of the clitic. The most elaborate analysis where the clitic is argued to have the dual - argumental and non-argumental - status is developed by Cinque (1988), (1995). The non-argumental *si* is associated only with Case, whereas the argumental *si* is associated with both Nominative and the external theta-role. Middles, passives and - contra to the Polish literature - the non-agreeing SE in transitive context are the instantiations of the [-arg] uses of the clitic. The [+arg] uses of the clitic are found in prototypical impersonals like (33a) and with agreeing construction in transitive context, as in (33e). Since they are elements with different status, the two uses of clitics behave differently. For instance, on Cinque’s account, the fact that *by*-phrases are not licensed with prototypical impersonals follows from the fact - that being an argument - a [+arg] *si* must retain the theta-role. The role cannot be reassigned to another position, i.e. to a DP complement of *by* (40a). In passives, on the other hand, Cinque argues that the reassignment of the theta-role is possible since *si* is not an argument and does not need to retain the theta-role (40b).

- (40a) Ieri si e ballato *da tutti.
 yesterday it was danced by everybody
- (40b) Questo giornale si legge ogni mattina da motissima gente.
 this paper SI reads every morning
 ‘This paper is read every morning by lots of people.’

Extended to other Romance languages, the analysis predicts that those languages that disallow the non-agreeing construction simply lack the [-arg] use of the clitic. This is exactly what Cinque (1995) claims for Romanian. The dual analysis of the clitic raises various questions with respect to the languages under consideration here. With respect to Italian, notice first that certain empirical facts do not follow from the dual-clitic approach. Just like in passives, on Cinque’s analysis the “middle *si* is a pure [-agr] passivizer” (Cinque (1995): 173). If the reassignment of the theta-role

²²⁰ The reader is referred to Siewierska (1988) for references and discussion.

depends on the argument versus non-argument status of *si* -as argued by Cinque - one might expect the middle-*si* to be able to reassign the theta-role to another position. This, however, is not the case (41). The example is drawn from Cinque (1995).

- (41) Questo vestitio ha il vantaggio di potersi lavare *da tutti.
This suit has the advantage of SI being able to wash *by
everybody

Further, though Cinque (1995) relates the absence of the [-arg] use of *se* in Romanian to the lack of not just the non-agreeing construction but also to the lack of *se* with copular verbs. This seems to be at odds with the fact that Romanian must have a [-arg] *se* simply because it has the middle and the passive-*se*. Since on Cinque's (1988), (1995) account both of these are the instantiations of the [-arg] use of the clitic, this directly falsifies the claim that Romanian does not have the [-agr] use of the clitic. Notice further that the SC looks rather puzzling if the various uses are parameterized in terms of [+/-agr] use of the clitic since it freely allows *se* with unaccusatives like *die* but not with the copular verbs like *be*. A similar observation can be made for Polish. Namely, though all my informants accept the non-agreeing *się* in transitive context, they judge the *się* with copular *be* as ungrammatical. Last but not least, recall that with all the SE-outputs in SC and Polish, *by*-phrases are illegitimate. If the availability of a *by*-phrase is to be explained based on the [+/-arg] parameter for the clitic, then SC and Polish would have to be argued not to have the [-arg] SE, though they exhibit all the constructions characteristic of it.²²¹

In addition to the empirical problems that arise from relating different constructions with presence of absence of the [+/-arg] clitic in a given language, Polish offers a very straightforward piece of evidence that shows that - across different uses of *się* - the clitic, in effect, behaves uniformly.

In Polish, predicative adjectives agree with the NP/DP with respect to all the relevant features, where the relevant features are person/number/gender and, crucially for our discussion, case.²²² With respect to the case marking, primary and secondary predicate adjectives exhibit two patterns: they are nominative if there is a nominative subject - null or overt - to agree with (42). The agreement is obligatory:

²²¹ Note that in the light of the Greek middle (which is argued to license arbitrary *by*-phrases (cf. Chapter 3)), the unavailability of Italian and SC middles to license a *by*-phrase cannot even be simply written off as an (inexplicable) cross-linguistic characteristic of middles. In the light of the discussion in Chapter 5, however, there might be an alternative account for the Greek data. If, as argued by Papangeli (2004), Greek is a syntactic language, then those instances where a *by*-phrase is licensed in Greek could as well be ARB-passives, rather than middles. I leave these issues for further research.

²²² The test is inapplicable in SC (as well as in Slovene and Slovak, for instance) since they exhibit what is called a "second nominative" (cf. Franks (1995)) in the same environments, and not the default instrumental (with predicative adjective) or dative (with semipredicatives).

if there is an element that is associated with nominative case and a theta-role, predicate must agree with it (cf. Franks (1982), (1995) and the references there for elaborate discussions of the phenomenon).

(42a) Maks jest młody/*młodym
Max is young-Nom/*smart-Instrumental

(42b) Jest młody/*młodym
pro_{thematic} is young-Nominative/*Instrumental

If there is no such element, the agreement on the predicate is obligatorily default – instrumental – as is the case in tenseless clauses containing PRO (43). Though PRO has a theta-role, it is either assumed to be caseless or marked with a zero-case. Crucially, it never receives nominative. Consequently, if an element is associated only with a theta-role, nominative agreement cannot be licensed on the primary or secondary predicate.

(43a) PRO być młodym/ *młody
to be young-Instrumental/*young-Nominative

(43b) PRO bycie szczerym/*szczery
being sincere-Instrumental/*sincere-Nominative

The next question that naturally arises is what happens with the cases where the element is argued to have Nominative but lacks a theta-role. A candidate to test is the expletive *as* in (44). As in other Slavic languages, expletives in Polish are null. Suppose for the sake of argument that null expletives indeed behave like their overt counterparts in having Nominative and lacking a theta-role.²²³ As seen from (44), the association with Case alone is not enough to license the nominative agreement on the predicate.

(44) pro_{expletive} dobrze jest [PRO być *młody/młodym]
it good is PRO to be *young-Nominative/young-Instrumental

Thus, the conclusion is that the nominative agreement on the secondary predicate will be licensed only if there is an element that is both nominative and has a theta-role. In all other cases, the agreement on the secondary predicate is default – instrumental (cf. (43) and (44)).

²²³ This issue is a matter of dispute. At the core of the controversy is the issue of the reasoning behind the Case on null expletives. Namely, neither for PF nor for LF reasons are they required to have case. Since they do not have a theta-role, they do not need case for LF visibility. Since they are null, they do not need case for PF visibility. The issue is outside of the scope of our discussion and the reader is referred to Franks (1995) for detailed discussion of this issue.

The agreement pattern of semipredicatives like *sam* “alone” is similar to that of predicative adjectives. For licensing of nominative agreement on the semipredicate, a clause must contain an element that is nominative and has a theta-role (45a) and (45b). If there is no such element, the default agreement with semipredicatives like *sam* “alone” is dative, not instrumental (45c).

- (45a) Maks jest *sam*/**samemu*
Max is alone-Nominative/*alone-dative
- (45b) Maks śpiewa *sam*/**samemu*
Max sings alone-nominative/alone-dative
- (45c) PRO gotować **sam*/*samemu*
to cook alone-*Nominative/alone-Dative

Let us now move the *się*-outputs and check out the agreement pattern that occurs with them. Let us start by checking whether there is an element associated with Nominative and a theta-role in non-agreeing impersonals in Polish. As seen in (46a) when there is an element associated with Nominative case and the external role, the agreement on the secondary predicate is obligatorily nominative. Notice, now, that with non-agreeing impersonals - (46b) and (46c) - the agreement pattern is default – dative in (46b) and instrumental in (46c). Since the licensing of Nominative on the secondary predicate is contingent on the existence of an element that is associated with Nominative and a theta-role, then one has to conclude that such an element is absent from (46b) and (46c).

- (46a) Maks buduje gniazda *sam*/**samemu*
Max builds nests-ACC alone-nominative/alone-dative
- (46b) Gniazda buduje się *samemu*/**sam*
nests-ACC build SE alone-dative/alone-nominative
‘One builds nests alone.’
- (46c) Gniazda buduju się pijanym/**pijany*
nests-ACC builds SE drunk-instrumental/*drunk-nominative
‘One builds nests drunk.’

Notice, however, that though the data like (46b) and (46c) constitute an argument against claims in the Polish literature that there is an element - *się*, for instance - that is associated with Nominative and a theta-role, they do not constitute an argument against Cinque’s (1988), (1995) analysis of the clitic in the non-agreeing construction. Recall that Cinque proposes that instances of impersonals where no agreement obtains should be analyzed as instances of the [-arg] use of the clitic. Translating Cinque’s account to Polish, one could say that the non-agreeing impersonal would be actually expected to trigger the default agreement since the clitic is not an argument – it is not associated with Nominative and the external

theta-role. Let us turn to the uses that Cinque (1988), (1995) labels as [+arg] uses of the clitic. On Cinque's account, the +arg uses of the clitic are restricted to cases of unergatives and to the cases of the "agreeing" construction in transitive context. Let us, then, test the agreement pattern with cases that are argued to exhibit this argumental use of clitic. Recall again that Cinque's +arg clitic is associated with the external theta-role and Nominative. If the clitic is associated with Nominative and the external theta-role, one would expect the agreement triggered on the secondary predicate to be nominative just like in (47).

- (47a) Maks pracuje sam/*samemu
Max works alone-nominative/alone-dative
- (47b) Maks śpiewa sam/*samemu
Max sings alone-nominative/alone-dative
- (47c) Maks tańczy sam/*samemu
Max dances alone-nominative/*alone-dative

Notice, however, that none of the impersonal outputs (48) of unergative verbs in (47) allow nominative on the semipredicate *sam* "alone". Further, the default agreement also obtains with the predicate adjectives (49).

- (48a) Podczas karnawału nie śpiewa się samemu/*sam
during carnival not sings SE alone-dative/alone-nominative
'One does not sing alone on the carnival.'
- (48b) Podczas karnawału nie tańczy się samemu/*sam
during carnival not dance SE alone-dative/*alone-nominative
'One does not dance alone.'
- (48c) Pracuje się samemu/*sam
works SE alone-dative/*alone-nominative
'One works alone.'
- (49a) Podczas karnawału nie śpiewa się gołym/*goły.
during carnival not sings SE naked-instrumental/naked-nominative
'One does not sing alone on the carnival.'
- (49b) Podczas karnawału nie tańczy się pijanym/*pijany.
during carnival not dance SE drank-instrumental/*drank-nominative
'One does not dance drunk.'

- (49c) Nie pracuje się gołym/*goly.
 not works SE naked-instrumental/*naked-nominative
 ‘One does not work naked.’

There are two conclusion to be drawn based on the behavior of the clitic in (46b)-(56c) and (48)-(49). Firstly, the fact that the clitic behaves uniformly in (46b)-(46c) and (48)-(49) points to the conclusion that the clitic does not have a dual status across the different SE constructions it occurs in. Secondly, the fact that it fails to trigger nominative agreement points to the fact that it is not associated with both Case and a theta-role. Simply put, the clitic is not an argument.

One could, however, argue that since *się* does not occupy the syntactic position of the argument - Spec, IP/TP - it simply fails to count as a licenser of nominative marking, not because it lacks a theta-role, but because it is in the wrong structural position. One could, then, further argue that it is due to its position that both the argumental and the non-argumental clitic exhibit the same behavior, though for different reasons. Namely, one could argue that the even though the clitic is associated with nominative and the theta-role in the case of its argumental use, it still does not qualify for licensing of the nominative agreement since it is not in the argument position itself. The clitic would be an illegitimate licenser purely on configuration grounds. Notice however that this does not seem like a viable way out for two reasons. On Cinque’s (1995) account, the argumental clitic is co-indexed with the [DP, IP] position i.e. it is in the chain with the expletive *pro*. This, in turn, means that the relationship between the clitic and the expletive argument is mimicking the relation between the regular expletive-argument pairs. Expanding on Burzio’s (1986) observation that expletive-argument pairs have the locality properties of NP-movement chains, Chomsky (1986) proposes that at LF, they are such chains. In other words, what Chomsky (1986) proposes is that the NP/DP in (50a) undergoes a special type of NP-movement replacing the expletive at LF as in (50b).

(50a) There_i arrived a man_i

(50b) A man_i arrived t_i

Indeed, Cinque (1995) points out that it is quite likely that the argumental clitic replaces the expletive *pro* at LF. If this is the right analysis and if the clitic were to be associated with Nominative and the external theta-role, it would actually be exactly in the right place at the right time as far as the licensing of the nominative case on the secondary predicate is concerned. Namely, as argued in the literature (cf. Bailyn and Citko (1998) and Bailyn (2001)) nominative on predicates (primary as well as secondary) is licensed at LF, as in (51a).²²⁴

²²⁴ The reader will notice that the authors follow Chomsky (1995) and Koizumi (1995) in assuming the existence of double layered specifiers with AP ending up in the higher Spec, TP position and then NP/DP in the lower Spec position.

(51a) $[_{TP} [_{AP}_i [_{TP} [_{NP/DP} [_{TP} [_{T'} [_{T'} t_j [_{VP} \dots [_{SC} \dots t_i]]]]]]]]]]]]]$

Under such an account, for (51b), the relevant LF configuration would be the one in (51c).

(51b) Maks tańczy sam.
Max-nominative dances alone-nominative

(51c) $[_{TP} [sam_i [_{TP} [Max_j [_{TP} [_{T'} [_{T'} \dots t_j [_{VP} \dots t_i]]]]]]]]]]]$

If the clitic in (52a) replaces the expletive at LF, it finds itself in exactly the right position for nominative agreement to be triggered (52b). If the clitic in (52b) were an argument, it should count for the purposes of licensing of Nominative. Since the nominative agreement is not triggered, the conclusion is that the clitic is not an argument.

(52a) Podczas karnawału tańczy się samemu/*sam
during carnival dance się alone-dative/*alone-nominative
'On the carnival, one dances alone.'

(52b) $[_{TP} [_{AP}_i [_{TP} [clitic_j [_{TP} [_{T'} [_{T'} t_j [_{VP} \dots t_j [_{SC} \dots t_i]]]]]]]]]]]]]$

To sum up, the fact that the clitic behaves uniformly across various constructions that have been examined here warrants the conclusion that there is no dual use of this clitic. The clitic is not ambiguous between an argumental and a non-argumental use. With respect to the case-licensing on the secondary predicates and the semipredicative *sam* "alone", the clitic exhibits the same behavior as elements that lack a theta-role (e.g. $pro_{\text{expletive}}$) or Nominative (e.g. PRO). One could, then, hypothesize that it lacks either Case or theta-role, or both. There are two quite different ideas behind the theory of abstract Case i.e. the Case Filter. Originally, the theory of abstract case – as developed in Chomsky (1981) – rooted the assignment of abstract Case in purely morphologically reasons; every phonologically realized NP must be assigned Case. This line of reasoning of motivating the Case Filter or Case visibility in purely morphological terms is what can be labeled the PF visibility requirement. Another line of reasoning (cf. also Chomsky (1981)) connects the requirement for abstract Case to the Theta Criterion. Namely, in order to be visible for theta-marking at LF, an element needs to have case.²²⁵ In the works of Belletti (1988), Lasnik (1992), Raposo and Uriagareka (1990), and Franks (1995), for instance, it is argued that the Case Filter cannot be entirely reduced to the LF-visibility hypothesis and that both the PF and the LF visibility requirements are active in UG. Elements like expletives could be said to require Case for PF reasons. They are not arguments i.e. they are not assigned theta roles, but they are

²²⁵ As it is well known, this purely LF visibility requirement runs in a well-known problem of PROs, which, recall, have theta roles, but lack Case, or alternatively lack the kind of case that any phonologically realized nominal requires.

phonologically realized nominal elements. The clitic is a nominal element that is phonologically realized. Consequently, one could argue that its association with Case is motivated purely on PF grounds. Notice, however, that whereas this might be a straightforward account for the expletives, it is not actually so straightforward in the case of clitics. They are weak elements – in phonology they are affixes that need to attach – cliticize – onto a host. Consequently, one could argue that the clitic itself does not require Case on either LF or PF grounds. One could then conclude that it is not the properties of the clitic, but the fact that some element is needed to check case that warrants its association with the case feature. Recall that all the derivations in which the clitic appears are outputs derived by application of arity operations. While arity operations render one of the verb's arguments unavailable for syntactic (or both syntactic and semantic purposes), the 'extra' case feature is taken care of by the clitic. Consequently, it is not the need to get case, but the need to get rid of the case that warrants the association of the clitic with it.

Stipulating that a clitic has a different status across different SE-constructions in a single language, then, cannot account for the availability of the non-agreeing construction. On Franks' (1995) account, the relevant factor for the availability of the non-agreeing construction is the way the expletive-drop parameter is set. The prediction of Franks' account is that the non-agreeing construction is potentially available in all Slavic languages since they are all expletive-drop languages. On Franks' account what makes the null-expletive special is that it does not require Case on either the PF or LF grounds. On the LF-side, it is non-thematic and on the PF-side of the Case Visibility parameter, it is null. Extended to the Romance languages under consideration here, Franks' analysis correctly predicts that the construction is available in Italian, but not in French. The parameter straightforwardly accounts for the fact that French does not have the non-agreeing construction since it is negatively marked for the expletive-drop parameter. Since all Slavic languages are expletive-drop languages, they should all be capable of exhibiting structures with "Nom-over-ACC" absorption. This again, gives the right result for both Polish (a "clitic" language) and Ukrainian (a "bound morphology language") since both have the non-agreeing construction.²²⁶ However, if the null-expletive parameter is taken as a sole factor, it will be straightforwardly falsified by Russian, which is a null expletive language, but which is argued not to allow the non-agreeing construction. Franks (1995) is, of course, aware of this problem and he states that the non-agreeing construction is "potentially available" in all Slavic languages. On Franks' account, "potentially available" should be read to mean that "various factors having to do with specific properties of the passive (i.e. reflexive or participial) morphemes in the individual language conspire either to admit or preclude its instantiation" (Franks (1995): p. 333). The reader is referred to Franks

²²⁶ Relating the existence of non-agreeing construction to a pro-drop parameter is not a novel idea (cf. Chomsky (1981)). What is important to stress about Franks' (1995) account is that the availability of non-agreeing construction is not related to a pro-drop parameter that lumps together thematic-pro and expletive pro. It is clear that the availability of thematic-pro is not a criterion since Ukrainian is not a thematic pro-drop language (cf. Franks (1995)) and yet it allows non-agreeing constructions.

(1995) for various possibilities of how the Case Absorption Parameter of Franks (1982) can be restated as well as to the discussion of various problems that arise with different possibilities of restating it.²²⁷ Though I leave the issue for further research, I would like to point out here that the task is far from easy and that the solution is far from obvious, as even the dialects of a same language exhibit different behavior with respect to the availability of the non-agreeing construction. To illustrate this, let us take a final look at the SC data like (33b) and (33d), repeated here as (53a) and (53b).

- (53a) Roditelji se poštuje.
Parents-ACC SE respect
'One/people, in general (should) respects parents.'
- (53b) Roditelji se poštuju.
Parents-Nom SE respect
'One/people in general respect parents.'

Based on the older 'prescriptive' grammars, Franks (1982), (1995) notes that there is a distinction between the two varieties (i.e. "štokavski" versus "kajkavski") of what used to be officially called Serbo-Croatian, with the non-agreeing construction (53a) being available in "kajkavski" and disallowed in "štokavski". The agreeing construction in (53a) is available in both.²²⁸ As a matter of fact, the facts are more complicated. Namely, for me – a speaker of the "štokavski" variety – a sentence like (53a) is fully grammatical, whereas for some other speakers of the same variety (Željko Bošković, p.c.), it is not.²²⁹ Thus, particularly in languages like Serbian,

²²⁷ The reader is also referred to Papangeli (2004).

²²⁸ Note, in passing, that the fact that "štokavski" and "kajkavski" show differences with respect to the non-agreeing construction is already quite puzzling since they share all the other uses of *se*.

²²⁹ Based on the varying judgment one finds in the literature on the non-agreeing construction, Italian seems to be quite similar to Serbian in this respect. Unlike Cinque (1988), Chierchia (1995a), notes that – unlike (ii) – the examples like in (i) are only marginally acceptable in his dialect of Italian.

- (i) Da qui, si vede le montagne.
From here, SE sees-Sg the mountains
'One sees the mountains from here.'
- (ii) Da qui, si vedono le montagne.
From here, SE see-Pl mountains.
'One sees the mountains from here.'

Cinque (1995) explicitly states that the agreeing type of examples are unmarked case in Italian (ii), whereas the non-agreeing (i) is only legitimate in certain cases, and quite marginal in others. Cinque (1995) further notes that the same situation is present in Spanish. The non-agreeing constructions in Italian receive mixed judgments by other authors as well. Whereas D'Allessandro (2003) treats them as grammatical, Lepschy and Lepschy (1977) note that

where dialects of the same languages exhibit different behavior with respect to the availability of this construction, one seems to be lacking the tools to pin-down the property that would differentiate the clitic in them. To that extent, note that that the other uses of *se* dealt with in this study are exhibited in all varieties of Serbian, which, minimally, indicates that the clitic in all the dialects is capable of absorbing both Nominative and Accusative. The only generalization that seems to be available is a descriptive generalization stating that – though the clitic is, in principle, capable of absorbing both Nominative and ACC in all dialects of Serbian - in some of the dialects, when ACC and Nominative are both present, ACC is obligatorily absorbed. As already said, the issue is left for further research.

2.5 Can the Generalization Pertaining to SE-derivations be Stated Differently?

On the analysis presented here, the common denominator of all seven *se* constructions is that they are derived by the application of one or another arity operation. The question that remains to be explored is whether the unification of the presence of the clitic across all the different constructions can be achieved in any other way. A quite common approach to the unified analysis of some of the constructions examined in Chapter 5 and in this Chapter is by appealing to the diachronic axe. Namely, the use of the same morphology can be viewed as relating these various constructions diachronically. It is a well-known fact that in classical Greek and Sanskrit, the original opposition was between active and the middle voice, not between active and passive. In the Indo-European languages, passive voice developed later and it is standardly assumed that it shares with the middle voice the semantic ‘core’ of expressing a situation in which the surface subject is affected. Namely, it is proposed in the literature that the unifying factor for the various middle uses is the notion of ‘affectedness’ of the surface subject. The notion of ‘affectedness’ does not only include ‘undergoers’ but it also applies to “an entity that can be perceived as affected in virtue of performing, not undergoing, certain actions” (Klaiman (1988): 28). As seen with the reflexive (54a) and the reciprocal (54b) derivations, this extended notion of affectedness accommodates for the prototypical function of the middle voice in classical Greek. Indeed, in the modern languages under consideration here, both the reflexive and the reciprocal constructions are marked with the presence of the same marker – the clitic SE.

- (54a) Lou-omain.
wash-middle-1SG
‘I wash myself.’

“with impersonal construction one finds the unexpected agreement in number between the verb and the object” (Lepschy and Lepschy (1977): 215). From this, one might conclude that Lepschy & Lepschy (1977) - in effect - do not recognize the existence of the non-agreeing impersonals.

- (54b) Lou-ometha.
wash-middle-1PI
'We wash ourselves.' or
'We wash each other.'
(Klaiman (1988))

Another function of the middle voice is referred to as 'plain middle' (cf. Barber (1975), Klaiman (1988)) where the subject is a performer and a beneficiary. The subject is "affected" by performing an action for his own benefit. As pointed out by Klaiman, the term used in traditional Sanskrit grammars for the middle diathesis is telling enough in this respect; whereas the term for the middle diathesis is *ātamane-pada*, where *ātamane* means 'for oneself', the term for the active diathesis is *parasmaipada*, where *parasmai* literally means 'for others'. The Sanskrit example in (55a) instantiates the 'plain middle' and the example in (55b) is an active sentence. In (55b), one can recognize the 'dative-reflexive' that is, indeed, marked in the languages under consideration here with the presence of the clitic SE. The comparable SC dative-reflexivization output is given in (55c).

- (55a) Katam karoti.
he makes-ACTIVE a mat
- (55b) Katam kurute.
he makes-MIDDLE a mat (for himself) (Klaiman (1988))
- (55c) On si šije prostirku.
he SI makes/sows a mat
'He makes/sows a mat for himself.'

The uses in (54) and (55b) are said to be the first uses of the middle voice to develop. Among the later uses are the so-called 'catalytic' functions. Judging by the analysis and the modern Indo-European counterparts of them in the literature (cf. Barber (1975), Klaiman (1988)), these correspond to the passive and the unaccusative. Thus, the 'catalytic' function finds itself giving rise to the unaccusative and the passive-middle SE, which – as we have seen in Chapter 5 - are also marked with the same morphology in languages like SC and French. An example of a "catalytic" function of the middle voice in Sanskrit is given in (56b).

- (56a) Devadatto namati dandah.
devadatta-Nom bends-ACT stick-ACC
'Devadatta bends the stick.'
- (56b) Namate danadah.
bends-Middle stick-Nom
'The stick bends.'

(Klaiman (1988))

Again, both the passive-middle and the unaccusative fit into the generalization that the notion of “affectedness” of the surface subject is the key semantic notion pertinent to the middle voice. Notice, however, that though the diachronic view can explain an impressive amount of the constructions that are marked uniformly,²³⁰ it does not seem to be adequate for the present-day languages and the shared SE morphology in the present-day uses. The two constructions examined in Chapter 5 that are missing from the diachronic generalization are Impersonals and the Object-Arbitrarization construction. It is interesting to notice that these two constructions are of relatively recent date. Importantly, notice that the operative semantic notion of “affectedness” of the surface subject does not extend to cover these two constructions. Neither in (57a) nor in (57b) is the surface subject affected by undergoing or by performing an action on itself or for itself.

(57a) Na ulici se juče pevalo.
in the street SE yesterday sang.
‘Yesterday, people sang in the street.’

(57b) Petar se gura.
Peter SE pushes
‘Peter pushes people.’

To sum, taking into account the SE-outputs of the present-day languages, the “diachronic” account does not seem to be the right generalization that underlies them. As argued here, the governing generalization behind the various SE-constructions seems to be that they are outputs derived by the application of one or another arity operation. As further argued here, the role of the clitic is to absorb case. It is in no way associated with the theta-role that is affected by the arity operation.

3. Concluding Comments

The research agenda laid out in Chapter 1 would not have been complete if the role of the clitic in middles as well as in other constructions it appears in was not examined. The assumption here is that the unifying approach to clitic SE can be achieved if the clitic is viewed as Case-absorbing morphology. Evidence from various languages that utilize the clitic SE is consistent with its role as a case-

²³⁰ Some of the problematic cases of frozen entries might also be accounted for by appealing to the diachronic axe. Just like in the modern languages, in early IE languages, unlike the majority of verbs which allowed both the active and the middle endings, some of them allowed only one series of endings. In the literature - cf. Benveniste (1971), Smyth (1974), and Klaiman (1988) - these are labeled as deponent verbs. Some of the frozen V-SE entries like *appear* that, across different languages, do not have the transitive counterpart could be viewed as remnants of these early IE “deponent” verbs.

absorber. Furthermore, the arguments presented here corroborate the hypothesis that the clitic is not associated with a theta-role. Such a unifying approach to the clitic is both conceptually and empirically desirable. I have provided the evidence that the governing generalization behind SE-constructions under consideration here cannot be found in terms of their shared semantics, syntax, or in terms of their historical relatedness. The governing generalization behind the various SE-constructions seems to be that they are outputs derived by the application of one or another arity operation.

Though the main objectives of this study have been met, the exploration of the phenomena dealt with in this study is not exhausted. Among the issues that I would like to point out here is the interface between the aspectual and thematic realm and – in particular – the interaction between the actional-aspectual domain and arity operations. To illustrate this, let us take a look at the construction in (58a). As already said, (58a) is, in principle, ambiguous between the reflexive (the output of reduction) and Object-Arbitrarization (the output of saturation) readings. Note, however, that with what is called the perfective form of the verb in (58b), the only available reading is the reflexive reading. For some reason, presumably to do with the actional-aspectual realm, saturation is no longer a viable option for (58b).

- (58a) Max se grize/se grizao.
 Max SE bites/bit-imperfective
 ‘Max bites/is biting /was biting OTHERS.’
- (58b) Max se ugrizao.
 Max SE bit-perfective
 ‘Max bit HIMSELF.’

Further, though the sample of SE-constructions under examination here is relevant, one should be aware that it does not exhaust the full range of SE-constructions. Space prevents us from even touching upon the properties of the extremely intriguing construction in (59a), usually labelled in the literature as “the dispositional construction”.²³¹

- (59a) Jedu/jele su mi se jagode.
 eat-3PsPl/ate-imperfective are to me-Dat CL SE strawberries-
 Nom
 ‘I feel/felt like eating strawberries’
- (59b) *Pojele su mi se jagode.
 ate-perfective are to me-Dat CL SE strawberries.

²³¹ The reader is referred to Schoorlemmer (1991), Franks (1995) and Marusic & Zaucer (2003) for accounts of this construction in different Slavic languages.

It is interesting to note that – at least in SC – the construction seems to be allowed with any type of verbal entry, as long as the verb is not perfective (59b). The only available reading for (59b) is reflexive *My strawberries ate themselves up*, which is clearly deviant. Consequently, there is further mystery and challenge not just in the domain of middles but in the domain of SE-constructions as well.

Concluding Summary

The main objective of this study is to provide an account of the core syntactic and semantic properties of middles across a sample of languages. The starting point of the inquiry was to explore the common characteristics that pertain to middles in English and SC and identify those that hold for middles across languages. A further goal was to account for the differences between middles in English and SC; to pinpoint the domain(s) in which they occur as well as to provide the answer to the question of why they occur. The initial hypothesis was that differences between English and SC are not only relevant for these two languages, but reveal a deeper pattern of cross-linguistic parameterization. To facilitate the testing of this hypothesis, in addition to English and SC, the scope of this study includes also Dutch, French, Hebrew, Italian, and Polish. As shown in this study, Dutch, English and Hebrew pattern together as the middle formation operation applies in the lexicon in these languages. French, Italian, Polish and SC pattern together as the middle formation operation applies in the syntax (LF) in these languages.

Chapters 1, 2 and 3 can be viewed as a ‘clearing-the-grounds-for-middles’ unit as they provide an ‘identity card’ of middles and the tools instrumental in capturing them in the languages under consideration here.

Chapter 2 examines in more detail and from a critical perspective certain aspects of Reinhart’s Theta System, the theoretical framework that is assumed in this study and presented in Chapter 1. Middles have previously posed some serious problems to the Theta System. For these and several other problems in the system, it was necessary to introduce some modifications. Chapter 2 focuses on the properties of feature clusters and the rules that regulate their co-occurrences. In interpretative terms, underspecified clusters are argued to be potentially problematic in that they are ‘thematically deficient’. The discussion in this Chapter sheds some light on the type of ‘thematic deficiency’ of underspecified clusters and the way this ‘thematic deficiency’ is repaired. By critically examining the implications of the notion ‘underspecified clusters’, I propose that a new principle – the Full Interpretation of Thematic Roles (1) – needs to be added to the assumptions of the Theta System. This principle is guided by the Non-Identity Constraint (2), which is a core constraint operative at the interface between the system of concepts and the computational system as well as at the interface between the computational system and semantics.

- (1) Full Interpretation of Thematic Roles
For the purposes of interpretation, all clusters must be fully specified.
- (2) The Non-Identity Constraint
An n-place verb, $n > 1$, is encoded in terms of non-identical feature clusters.

On the analysis proposed here, the Full Interpretation of Thematic Roles (FITR) and the Non-Identity Constraint ensure that all participants stand in distinct and fully-defined relation to the event in question. As an added bonus, in terms of the Full Interpretation of Thematic Roles, I provide a possible solution to one of the long-standing mysteries in linguistics – the Animacy Restriction in the Double Object Construction. Further, the principle allows a better understanding of the necessity of the Cluster Distinctness Constraint as a constraint of natural language. Through the prism of the FITR, I propose a redefinition of this formal constraint (4).

- (4) Cluster Distinctness Revisited
Two underspecified clusters are indistinct if there is a construal under which they are identical.

In its empirical coverage, the Cluster Distinctness Constraint Revisited is equal to the original Cluster Distinctness Constraint. Being tied to the Non-Identity Constraint, the redefinition has explanatory power with respect to the environments this formal constraint is active in, as well as with respect to the notion of ‘indistinct clusters’. Another issue that is dealt with is the status of arguments versus adjuncts in the Theta System. As shown in Chapters 3 and 4, addressing this issue has important consequences for the account of middles in languages such as English. Recipient Goals are not allowed to realize in English middles (either as DPs or as PPs), as seen by the contrast between (5a) and (5b). Directional-goals readily realize in the middle derivation (5c).

- (5a) Big presents ship easily.
- (5b) *Big presents don’t ship friends/to friends easily.
- (5c) Big presents don’t ship easily to foreign countries.

As argued in Chapter 2, the rules regulating the co-occurrences of feature clusters are tied to the Non-Identity Constraint. This facilitated the conclusion in Chapter 3 that the effects of the restriction on the co-occurrences of feature clusters that is operative in (5b), should be absent from (5c) as the rules regulating the co-occurrences of feature clusters are operative only on feature clusters of a single predicate. The issue of what should count as a feature cluster also has broader implications for the Theta System. It is argued that some adjuncts are best analyzed as not being encoded in the Theta System, whereas an alternative account was

proposed for others. On the account presented in Chapter 2, the ‘thematic deficiency’ of the cluster of Dative Goals (i.e. [-c]) is argued to be repaired by the FITR. This naturally led to the question of the role of the Dative-*to*. The answer to the question led us to a fine-grained approach to prepositions. Namely, it was argued that prepositions fall into two groups: semantically vacuous prepositions and semantically contentfull prepositions. The presence of semantically vacuous prepositions was argued to be motivated by Case reasons. Following Parsons (1990), I argue that they do not appear in the logical form of a sentence. Semantically contentfull prepositions contribute to the meaning of the sentence. As such, they are always present in the logical form of the sentence. This allows us to capture the relatedness of Dative Goals and Locative Goals. Their relatedness was formally represented here by encoding them both as [-c] clusters. As argued, whereas the FITR applies in the former case, it does not apply in the latter.

Another modification of the Theta System, which was introduced in Chapter 4, is establishing the existence of the underspecified ([]), a cluster not specified for any of the features. The feature system requires such a cluster to be well defined logically, but there has been so far no empirical evidence for its existence (which would be a serious problem). I show that this feature cluster is operative in Middle Formation in languages of the English (lexicon) type.

In Chapter 3, the characteristics of middles across languages are examined. In descriptive terms, the core of what middles are can be summarized as follows:

- (i) Middles are characterizing - generic statements (i.e. ascribing properties to entities, involving quasi-universal reading, typically with a modal flavor of capability or potentiality).
- (ii) The external role of middles is not linked in the syntax, but it is always present in the semantics and interpreted as ARB with +human flavor.

Given these properties, both the defining and the delimiting of the scope of the investigation into middles are facilitated. Derivations that ascribe properties to entities but do not have an implicit external role (e.g. stative or generic unaccusatives in section 2.2.2 of Chapter 3) should not be treated as middles. Eventive outputs that - for all intents and purposes - look just like middles in syntactic terms (e.g. *se/si*-passives in Slavic and Romance languages) should also not be confused with middles. As argued in Chapter 5, these instances are best treated as ARB-passives. Given the fact that middles are generic statements, their stativity – a trait often taken to be the defining characteristic of middles in the literature - follows straightforwardly. Given the quantificational analysis of generics (cf. Krifka et al. (1995)) that I adopt here, adverbial modification – often noted as a characteristic of middles – can be fully understood. The analyses of Condoravdi (1989) and Krifka et al. (1995), provide, thus, the tools to formally approach our middles.

Not all the properties of middles, however, follow straightforwardly from the presence of Gen in the logical form of middles. One needs to account for the interpretation of the implicit role as arbitrary, with +human flavor with middles in both lexicon and syntactic languages (e.g. English and SC). Further, one needs to account for the fact that the predicate of an English middle is quite peculiar as it is cannot be used to form particular sentences (cf. 2.1.3 of Chapter 3). Chapter 3 examines also the diagnostics used in the literature to tease out middle derivations. With respect to some of these diagnostics, I have argued that they are unreliable not because middles do not pass the tests in question, but because one is not sure what the tests diagnose. I have also pointed out some difficulties that arise from attempts to derive the properties of middles from the *i*-/*s*-level distinction. This discussion seems to warrant the conclusion that simply stating that middles are *i*-level predicates does not actually amount to much, as various researchers have shown that the contrast between *s*- and *i*-level predicates is not a uniform one, but that there are several, similar but independent, contrasts that seem to be lumped together. More importantly, the evidence presented in 2.1.2 of Chapter 3 warrants caution with respect to approaches to middles that build upon the premise that states do not have an *e*-role and then use this to explain why states like *love* cannot be felicitous input to the middle formation operation in some languages.

By addressing the question of what the best way to tackle the middle is, I propose that the middle construction should be tackled cross-linguistically by means of a parameterizable operation. I have shown that the properties of the middle construction are such that in some languages it applies in the lexicon whereas in others it applies in the syntax. The conclusions reached in Chapter 3 necessitated splitting up the investigation into two separate parts: Chapter 4 deals with the middle construction in ‘lexicon languages’, where a ‘lexicon language’ is a language in which middles are derived presyntactically, and Chapter 5 deals with the middle construction in ‘syntactic languages’, where a ‘syntactic language’ is a language in which middles are derived in the syntax (LF). By examining the hypothesis of whether middles across-languages can be derived in the same module, I have also pointed out certain empirical and conceptual problems that arise even with highly elaborate approaches if one attempts to propose a unified analysis for middles cross-linguistically.

The main aim of Chapter 4 was to present an analysis of the phenomenon of middles in the Dutch/English type of language. A brief overview of the main components of the approach is given here. Instead of a constraint like the Affectedness Constraint or the ‘Actor-constraint’, my claim here is that the Lexicon Middle Formation (LMF) should be constrained by the Lexicon Middle Formation Visibility Requirement (6).

- (6) The LMF Visibility Requirement
 A verb is visible to the LMF iff its verbal concept contains a
 [+c] role.

This Requirement accounts for the lexical restriction present in languages such as Dutch and English. It exhaustively defines the set of verbal concepts the LMF can apply to. It defines the set of verbal concepts that disallow the LMF and captures the common denominator such verbal concepts have. The LMF deletes the content of a [+c] cluster and creates the [] cluster - ARB-role. As shown in Chapter 4, the creation of this role directly accounts for the crucial properties of middles in the Dutch/English type of language: a) the presence of the implicit role and its interpretation as ARB, with +human flavor, b) the presence of Gen - standardly assumed to account for the generic reading of middles (cf. Condoravdi (1989), Krifka et al. (1995), and Steinbach (1998)) and the inability of the middle-verb to appear in particular sentences, c) the lack of morphological marking (the absence of the Case-absorbing morphology in middles in lexicon languages), d) the restriction on the co-realization of clusters of the base entry, and e) the unergativity of middles in Dutch and English.

In accordance with the hypothesis that the middle formation operation is a parameterizable operation (cf. Chapters 3 and 4), the main objective of Chapter 5 was to account for the properties of middles in syntactic languages – languages in which the middle formation operation applies in the syntax (LF). The first step was to show that middles in syntactic languages exhibit the cross-linguistic characteristics identified for middles in Chapter 3. This exploration allowed us to pin-point the root of the illusiveness of middles in syntactic languages. The existence of the middle comparable to the middle in Dutch and English is blurred in syntactic languages due to the fact that it shares morpho-syntax with passives, which are, semantically, quite different from middles. In both lexicon and syntactic languages, middles are generic statements. Both types of middles obligatorily retain the implicit external role, which is interpreted as ARB, with +human flavor. In both types of languages, the operation that derives middles is ARB-Generization.

Since the middle-formation operation is bound to different modules, lexicon and syntactic languages use different tools to reach their common semantic goal. Whereas lexicon languages utilize the ARB-role i.e. the [] cluster, syntactic languages utilize ARB-saturation. Namely, in lexicon languages, the process is the arbitrarization of a cluster, while in syntactic languages, it is the arbitrarization of a variable. This, in turn, is perfectly consistent with the levels at which these two types of arbitrarization apply. Whereas arbitrarization in lexicon languages applies in the lexicon, where there are only clusters, arbitrarization in syntactic languages applies at LF. As argued further in this Chapter, ARB-saturation of Chierchia (1995a) is not just an invaluable tool in accounting for impersonals in a variety of syntactic languages, but it extends to middles and ARB-passives in such languages as well as to the Object-Arbitrarization construction, which is pervasive across Slavic languages. As noted, without appealing to this special type of saturation, it is quite difficult to account for the fact that in all three constructions, the implicit role is interpreted as an unspecified, generally plural, human entity. The representation of English (7a) is given in (8a) and of its SC middle counterpart (7b) in (8b).

- (7a) *Tristram Shandy* reads easily.
- (7b) *Tristram Šendi* se lako čita.
- (8a) Gen e, x_{arb} [reading (e) & [-c-m] (e, *Tristram Shandy*) & [] (e, x_{arb})] [easy (e, x_{arb})]
- (8b) Gen e, x_{arb} [reading (e) & [-c-m] (e, *Tristram Shandy*) & [+c+m] (e, x_{arb})] [easy (e, x_{arb})]

As argued throughout this study, the differences between the lexicon and syntactic languages follow from the fact that the middle formation operation is a parameterizable operation. Whereas some of the differences follow from the very fact that middles are derived at different levels (e.g. the availability of ECM-middles in syntactic and the unavailability of ECM-middles in lexicon languages), others follow from the way the operation is executed in these two distinct modules (e.g. restrictions on the co-realization of clusters, which is active in the lexicon but not in syntactic languages). As shown on the sample of languages in this study, the choice of the parameter-setting does not seem to be determined for each of the parameterizable operations individually. Rather, it follows from the generalization in (9) and holds for various parameterizable operations with respect to a single language.

- (9) The Lexicon-Syntax Parameter (Reinhart and Siloni (2003))
UG allows thematic arity operations to apply in the lexicon or in the syntax (LF).

This, in turn, makes the setting of the parameter during acquisition much easier: by setting the parameter for one parameterizable operation; the child fixes the parameter for all of them. As further argued in Chapter 5, the existence of the ARB-passives in syntactic languages is not just explained - it is actually predicted on the account here. In lexicon languages, the presence of the underspecified [] cluster enforces the Gen operation. This cluster is derived by cluster manipulation, which is permitted only in the lexicon and cannot take place in the syntax. Since this cluster is not present in syntax languages, there is nothing to enforce Gen.

Among the intriguing properties of middles in syntactic languages under consideration here is the fact that they are marked with the presence of the clitic SE. As noted in Chapter 1, a further puzzling characteristic is that the same clitic marks a variety of outputs, which, at the first glance, do seem to have much in common. The attempt to explore this issue and the unwillingness to accept a mere coincidence as the explanation of the appearance of the same marker across a variety of derivations, led to the exploration in Chapters 5 and 6 of the underlying generalization pertaining to the presence of this clitic. The assumption here is that the unifying approach to clitic SE can be achieved if the clitic is viewed as Case-absorbing morphology, as proposed in Reinhart and Siloni (2003). Evidence from various languages that utilize

the clitic SE is consistent with its role as a case-absorber. Furthermore, the arguments in Chapter 6 corroborate the hypothesis that the clitic is not associated with a theta-role. Such a unifying approach to the clitic is both conceptually and empirically desirable. I have provided evidence that the governing generalization behind the SE-constructions under consideration here cannot be found in terms of either their shared semantics or syntax, or in terms of their historical relatedness. The governing generalization behind the various SE-constructions seems to be that they are outputs derived by the application of one or another arity operation.

Middles continue to present themselves as an important field of research in both empirical and theoretical terms. Though the main objectives of this study have been met, the exploration of the phenomena dealt with in this study is not exhausted. Some of the issues that are left for further research have been mentioned throughout this study. Just like in many other research projects on middles (cf. Keyser and Roeper (1984), Zubizarreta (1987), Cinque (1988), Fagan (1992), Hoekstra & Roberts (1993), and Ackema and Schoorlemmer (1994) to name just a few), the middle construction has also been used here as a testing ground for the interface between the system of concepts, the computational system (i.e. syntax), inference (i.e. semantics), and discourse. A particular issue that I would like to note again here is the relevance of middles for the on-going lexicalist versus non-lexicalist dispute. In this respect, it is of paramount importance to stress that, as shown on a sample of languages in this study, the differences between middles across-languages can be straightforwardly captured only if one works under the hypothesis that the language faculty contains an active lexicon. Namely, as shown in Chapters 4 and 5, a whole range of properties that lexicon and syntactic middles exhibit follows from the fact that Middle Formation is a parameterizable operation. As argued here, the parameterization, in turn, can only be accommodated in a model that contains an active, dynamic component of the lexicon.

The complexity of the phenomenon of middles resulted in an interconnectedness among Chapters that encompasses more than one issue. As already pointed out, Chapters 4 and 5 can be viewed as a continuation of the discussion regarding the structure of the lexicon, which is opened in Chapter 1. Chapter 1 presents Siloni's (2003) arguments pertaining to the domain of reflexivization across different languages, which can be captured only if one assumes that in certain languages reflexivization is bound to the lexicon, whereas it applies in the syntax in others. Chapter 4 deals with middles in English and Dutch, the proper treatment of which presupposes the existence of a 'manipulative' – rule driven - component of the lexicon, whereas in Chapter 5, the validity of the Lexicon-Syntax Parameter is tested against the data in Hebrew. The behavior of middles in lexicon languages prompted an investigation into the domain of arguments and adjuncts (Chapters 2, 3 and 4). Middles in syntactic languages, on the other hand, necessitated a closer look at the broader spectrum of SE-constructions (Chapters 5 and 6). Last but not least, I hope that the study as a whole has shown how enormously intriguing the issues on the interface between the System of Concepts and the CS, on the one hand, and the interface between the system of concepts and semantics, on the other hand, are.

Bibliography

- Aarts, B. 1992. *Small Clauses in English: The Nonverbal Types*. Berlin: Mouton de Gruyter.
- Abraham, W. 1986. Unaccusatives in German. *Groninger Arbeiten Zur Germanistischen Linguistik* 28: 1-72. Groningen: University of Groningen
- Ackema, P. 1995. *Syntax below Zero*. Ph.D. dissertation. Utrecht: LOT
- Ackema, P. and M. Schoorlemmer. 1994. The middle construction and the syntax-semantics interface. *Lingua* 93: 59-90.
- Ackema, P. and M. Schoorlemmer. 1995. Middles and Nonmovement. *Linguistic Inquiry* 26: 173-197.
- Ackema, P. and M. Schoorlemmer. 2003. Middles. Ms. UiL-OTS, University of Utrecht.
- Alsina, A. 1992. On the Argument Structure of Causatives. *Linguistic Inquiry* 23-4:517-555.
- Aljović, N. 2000. Unaccusativity and Aspect in SerBoCroatian. In C. Czinglar et al. (eds.), *Proceedings of ConSOLE 8*. Leiden: SOLE.
- Anderson, M. 1979. *Noun Phrase Structure*. Ph.D. dissertation. University of Connecticut, Storrs.
- Babby, L. 1980. *Existential Sentences and Negation in Russian*. Ann Arbor, MI: Karoma.
- Bach, E. 1982. The algebra of events. Paper presented at Sloan conference on Tense and Aspect, Ohio State University, Columbus.
- Bailyn, J. 2001. The Syntax of Slavic Predicate Case. In A. Striginet et al. (eds.), *ZAS Occasional Papers in Linguistics*: 1-26. Berlin: Zentrum für Allgemeine Sprachwissenschaft.
- Bailyn, J. and B. Citko. 1998. The Morphology of Slavic Predicates. *Proceedings of FASL VII*. Michigan Slavic Publications.
- Baker, M. 1988a. *Incorporation: A Theory of Grammatical Function Changing*. Chicago: Chicago University Press.

- Baker, M. 1988b. Theta Theory and the syntax of applicatives in Chichewa. *NLLT* 6: 353-389.
- Baker, M. 1998. Comments on the Paper by Sadock. In S. Lapointe et al. (eds.), *Morphology and its relation to Phonology and Syntax*: 188-212. Stanford: CSLI Publications.
- Baker, M., K. Johnson and I. Roberts. 1989. Passive Argument Raised. *Linguistic Inquiry* 20: 219-252.
- Barber, E. 1975. Voice – beyond the passive. *Berkeley Linguistics Society, Proceedings* 1: 16-24.
- Belletti, A. 1988. The Case of Unaccusatives. *Linguistic Inquiry* 19: 1-34.
- Belletti, A. and L. Rizzi. 1988. Psych-Verbs and Theta-Theory. *Natural Language and Linguistic Theory* 6: 291-352.
- Benveniste, E. 1971. Active and middle voice in the verb. In M. Meek (tr.), *Problems in General Linguistics*: 145-151. Coral Gables, USA: University of Miami Press.
- Benincá, P. & L. Venelli. 1984. Italiano, veneto, friulano: fenomeni sintattici a confronto. *Rivista italiana di dialettologia* 8: 165-194.
- Bennis, H. and T. Hoekstra. 1989. *Generativa Grammatica*. Dordrecht: Foris.
- Bertinetto, P. M. and M. Squartini. 1992. In M. Bertinetto et al. (eds.), *Temporal Reference, Aspect and Actuality, Volume 1: Semantic and Syntactic Perspectives*: 11-26. Utrecht: Rosenberg & Sellier.
- Bland, S. 1988. The present progressive in discourse: Grammar versus usage revisited. *TESOL Quarterly* 22: 53-68.
- Booij, G. 1992. Morphology, semantics, and argument structure. In I.M. Roca (ed.), *Thematic structure: Its role in Grammar*: 47-64. Berlin: Mouton.
- Boons, J. et al. 1976. *La Structure des Phrases Simples en Français: Constructions Intransitives*. Geneva: Droz.
- Borer, H. 2000. Exo-skeletal vs. endo-skeletal explanations: syntactic projections and the lexicon. Paper presented at the UC San Diego conference Explanations in Linguistics, December 1999.
- Borer, H. and Y. Grodzinsky. 1986. Syntactic vs. Lexical Cliticization: The Case of Hebrew Dative Clitics. In H. Borer (ed.), *The Syntax of Pronominal Clitics*. San Francisco: Academic Press: 175-217
- Bošković. Ž. 1994. D-Structure, Theta-Criterion, and Movement into Theta-Positions. *Linguistic Analysis* 24: 264-286.
- Bošković. Ž. 2000. Second position cliticization: Syntax and/or phonology? In F. Beukema and M. den Dikken (eds.), *Clitic Phenomena in European Languages*: 71-119.

- Bošković, Ž. 2001. *On the nature of the syntax-phonology interface: Cliticization and related phenomena*. Elsevier.
- Botwinik-Rotem, I. 2002. PP-Verbs: The Phenomenon of obligatory Ps. Ms. Tel Aviv University.
- Botwinik-Rotem, I. 2004. Ph.D. dissertation. University of Tel Aviv.
- Bresnan, J. 1972. *Theory of Complementation in English Syntax*. Ph.D. dissertation. MIT.
- Bresnan, J. 1982a. The Passive in Lexical Theory. In J. Bresnan (ed.), *The Mental Representation of Grammatical Relations*: 3-86 Cambridge, MA: MIT Press
- Bresnan, J. 1982b. Polyadicity. In J. Bresnan (ed.), *The Mental Representation of Grammatical Relations*: 149-172 Cambridge, MA: MIT Press
- Bresnan, J. and L. Moshi. 1990. Object Asymmetries in comparative Bantu syntax. *Linguistic Inquiry* 21: 147-185.
- Broadwell, G. 1986. Multiple Theta-Role Assignment. In J. McDonough & B. Plunkett, *Proceedings of NELS 17, Volume I*: 46-58
- Brody, M. 1989. Old English Impersonals and the Theory of Grammar. *UCLWPL 1*: 262-294. London: University College London.
- Brody, M. 1993. Theta-Theory and Arguments. *Linguistic Inquiry* 24: 1-23.
- Burzio, L. 1986. *Italian Syntax: A Government and Binding Approach*. Dordrecht: Reidel.
- Carlson, G. 1977. *Reference to Kinds in English*. Ph.D. dissertation. Amherst: University of Massachusetts. Published 1980 by Garland Press, New York.
- Carlson, G. 1984. On the role of thematic roles in linguistic theory. *Linguistics* 22: 259-279.
- Carlson, G. 1998. Thematic roles and the Individuation of Events. In S. Rothstein (ed.), *Events and Grammar*: 35-51. Dordrecht: Kluwer Academic Publishers.
- Chierchia, G. & S. McConnell-Ginet. 2000. *Meaning and Grammar*. Cambridge, MA: MIT Press.
- Chierchia, G. 1989. A Semantics for Unaccusatives and its Syntactic Consequences. Ms. Cornell University.
- Chierchia, G. 1995a. The variability of Impersonal Subjects. In E. Bach et al. (eds.), *Quantification in Natural Languages, Volume 1*: 107-143. Dordrecht: Kluwer Academic Publishers.
- Chierchia, G. 1995b. Individual-Level Predicates as Inherent Generics. In Carlson, G. & F.J. Pelletier (eds.), *The Generic Book*: 176-223.
- Chomsky, N. 1957. *Syntactic Structures*. The Hague: Mouton.

- Chomsky, N. 1965. *Aspects of the Theory of Syntax*. Cambridge, MA: MIT Press.
- Chomsky, N. 1981. *Lectures on government and binding*. Dordrecht: Foris.
- Chomsky, N. 1986. *Knowledge of language: its nature, origin and use*. New York: Praeger.
- Chomsky, N. 1993. A Minimalist Program for Linguistic Theory. In K. Hale & S. Keyser (eds.), *The View from Building 20*: 1-52. Cambridge, MA: MIT Press.
- Chomsky, N. 1994. Bare Phrase Structure. *MIT Occasional Papers in Linguistics* 5.
- Chomsky, N. 1995. *Minimalist Program*. Cambridge, MA: MIT Press.
- Cinque, G. 1988. On *Si* Constructions and the Theory of *Arb*. *Linguistic Inquiry* 19: 521-581.
- Cinque, G. 1995. *Italian Syntax and Universal Grammar*. Cambridge: Cambridge University Press.
- Clark, V. and K. Carpenter. 1989. The notion of source in language acquisition. *Language* 63: 1-30.
- Comrie, B. 1977. In Defense of Spontaneous Demotion. In P. Cole & J. Sadock (eds.), *Grammatical Relations: Syntax and Semantics* 8: 47-58 New York: Academic Press.
- Condoravdi, C. 1989. The Middle: where semantics and morphology meet. *MIT Working Papers in Linguistics* 11: 16-30.
- Corver, N. 1992. On deriving certain left branch extraction asymmetries: A case study in parametric syntax. *Proceedings of the Northeast Linguistic Society* 22: 67-84.
- Culicover, P.W. & W. K. Wilkins. 1984. *Locality in Linguistic Theory*. Orlando: Academic Press.
- D'Allessandro, R. 2003. Agreement in Italian Impersonal SI Constructions: A Derivational Analysis. Ms. University of Stuttgart.
- Dahl, Ö. 1985. *Tense and Aspect Systems*. Oxford: Blackwell.
- Davidson, D. 1967. The logical form of action sentences. In N. Rescher (ed.), *The Logic of Decisions and Action*: 81-95. Pittsburgh, PA: University of Pittsburgh Press.
- de Hoop, H. & H. De Swart. 1989. Over indefiniete objecten en de relatie tusses syntaxis en semantiek. *GLOT* 12: 19-35.
- Delfitto, D. 2002. *Genericity in Language. Issues of Syntax, Logical Form and Interpretation*. Alessandria (Italy): Edizioni Dell'Orso.
- den Dikken, M. 1992. *Particles*. Ph.D. dissertation. Leiden University.

- den Dikken, M. 1994. Auxiliaries and Participles. *NELS* 24-1: 65-79. Amherst: University of Massachusetts.
- Di Sciullo, A.M. 1990. Modularity and the Mapping from the Lexicon to the Syntax. *Probus* 2: 257-290.
- Dimitriadis, A. 2003. Event Semantics for the Theta System. Ms. Utrecht: UiL OTS.
- Dobrovie-Sorin, C. 1998. Impersonal *se* Construction in Romance and the Passivization of Unergatives. *Linguistic Inquiry* 29: 399-437.
- Dowty, D. 1979. Word Meaning and Montague Grammar. *Studies in Linguistics and Philosophy* 7. Dordrecht: Reidel.
- Dowty, D. 1991. Thematic Proto-Roles and Argument Structure. *Language* 67: 547-619.
- Dowty, D. 1996. The Dual Analysis of Adjuncts/Complements in Categorical Grammar. Published in *ZAS Papers in Linguistics* 17, 2000.
- Edmonds, J. 1986. Les parties du discours en grammaire générative'. In P. Pica (ed.), *Recherches linguistiques de Vincennes 14-15*: 93-154. Université de Paris VII.
- Everaert 1990. NP Movement across Secondary Objects. In J. Mascaro and M. Nespore (eds.), *Grammar in Progress*: 125-136. Dordrecht: Foris.
- Everaert, M. 1986. *The Syntax of Reflexivization*. Dordrecht: Foris.
- Everaert, M. 1994. The encoding of the lexical semantic structure of verbs: The case of Auxiliary selection in Idioms. In E.W. Weigand and R. Hundsnurscher (eds.), *Lexical Structures and Language Use, Proceedings of the international conference on Lexicography and Lexical Semantics in Munster, 1994*. Tübingen: Max Niemer Verlag.
- Fagan, S. 1988. The English Middle. *Linguistic Inquiry* 19, Volume 2: 181-203.
- Fagan, S. 1992. *The Syntax and Semantics of Middle Constructions: A Study with Special Reference to German*. Cambridge: Cambridge University Press.
- Fellbaum, C. & A. Zribi-Hertz. 1989. *The middle construction in French and English: A comparative study of its syntax and semantics*. Bloomington, Indiana: Indiana University Linguistics Club.
- Fellbaum, C. 1985. Adverbs in Agentless Actives and Passives. *CLS* 21: 21-48. Chicago, Illinois: Chicago Linguistic Society.
- Fellbaum, C. 1986. *On the Middle Construction in English*. Bloomington, Indiana: Indiana University Linguistics Club.
- Fiengo, R. 1980. *Surface Structure: The Interface of Autonomous Components*. Cambridge, MA: Harvard University Press.

- Fillmore, C. 1968. The case for case. In E. Bach & R. Harms (eds.), *Universals in Linguistic Theory*: 1-90. Holt: Rinehart and Winston.
- Folli, R. 1999. Causative/Inchoative Alternation in Italian. In *Oxford University Working Papers in Linguistics, Philology & Phonetics* 4: 33-49.
- Frajzyngier, Z. 1982. Indefinite Agent, Passive, and Impersonal. *Lingua* 58: 267-290.
- Franks .S.1982. Is there a Pro-drop Parameter for Slavic? *Chicago Linguistic Society* 18: 140-154.
- Franks, S. 1995. *Parameters of Slavic Morphosyntax*. Oxford: Oxford University Press.
- Givón, T. 1981. Typology and Functional Domains. *Studies in Language* 5: 163-193.
- Givón, T.1988. Tale of two Passives in Ute. In Masayoshi Shibatani (ed.), *Passive and Voice*: 417-439. Amsterdam: Benjamins.
- Goldberg, A. 1992. *Constructions: A Construction Grammar Approach to Argument Structure*. Ph.D. dissertation, University of California. Reprinted in 1995. Chicago: The University of Chicago Press.
- Goldberg, A. 2002. Surface Generalizations: an alternative to alternations. *Cognitive Linguistics*. Berlin: Mouton.
- Green, G. 1974. *Semantics and Syntactic Regularities*. Bloomington: Indiana University Press.
- Grimshaw, J. 1979. Complement selection and the lexicon. *Linguistic Inquiry* 10: 279-326.
- Grimshaw, J. 1981. Form, Function, and the Language Acquisition Device. In C.L. Baker and J.J. McCarthy (eds.), *The Logical Problem of Language Acquisition*:165-182. Cambridge, Mass: MIT Press.
- Grimshaw, J. 1990. *Argument Structure*. Cambridge, MA: MIT Press.
- Grimshaw, J. 1991. Extended Projections. Ms. Brandeis University.
- Grimshaw, J. 2000. Extended Projections and Locality. In P. Coopmans, M. Everaert & J. Grimshaw (eds.), *Lexical Specification and Insertion*: 115-133. Amsterdam/Philadelphia: John Benjamins Publishing Company.
- Gropen, J. et. al. 1992. Affectedness and Direct objects: the Role of Lexical Semantics in the Acquisition of Verb Argument Structure. *Cognition* 41: 153-195.
- Gruber, J. 1967. *Lexical Structures in Syntax and Semantics*. Amsterdam: North Holland.

- Heim, I., H. Lasnik & R. May. 1991. Reciprocity and Plurality. *Linguistic Inquiry* 22: 63-101.
- Higginbotham, J. 1985. On Semantics. *Linguistic Inquiry* 16: 547-593.
- Hoekstra, E. 1991. *Licensing Conditions on Phrase Structure*. Ph.D. dissertation, Rijkuniversiteit Groningen.
- Hoekstra, T & I. Roberts. 1993. Middle Construction in Dutch and English. In Reuland, E. & W. Abraham (eds.), *Knowledge and Language* 2: 183-220. Dordrecht: Kluwer Academic Publishers.
- Hoekstra, T. & R. Mulder. 1990. Unergatives as Copular Verbs: Locational and Existential Predication. *The Linguistic Review* 7: 1-79.
- Hoekstra, T. 1984. *Transitivity: Grammatical Relations in Government and Binding Theory*. Dordrecht: Foris Publications.
- Hornstein, N & A. Weinberg. 1981. Case Theory and Preposition Stranding. *Linguistic Inquiry* 12: 67-84.
- Hulk, A. & L. Cornips. 2000. Reflexives in Middles and the Syntax-Semantics Interface. In H. Bennis, M. Everaert & E. Reuland (eds.), *Interface Strategies*: 207-222 Amsterdam: Royal Dutch Academy of Sciences.
- Jackendoff, R. 1972. *Semantic Interpretation in Generative Grammar*. Cambridge, MA: MIT Press.
- Jackendoff, R. 1976. Towards Explanatory Semantic Representations. *Linguistic Inquiry* 7: 89-150.
- Jackendoff, R. 1987. The Status of Thematic Relations in Linguistic Theory. *Linguistic Inquiry* 18: 369-411.
- Jackendoff, R. 1990. *Semantic Structures*. Cambridge: MA: MIT Press.
- Jaeggli, O. 1986a. Passive. *Linguistic Inquiry* 17: 587-622.
- Jaeggli, O. 1986b. Arbitrary Plural Nominals. *Natural Language and Linguistic Theory* 4: 43-76.
- Jäger, G. 2001. Topic-Comment Structure and the Contrast Between Stage Level and Individual Level Predicates. *Journal of Semantics* 18:83-126. Oxford: Oxford University Press.
- Kayne, R. 1975. *French Syntax: The Transformational Cycle*. Cambridge, MA: MIT Press.
- Kayne, R. to appear. Prepositions as Probes. In A. Belletti (ed.) *Structures and Beyond*. Oxford: Oxford University Press
- Kemmer, S. 1993. *The Middle Voice*. Amsterdam/Philadelphia: John Benjamins Publishing Company.
- Kenny, A. 1963. *Action, emotion, and will*. London: Routledge & Kegan Paul.

- Kerstens, J. 2002. Variable Features and Feature Geometry in Dutch. Talk given at the TSSS, UiL-OTS.
- Keyser, S. J. & T. Roeper. 1984. On the Middle and Ergative Constructions in English. *Linguistic Inquiry* 15: 381-415.
- Kirsner, R. S. 1976. On the Subject of Pseudo-Passives in Standard Dutch and the Semantics of Background Agents: 385-415 In C. Li (ed.), *Subject and Topic*. New York: Academic Press.
- Klaiman, M. 1988. Affectedness and Control: a typology of voice system. In Masayoshi Shibatani (ed.), *Passive and Voice*: 25-83. Amsterdam: Benjamins.
- Koizumi, M. 1995. *Phrase Structure in Minimalist Syntax*. Ph.D. dissertation. MIT.
- Koopman, W. 1990. *Word Order in Old English*. Ph.D. dissertation, University of Amsterdam.
- Koster, J. 1984. On Binding and Control. *Linguistic Inquiry* 15-3: 417-459.
- Kratzer, A. 1981. The Notional Category of Modality. In H.J. Eikmayer & H.Rieser (eds.), *Papers from the Parasession on Pragmatics and Grammatical Theory*: 1-15. Chicago: Chicago Linguistic Society.
- Kratzer, A. 1995. Stage-level and individual-level predicates. In G. N. Carlson & F. J. Palletier (eds.), *The Generic Book*: 125-175. Chicago: University of Chicago Press.
- Krifka, M. 1995. Focus and Interpretation of Generic Sentences. In G. N. Carlson & F. J. Palletier (eds.), *The Generic Book*: 238-264. Chicago/London: University of Chicago Press.
- Krifka, M. et al. 1995. Genericity: An Introduction. In G.N. Carlson, & F.J. Pelletier (eds.), *The Generic Book*: 1-124. Chicago/London: University of Chicago Press.
- Landau, I. 2000. *Elements of Control: Structure and Meaning in Infinitival Constructions*. Dordrecht: Kluwer Academic Publishers.
- Landau, I. 2001. The Locative Syntax of Experiencers. Ms. Ben Gurion University.
- Lasnik, H. 1984. Random Thoughts on Implicit Arguments. Ms. Storrs, Connecticut: University of Connecticut.
- Lasnik, H. 1988. Subjects and H-Criterion. *Natural Language and Linguistic Theory* 6: 1-18.
- Lasnik, H. 1992. Case and Expletives: Notes towards a Parametric Account. *Linguistic Inquiry* 23: 381-405.
- Lasnik, H. 2000. *Syntactic Structures Revisited: Contemporary Lectures on Classic Transformational Theory*. Cambridge, MA: MIT Press.

- Lepschy, A. L. and G. Lepschy. 1977. *The Italian Language Today*. London: Hutchinson.
- Lepschy, G. 1986. Towards One Si. *Italian Linguistics* 2: 157-160.
- Levin, B. 1993. *English Verb Classes and Alternations*. Chicago: The University of Chicago Press.
- Levin, B. & M. Rappaport. 1995. *Unaccusativity*. Cambridge, Mass: MIT Press.
- Levin, B. and M. Rappaport 1994. A Preliminary Analysis of Causative Verbs in English. *Lingua* 92: 35-77.
- Lyons, J. 1977. *Semantics*. Cambridge: Cambridge University Press.
- Maling, J. 2001. Dative: the heterogeneity of the mapping among morphological case, grammatical functions and thematic roles. *Lingua* 111: 419-464.
- Maling, J. 2002. Icelandic Verbs with Dative Objects. In J. Maling et al. (eds.), *Working Papers in Scandinavian Syntax* 70: 1-59. Lund University.
- Manzini, R. 1983. *Restructuring and Reanalysis*. Cambridge, MA: MIT Press.
- Marantz, A. 1984. *On The Nature of Grammatical Relations*. Cambridge, MA: MIT Press.
- Marantz, A. 1993. Implications of Asymmetry in Double Object Constructions. In S. Mchombo (ed.), *Theoretical aspects of Bantu grammar*: 113-150. Stanford: CSLI Publications.
- Marantz, A. 1997. No Escape from Syntax: Don't try a morphological analysis in the privacy of your own lexicon. *U. Penn Working Papers in Linguistics* 4: 201-225.
- Marantz, A. 2000. Restructuring the Lexical Domain with a Single Generative Engine. Ms. MIT.
- Marelj, M. 2002a. Middles in Romance Type Languages. Talk given at the Workshop on the Theta System. UiL OTS.
- Marelj, M. 2002b. Rules that govern the cooccurrences of theta-clusters in the 'Theta System'. In Krifka, M & W. Sternefeld (eds.), *Theoretical Linguistics* 28: 357-382. Berlin: Mouton.
- Marusic, F. & R. Zaucer. to appear. A Reanalysis of the FEELLIKE Dative-Reflexive Construction in Slovenian. In *FASL 12 (The Ottawa meeting, 2003)*. Ann Arbor: Michigan Slavic Publications.
- Masullo, P.J. 1992. Quirky datives in Spanish and the non-nominative subject parameter. *MIT Working Papers in Linguistics* 16.
- McFadden, T. 2002. The rise of the to-dative in Middle English. MS. Penn (www.ling.upenn.edu/~tmcfadde/papers.html)

- McNelly, L. 1994. Adjunct predicates and the individual/stage distinction. In E. Duncan, D. Farkas & P. Spaelti (eds.), *Proceedings of WCCFL 12*: 561-576. Stanford: CLSI.
- Mitchell, B. 1985. *Old English Syntax*. Oxford: Clarendon Press.
- Mónnesland, S. 1984. The Slavonic Frequentative Habituals. In C. de Groot & H. Tommola (eds.), *Aspect Bound*: 53-76. Dordrecht: Foris.
- Montalbetti, M. 1984. *After Binding*. Ph.D. dissertation, MIT.
- Neeleman 1997. PP-Complements. *Natural Language and Linguistic Theory* 15: 89-137.
- Neeleman, A. & F. Weerman. 1993. The Balance between Syntax and Morphology: Dutch Particles and Resultatives. *Natural Language and Linguistic Theory* 11: 433-475.
- Neeleman, A. 1994. *Complex Predicates*. Ph.D. dissertation. Utrecht: LOT.
- Neeleman, A. 1996. PP-Complements. *OTS Working Papers*. Utrecht: University of Utrecht.
- Neidle, C. 1988. *The Role of Case in Russian Syntax*. Kluwer: Dordrecht.
- Oehrle, R. 1976. The Grammatical Status of the English Dative Alternations. Ph.D. dissertation. MIT.
- Papangeli, D. 2004. *The Morphosyntax of Argument Realization: Greek Argument Structure and the Lexicon-Syntax Interface* Ph.D. dissertation. Utrecht: LOT.
- Parsons, T. 1985. Underlying events in the logical analysis of English. In E. LePore & B. McLaughlin (eds.), *Truth and Interpretation*. Oxford: Blackwell.
- Parsons, T. 1990. Events in the Semantics of English: A study in Sub-Atomic Semantics. *Current Studies in Linguistics Series* 21. Cambridge, Mass.: MIT Press.
- Parsons, T. 2000. Underlying States and Time Travel. In J. Higginbotham et al. (eds.), *Speaking of Events*. 81-93. New York: Oxford University Press.
- Partee, B. 1979. Subject and Object in Modern English. In J. Hankamer (ed.), *Outstanding Dissertations in Linguistics Series*. New York: Garland.
- Perlmutter, D. & A. Zaenen. 1984. The Indefinite Extraposition Construction in German and Dutch. In D. Perlmutter & C. Rosen (eds.), *Studies in Relational Grammar* 2. Chicago: Chicago University Press.
- Perlmutter, D. and P.M. Postal. 1984. The 1-Advancement Exclusiveness Law. In D. Perlmutter & C. Rosen (eds.), *Studies in Relational Grammar*: 171-216. Chicago: Chicago University Press.
- Pesetsky, D. 1982. *Paths and Categories*. Ph.D. dissertation. MIT.

- Pesetsky, D. 1995. *Zero Syntax: Experiencers and Cascades*. Cambridge, MA: MIT Press.
- Pitz, A. 1987. Middle Construction in German. Ms. University of Trondheim.
- Progovac, Lj. 1997. Events in Serbian. In M, Dimitrova-Vulchanova et al. (eds.), *University of Trondheim Working Papers in Linguistics* 31: 79-116. University of Trondheim.
- Progovac, Lj. 1998. Event Pronominal to. *Journal of Slavic Linguistics* 6: 3-29.
- Raposo, E. and J. Uriagareka. 1990. Long-distance Case Assignment. *Linguistic Inquiry* 21: 505-538.
- Rappaport, G. 2000. Extraction from Nominal Phrases in Polish and the Theory of Determiners. *Journal of Slavic Linguistics* 8-3.
- Ravin, Y. 1990. *Lexical Semantics without Thematic Roles*. Oxford: Clarendon Press.
- Reinhart, T. 1996. Syntactic Effects of Lexical Operations: Reflexives and Unaccusatives. *UiL-OTS Working Papers*. Utrecht: University of Utrecht.
- Reinhart, T. 2000. The Theta System: Syntactic Realization of Verbal Concepts. *UiL-OTS Working Papers*. Utrecht: University of Utrecht
- Reinhart, T. 2001. Experiencing Derivations. In R. Hastings, B. Jackson & Z. Zvolensky (eds), *Proceedings from Semantics and Linguistic Theory*. Ithaca, NY: CLC Publication
- Reinhart, T. 2002. The Theta System – An Overview. In W. Sternefeld (ed.), *Theoretical Linguistics* 28: 229-290 Berlin: Mouton.
- Reinhart, T. and E. Reuland. 1991. Anaphors and logophors: an argument structure perspective. In J. Koster & E. Reuland (eds.), *Long-distance Anaphora*: 281-321. Cambridge, UK: Cambridge University Press.
- Reinhart, T. and E. Reuland. 1993. Reflexivity. *Linguistic Inquiry* 24: 657-720.
- Reinhart, T. and T. Siloni. 2003. Thematic Arity Operations and Parametric Variations. Ms. University of Tel Aviv.
- Reinhart, T., E. Reuland and T. Siloni. 2004. The Acc Case Parameter. Ms. UiL OTS. University of Utrecht.
- Reuland, E. 2000. (ed.) *Arguments and Case*. Amsterdam: Benjamins.
- Rivero, M.L. 1999. Impersonal SIĘ in Polish: A Simplex Expression Anaphor. *Journal of Slavic Linguistics* 8: 199-237.
- Rizzi, L. 1986. Null Object in Italian and the Theory of pro. *Linguistic Inquiry* 17: 501-557.
- Roberts, I. 1983. Oblique Case in the History of English. *Southern California Occasional Papers in Linguistics* 10: *Studies in Syntax*: 143-159.

- Roberts, I. 1985. *The Representation of Implicit and Dethematized Subjects*. Ph.D. dissertation. Los Angeles: University of Southern California
- Rooryck, J. 1996. Prepositions and Minimalist Case Marking. In H. Thráinsson, et al. (eds.), *Studies in Comparative Germanic Syntax II*: 226-256. Dordrecht: Kluwer.
- Rooth, M. 1995. Indefinites, Adverbs of Quantification, and Focus Semantics. In G. Carlson & F.J. Pelletier (eds.), *The Generic Book*: 265-299.
- Ross, J.R. 1970. Gapping and the Order of Constituents. In M. Bierwisch & E.K. Heidolph (eds.), *Progress in Linguistics*: 249-259. The Hague: Mouton.
- Ruwet, N. 1976. *Problems in French Syntax*. London: Longman.
- Sag, I. 1973. On the state of progressives and statives. In C.J. Bailey & R. W. Shuy (eds.), *New ways of analyzing variation in English*: 83-95. Washington, DC: Georgetown University Press.
- Saito, M. 1992. The additional wh-effects and the adjunction site theory. Ms. University of Connecticut.
- Schoorlemmer, M. 1991. Dative Subject and Modality in Russian. Ms. University of Utrecht.
- Shen, Y. 1985. *The Structure of Action in Short Narrative Text*. Unpublished Ph.D. dissertation. Tel Aviv University.
- Siewierska, A. 1988. The Passive in Slavic. In Masayoshi Shibatani (ed.), *Passive and Voice*: 243-289. Amsterdam: Benjamins.
- Siewierska, A. 1984. *The Passive: A Comparative Linguistic Analysis*. London: Croom Helm.
- Sigurðsson, H.A. 1989. *Verbal Syntax and Case in Icelandic*. Ph.D. dissertation. University of Lund. Reprinted in 1992. Institute of Linguistics, University of Iceland.
- Siloni, T. 2001. Reciprocal Verbs. In Yehuda Falk (ed.), *Proceedings of IATL 17*.
- Siloni, T. 2002. Reciprocal Verbs. Talk given at the Anaphora Typology Workshop on Reciprocals, UiL OTS.
- Siloni, T. 2003. Active Lexicon. In Krifka, M & W. Sternefeld (eds.), *Theoretical Linguistics 28*: 383-400. Berlin: Mouton.
- Smith, H. 1994. Dative Sickness in Germanic. In J. Maling (ed.), *Natural Language and Linguistic Theory 12*: 675-736. Kluwer Academic Publishers.
- Smyth, H. 1974. *Greek Grammar*. Cambridge, MA: Harvard University Press.
- Sobin, N.J. 1985. Case Assignment in Ukrainian Morphological Passive Constructions. *Linguistic Inquiry 16-4*: 649-662.

- Steinbach, M. 1998. *Middles in German*. Ph.D. dissertation. Berlin: Humboldt University.
- Stjepanović, S. 2001. Clitic Climbing without Climbing out of Seemingly Finite Clauses and Implications for Restructuring. Ms. Kanda University of International Studies.
- Stowell, Timothy. 1981. *Origins of Phrase Structure*. Ph.D. dissertation. MIT.
- Stroik, T. 1993. Middles and Movement. *Linguistic Inquiry* 23: 127-137.
- Stroik, T. 1999. Middles and Reflexivity. *Linguistic Inquiry* 30:119-131.
- Takahashi, D. 1992. Improper movements and chain formation. Ms. University of Connecticut.
- Tremblay, M. & O. Kabbaj. 1990. The internal structure of PPs in Amharic: On postpositions and prepositional case affixes. *Current Approaches to African Linguistics* 7: 167-178. Dordrecht: Foris Publications.
- Tsimpli, I. 1989. On the Properties of the Passive Affix in Modern Greek. *UCL Working Papers in Linguistics*: 235-260. University College London: London.
- Uriagareka, H. 2000. *Rhyme & Reason*. Cambridge, MA: MIT Press.
- van Hout, A. 1996. *Event Semantics of Verbal Frame Alternations: A Case Study of Dutch and Its Acquisition*. Ph.D. dissertation. University of Tilburg.
- van Kemenade, A. 1987. *Syntactic Case and Morphological Case in the History of English*. Ph. D. dissertation. Dordrecht: Foris.
- van Valin, R.D. 1990. Semantic Parameters and Split Intransitivity. *Language* 66: 221-260
- Vendler, Z. 1967. *Linguistics in philosophy*. Ithaca: Cornell University Press.
- Vendler, Z. 1984. Adverbs of Action. *CLS*: 297-307. Chicago, Illinois: Chicago Linguistic Society: 297-307
- Verkuyl, H. 1993. *A Theory of Aspectuality*. Cambridge, MA: Cambridge University Press.
- Wagner, F. 1977. *Untersuchungen zu Reflexivkonstruktionen im Deutschen*. Frankfurt/M.
- Weerman, Fred. 1997. On the Relation between Morphological and Syntactic Case. In: A. van Kemenade & N. Vincent(eds.). *Parameters of Morphosyntactic Change*: 427-459. Cambridge, Cambridge University Press.
- Williams, E. 1980. Predication. *Linguistic Inquiry* 11: 203 -238
- Williams, E. 1981. Argument Structure and Morphology. *The Linguistic Review* 1: 81-114.

- Williams, E. 1985. PRO and Subject of NP. *Natural Language and Linguistic Theory* 2: 297-315.
- Williams, E. 1995. Theta-Theory. In G. Webelhuth (ed.), *Government and Binding Theory and the Minimalist Program: Principles and Parameter in Syntactic Theory*: 99-124. Cambridge, MA: Blackwell Publishers.
- Zaenen, A. 1993. Unaccusativity in Dutch. In J. Pustejovsky (ed.), *Integrating Syntax and Lexical Semantics. In Semantics and the Lexicon*: 129-161. Dordrecht: Kluwer.
- Zlatić, L. 1997. *The Structure of Serbian Noun Phrase*. Ph.D. dissertation. The University of Texas at Austin.
- Zribi-Hertz, A. 1982. The “Middle-Se” Construction in French and Its Status in the Triad Middle Voice-Passive-Reflexive. *Linguisticae Investigationes* 6: 354-401.
- Zubizarreta, M.-L. 1982. *On the Relationship of the Lexicon to Syntax*. Ph.D. dissertation. Cambridge, MA: MIT.
- Zubizarreta, M. L. 1985. The Relation between Morphophonology and Morphosyntax: The Case of Romance Causatives. *Linguistic Inquiry* 16: 247-289.
- Zubizarreta, M –L. 1987. *Levels of Representation in the Lexicon and in the Syntax*. Dordrecht: Foris.
- Zwart, J.W. 1998. Nonargument Middles in Dutch. In *Groninger Arbeiten zur germanistischen Linguistik* 42: 109-128

Samenvatting in het Nederlands

Het hoofddoel van deze studie is een verklaring te geven voor de belangrijkste syntactische en semantische eigenschappen van mediale constructies in een aantal talen. Het uitgangspunt van het onderzoek was het bepalen van de gemeenschappelijke kenmerken van mediale constructies in het Engels en het Servo-Kroatisch (SK) en het vaststellen welke van deze eigenschappen ook voor andere talen gelden. Een verder doel was het verklaren van de verschillen tussen mediale constructies in het Engels en het SK, het vaststellen van de contexten waarin ze voorkomen en het beantwoorden van de vraag waarom ze voorkomen. De eerste veronderstelling was dat verschillen tussen het Engels en het SK niet alleen relevant zijn voor deze twee talen, maar duiden op een dieper patroon van parametrische taalvariatie. Om deze hypothese te kunnen toetsen wordt in deze studie, naast het Engels en het SK, ook gekeken naar het Nederlands, Frans, Hebreeuws, Italiaans en Pools. Zoals in deze studie wordt aangetoond vormen het Nederlands, Engels en Hebreeuws een klasse talen waarin mediale constructies in het lexicon worden gevormd. Het Frans, Italiaans, Pools en SK vormen een klasse talen waarin mediale constructies in de syntaxis (op LF) worden gevormd.

De hoofdstukken 1, 2 en 3 kunnen beschouwd worden als een eenheid die ‘de weg bereiden voor mediale constructies’ aangezien ze een ‘identiteitskaart’ verschaffen van mediale constructies en de benodigdheden om ze te analyseren in de talen die hier beschouwd worden.

Hoofdstuk 2 beschouwt in meer detail en vanuit een kritisch perspectief bepaalde aspecten van Reinhart’s *Theta System*, het theoretische kader dat in deze studie wordt aangenomen, zoals gepresenteerd in hoofdstuk 1. Mediale constructies hebben een aantal serieuze problemen opgeleverd voor het *Theta System*. Voor deze, en een aantal andere, problemen was het nodig om een aantal modificaties van het systeem te introduceren. Hoofdstuk 2 richt zich op de eigenschappen van kenmerkenbundels en de regels die het tegelijk voorkomen zulke bundels bepalen. Beargumenteerd wordt dat, in interpretatieve termen, ondergespecificeerde bundels problematisch zijn omdat ze ‘thematisch deficient’ zijn. De discussie in dit hoofdstuk werpt licht op het type van ‘thematische deficiëntie’ van ondergespecificeerde bundels en de manier waarop deze ‘thematische deficiëntie’ wordt gerepareerd. Na het kritisch

onderzoeken van de implicaties van de notie ‘ondergespecificeerde bundels’ stel ik voor dat een nieuw principe – *Full Interpretation of Thematic Roles* (1) – aan de aannames die binnen het *Theta System* worden gemaakt moet worden toegevoegd. De leidende gedachte achter dit principe is de *Non-Identity Constraint* (2), een cruciale restrictie die werkt op de interface tussen het conceptuele systeem en het computationele systeem, als ook op de interface tussen het computationele systeem en de semantiek.

- (1) Full Interpretation of Thematic Roles
Voorzover het interpretatie betreft dienen alle kenmerkenbundels volledig gespecificeerd te zijn
- (2) Non-Identity Constraint
Een n-plaatsig werkwoord, $n > 1$, wordt gecodeerd in termen van niet-identieke kenmerkenbundels

Binnen de analyse die hier wordt voorgesteld zorgen de *Full Interpretation of Thematic Roles* (FITR) en de *Non-Identity Constraint* ervoor dat alle participanten in onderscheiden en volledig gedefinieerde relaties staan tot het gebeuren in kwestie. Als een extra voordeel stel ik in termen van de FITR een mogelijke oplossing voor van een lang onverklaard gebleven raadsel in de taalkunde, namelijk de *animacy restriction* die geldt voor dubbel-objectconstructies. Het principe leidt voorts tot een beter begrip van de *Cluster Distinctness Constraint* als een restrictie die voor natuurlijke talen geldt. De zaken beijkend door de bril van de FITR, stel ik een nieuwe definitie voor van deze formele restrictie, als in (4).

- (4) Cluster Distinctness opnieuw bezien
Twee ondergespecificeerde bundles zijn indistinct als er een interpretatie is waarin ze identiek zijn

Wat betreft zijn empirisch bereik is de geherformuleerde *Cluster Distinctness Constraint* gelijk aan de originele versie. Tezamen met de *Non-Identity Constraint* heeft (4) verklarende waarde met betrekking tot de omgevingen waarin deze formele restrictie actief is, als ook met betrekking tot de notie ‘indistincte bundels’. Zoals aangetoond in hoofdstukken 3 en 4 heeft dit belangrijke gevolgen voor de verklaring van mediale constructies in talen als het Engels. Argumenten met de thematische rol *recipient-goal* mogen niet worden gerealiseerd in Engelse mediale constructies (noch als DP noch als PP), zoals het contrast tussen (5a) en (5b) laat zien. Constituenten met de rol *directional-goal*, daarentegen, kunnen zonder probleem gerealiseerd worden in een mediale constructie, zoals (5c) laat zien.

- (5a) Big presents ship easily.
- (5b) *Big presents don't ship friends/to friends easily.
- (5c) Big presents don't ship easily to foreign countries.

Zoals in hoofdstuk 2 beargumenteerd zijn de regels die het tegelijk voorkomen van kenmerkenbundels beregelen verbonden met de *Non-Identity Constraint*. Dit vergemakkelijkte de conclusie in hoofdstuk 3 dat de effecten van de beperking op het tegelijk voorkomen van kenmerkenbundels, werkzaam in (5b), afwezig moeten zijn in (5c), aangezien de regels die het tegelijk voorkomen van kenmerkenbundels bepalen uitsluitend werken op kenmerkenbundels van een enkel predikaat. De vraag wat beschouwd moet worden als een kenmerkenbundel heeft ook ruimere implicaties voor het *Theta System*. Beargumenteerd wordt dat sommige adjuncten het beste geanalyseerd kunnen worden als niet gecodeerd in het *Theta System*, terwijl voor andere een alternatieve verklaring wordt voorgesteld. Volgens de verklaring zoals in hoofdstuk 2 gepresenteerd wordt de ‘thematische deficiëntie’ van het cluster met *Dative-Goals* (argumenten met het kenmerk [-c]) gerepareerd door de FITR. Dit leidde tot de vraag naar de rol van het datieve *to*. Het antwoord op deze vraag bracht ons tot een fijnmazige benadering van voorzetsels. Beargumenteerd werd namelijk dat voorzetsels in twee groepen uiteenvallen: semantisch lege voorzetsels en semantisch inhoudsvolle voorzetsels. Semantisch lege voorzetsels komen voor om redenen die te maken hebben met Casus, zo werd beargumenteerd. In navolging van Parsons (1990) beargumenteer ik dat ze niet voorkomen in de logische representatie van een zin. Semantisch inhoudsvolle voorzetsels dragen bij aan de betekenis van de zin. Ze zijn dientengevolge altijd aanwezig in de logische representatie van de zin. Dit maakt het ons mogelijk om het verband tussen *Dative-Goals* en *Locative-Goals* te verantwoorden. Dit verband werd hier formeel gerepresenteerd door beide als [-c] bundels te coderen. De FITR werkt, zoals hier beargumenteerd, wel in het eerste geval, maar niet in het laatste.

Een andere aanpassing van het *Theta System*, geïntroduceerd in hoofdstuk 4, is het vaststellen van het bestaan van ondergespecificeerd ([]), een bundel die niet is gespecificeerd voor enig kenmerk. Het systeem van kenmerken vereist dat zo’n bundel logisch gesproken bestaansrecht heeft, maar tot nu toe was er geen empirisch bewijs voor het bestaan ervan (wat een ernstig probleem zou zijn). Ik toon aan dat deze bundel werkzaam is in de vorming van mediale constructies in talen van het Engelse (lexicon) type.

In hoofdstuk 3 worden de eigenschappen van mediale constructies in de diverse talen onderzocht. In beschrijvende termen kan de kern van wat mediale constructies zijn als volgt samengevat worden:

- (i) Mediale constructies zijn karakteriserende/generieke beweringen (d.w.z. ze schrijven bepaalde eigenschappen toe aan entiteiten en hebben een quasi-universele lezing, typisch met een modale interpretatie van ‘kunnen’ of ‘in staat zijn’)
- (ii) De externe rol van het werkwoord in een mediale constructie wordt niet in de syntaxis gerealiseerd, maar is wel altijd aanwezig in de semantiek en wordt geïnterpreteerd als een ARB(itrair) argument met de eigenschap [+menselijk]

Gegeven deze eigenschappen wordt zowel het definiëren en het inperken van de reikwijdte van het onderzoek naar mediale constructies vergemakkelijkt. Afleidingen die eigenschappen toeschrijven aan entiteiten maar die geen impliciete externe rol hebben (bv. de statische of generieke onaccusatieven in paragraaf 2.2.2 van hoofdstuk 3) dienen niet als mediale constructies behandeld te worden. Zinnen die een gebeuren uitdrukken en die syntactisch gesproken in vrijwel alles op een mediale constructie lijken (bv. *se/si*-passieven in Slavische en Romaanse talen) moeten eveneens niet verward worden met mediale constructies. Zoals in hoofdstuk 5 beargumenteerd kunnen deze voorkomens het beste als ARB-passieven behandeld worden. Gegeven het feit dat mediale constructies generieke beweringen zijn, volgt hun stativiteit – een eigenschap die in de literatuur vaak als bepalende eigenschap voor een mediale constructie wordt gezien – direct. Gegeven de kwantificatieanalyse van generieken (vgl. Krifka et al. (1995)) die ik hier aanneem, kan adverbiale modificatie – vaak opgemerkt als een eigenschap van mediale constructies – volledig worden begrepen. De analyses van Condoravdi (1989) en Krifka et al. (1995) leveren aldus het gereedschap waarmee mediale constructies formeel kunnen worden benaderd.

Niet alle eigenschappen van mediale constructies, echter, volgen direct uit de aanwezigheid van Gen (een generieke kwantor) in de logische representatie van zulke constructies. Het is nodig om de interpretatie van de impliciete rol als arbitrair, met de eigenschap [+menselijk], te verklaren, zowel in talen waarin mediale constructies in het lexicon worden gevormd als in talen waarin ze syntactisch worden gevormd (bv. Engels en SK, respectievelijk). Voorts moeten bepaalde eigenaardigheden van het predikaat in Engelse mediale constructies verklaard worden, aangezien het niet gebruikt kan worden om bepaalde zinnen te vormen (vgl. 2.1.3 van hoofdstuk 3). Hoofdstuk 3 beschouwt eveneens de diagnostieken die in de literatuur gebruikt worden om mediale afleidingen te onderscheiden van andere. Voor wat betreft sommige van deze diagnostieken beargumenteerde ik dat ze onbetrouwbaar zijn, niet omdat mediale constructies niet aan de betreffende test voldoen, maar omdat men niet weet wat de test eigenlijk laat zien. Ook heb ik een aantal moeilijkheden laten zien die voortkomen uit pogingen om de eigenschappen van mediale constructies af te leiden uit het onderscheid tussen *i(individual)-level* en *s(tage)-level* predikaten. De conclusie lijkt gerechtvaardigd dat simpelweg stellen dat mediale constructies *i-level* predikaten zijn in feite niet veel te betekenen heeft, aangezien verschillende onderzoekers hebben aangetoond dat het onderscheid tussen *i-level* en *s-level* predikaten niet eenduidig is, maar dat er verscheidene, op elkaar lijkende maar los van elkaar staande, onderscheidingen zijn die hierbij samen worden genomen. Belangrijker is dat de evidentie die in 2.1.2 van hoofdstuk 3 wordt aangedragen tot voorzichtigheid moet leiden met betrekking tot benaderingen die uitgaan van de premisse dat statieven geen e(vent)-rol hebben en dit vervolgens gebruiken om te verklaren waarom van statieven als *houden van* in sommige talen geen mediale constructie gevormd kan worden.

Wat betreft de vraag wat de beste manier is om mediale constructies te benaderen stel ik voor dat een parametriseerbare operatie de verschillen in talen bij het vormen

van zulke constructies het beste kan verklaren. Ik laat zien dat de eigenschappen van mediale constructies impliceren dat ze in sommige talen in het lexicon gevormd worden, maar in andere in de syntaxis. De conclusies waartoe in hoofdstuk 3 wordt gekomen maakten het nodig het onderzoek in twee aparte delen te splitsen. Hoofdstuk 4 behandelt de mediale constructie in 'lexicon-talen', waar een 'lexicon-taal' een taal is waar mediale constructies op een pre-syntactisch niveau worden afgeleid, en hoofdstuk 5 behandelt de mediale constructie in 'syntactische talen', waar een 'syntactische taal' een taal is waarin mediale constructies in de syntaxis (op LF) worden afgeleid. Door te onderzoeken of mediale constructies in verschillende talen in dezelfde module van de grammatica afgeleid kunnen worden heb ik een aantal empirische en conceptuele problemen kunnen laten zien die naar voren komen als men probeert, hoe uitgebreid ook, om een uniforme analyse voor mediale constructies in alle talen voor te stellen.

Het belangrijkste doel van hoofdstuk 4 was om een analyse te presenteren van mediale constructies in het Nederlands/Engelse type taal. Een kort overzicht van de belangrijkste onderdelen van de benadering volgt hier. In plaats condities als de *Affectedness Constraint* of de *Actor Constraint* ga ik er van uit dat vorming van mediale constructies in het lexicon (*Lexicon Middle Formation*, LMF) wordt ingeperkt door de *Lexicon Middle Formation Visibility Requirement* (6).

(6) *LMF Visibility Requirement*

Een werkwoord is zichtbaar voor LMF desda zijn verbale concept een [+c] rol bevat

Deze eis verklaart de lexicale restrictie op LMF die in talen als het Nederlands en Engels waargenomen kan worden, door een uitputtende definitie te geven van de verzameling verbale concepten waarop LMF kan worden toegepast. Daarmee is ook de verzameling verbale concepten gedefinieerd die geen LMF toestaan; de eis karakteriseert de gemeenschappelijke eigenschap van deze concepten. LMF deleert de inhoud van een [+c] bundel en creëert de [] bundel / ARB-rol. Zoals aangetoond in hoofdstuk 4 verklaart het gegeven dat deze rol gecreëerd wordt direct de cruciale eigenschappen van mediale constructies in het Nederlands/Engelse type taal: a) de aanwezigheid van de impliciete rol en zijn interpretatie als ARB met de eigenschap +menselijk, b) de aanwezigheid van Gen – zoals standaard aangenomen om de generieke lezing van mediale constructies te verantwoorden (vgl. Condoravdi (1989), Krifka et al. (1995) en Steinbach (1998)) alsmede de onmogelijkheid om het mediale werkwoord in bepaalde zinnen te gebruiken, c) de afwezigheid van morfologische markerings (de afwezigheid van Casus-absorberende morfologie in mediale constructies in lexicon-talen), d) de beperking op het tegelijk realiseren van bundels van het basiswerkwoord, en e) de onergativiteit van mediale constructies in het Nederlands en Engels

In overeenstemming met de hypothese dat de operatie volgens welke mediale constructies worden gevormd een parametriserbaar proces betreft (vgl. hoofdstuk 3 en 4) is het hoofddoel van hoofdstuk 5 om de eigenschappen van mediale

constructies te verklaren in syntactische talen – talen waarin deze operatie in de syntaxis plaats vindt (op LF). De eerste stap was aan te tonen dat mediale constructies in syntactische talen die eigenschappen hebben die in hoofdstuk 3 werden vastgesteld voor mediale constructies in diverse talen. Dit maakte het ons mogelijk om tot de kern te komen van het probleem waarom mediale constructies in syntactische talen moeilijk als zodanig te identificeren zijn. Het bestaan van mediale constructies in deze talen wordt, vergeleken met het Nederlands en Engels, versluierd doordat de constructie hier zijn morfo-syntactische eigenschappen deelt met die van passieven, die, semantisch gesproken, zeer verschillen van mediale constructies. Zowel in lexicon-talen als in syntactische talen zijn mediale constructies generieke beweringen. In beide typen mediale constructie blijft de impliciete externe rol verplicht bewaard, geïnterpreteerd als ARB met de eigenschap +menselijk. In beide typen taal is de operatie die mediale constructies afleidt ARB-generisatie.

Aangezien de operatie die mediale constructies afleidt in verschillende modules plaats vindt, gebruiken lexicon-talen en syntactische talen verschillende middelen om hetzelfde semantische doel te bereiken. Terwijl lexicon-talen de ARB-rol gebruiken, d.w.z. de [] bundel, gebruiken syntactische talen ARB-saturatie. Dat wil zeggen, in lexicon-talen is het proces er een van het arbitrair maken van een bundel, terwijl het in syntactische talen om het arbitrair maken van een variabele gaat. Dit is op zijn beurt geheel in overeenstemming met de niveau's waarop deze soorten van 'arbitrarisering' plaats vinden. Terwijl arbitrarisering in lexicon-talen in het lexicon plaats vindt, waar slechts bundels zijn, vindt arbitrarisering in syntactische talen plaats op LF. Zoals in dit hoofdstuk verder wordt betoogd is het proces van ARB-saturatie van Chierchia (1995a) niet alleen van onschatbare waarde om onpersoonlijke constructies in diverse syntactische talen te verklaren, maar kan het ook gebruikt worden voor mediale constructies en ARB-passieven in zulke talen, alsmede voor de 'object-arbitrarisering' constructie, die vaak voorkomt in Slavische talen. Zoals opgemerkt is het, zonder aan dit speciale type saturatie te refereren, erg moeilijk om te verklaren dat in alle drie de constructies de impliciete rol als een ongespecificeerde, meestal meervoudige, menselijke entiteit wordt opgevat. De representatie van het Engelse voorbeeld (7a) wordt in (8a) gegeven, en die van z'n SK tegenhanger (7b) in (8b).

(7a) *Tristram Shandy* reads easily.

(7b) *Tristram Šendi* se lako čita.

(8a) Gen e, x_{arb} [reading (e) & [-c-m] (e, *Tristram Shandy*) & [] (e, x_{arb})] [easy (e, x_{arb})]

(8b) Gen e, x_{arb} [reading (e) & [-c-m] (e, *Tristram Shandy*) & [+c+m] (e, x_{arb})] [easy (e, x_{arb})]

Zoals door deze hele studie heen wordt betoogd volgen de verschillen tussen lexicon-talen en syntactische talen uit het feit dat de operatie die mediale constructies vormt parametrizeerbaar is. Terwijl sommige verschillen volgen uit het feit zelf dat mediale constructies op verschillende niveau's worden gemaakt (zoals de mogelijkheid van mediale constructies van ECM-werkwoorden in syntactische talen, terwijl deze in lexicon-talen onmogelijk zijn), volgen andere uit de manier waarop de operatie wordt uitgevoerd in deze twee onderscheiden modules (zoals beperkingen op het tegelijkertijd realiseren van bundels, zoals die voorkomen in lexicon-talen maar niet in syntactische talen). Zoals op basis van de voorbeeldtalen in deze studie wordt aangetoond lijkt de keuze voor een bepaalde waarde van de parameter niet bepaald te worden voor elk van de parametrizeerbare operaties afzonderlijk. Die keuze volgt veeleer uit de generalisatie in (9), en geldt voor diverse parametrizeerbare operaties binnen één taal.

- (9) De Lexicon-Syntax Parameter (Reinhart en Siloni (2003))
 UG staat toe dat operaties die de thematisch valentie van een werkwoord beïnvloeden ofwel in het lexicon ofwel in de syntaxis (op LF) plaats vinden

Dit maakt op zijn beurt het bepalen van de parameterwaarde tijdens taalverwerving veel gemakkelijker: door de parameter een bepaalde waarde te geven voor één parametrizeerbare operatie, legt het kind de parameterwaarde voor al deze operaties vast. Zoals verder wordt beargumenteerd in hoofdstuk 5, wordt de aanwezigheid van ARB-passieven in syntactische talen niet slechts verklaard – dit wordt zelfs voorspeld binnen de hier gepresenteerde analyse. In lexicon-talen dwingt de aanwezigheid van de ondergespecificeerde [] bundel de Gen-operatie af. Deze bundel wordt afgeleid door bundel-manipulatie, wat uitsluitend is toegestaan in het lexicon en niet in de syntaxis. Aangezien deze bundel niet aanwezig is in syntactische talen, is er niets dat Gen afdwingt.

Eén van de intrigerende eigenschappen van mediale constructies in de syntactische talen die hier worden bekeken is dat ze worden gemarkeerd door de aanwezigheid van het clitic SE. Zoals in hoofdstuk 1 wordt opgemerkt, is een verdere raadselachtige eigenschap dat ditzelfde clitic wordt gebruikt om allerlei verschillende constructies te markeren, die, op het eerste gezicht, niet veel gemeenschappelijks lijken te hebben. De poging om dit probleem te onderzoeken, en het niet accepteren dat het verschijnen van dezelfde markeerder in verschillende afleidingen op toeval berust, leidde tot het onderzoeken in hoofdstuk 5 en 6 wat de onderliggende generalisatie wat betreft de aanwezigheid van dit clitic. De aanname is hier dat een uniforme benadering van het clitic SE mogelijk is als dit clitic wordt beschouwd als Casus-absorberende morfologie, zoals voorgesteld door Reinhart en Siloni (2003). Evidentie uit verschillende talen die het SE clitic gebruiken is in overeenstemming met zijn rol als casus-absorbeerder. De argumenten in hoofdstuk 6 geven verdere steun voor de hypothese dat het clitic niet is verbonden met een thematische rol. Een dergelijke uniforme benadering van het clitic is zowel conceptueel als empirisch wenselijk. Ik heb evidentie aangedragen die laat zien dat

de generalisatie achter de SE-constructies die hier worden beschouwd niet gevonden kan worden in hun gelijke semantiek of syntaxis, of in termen van hun historische gerelateerdheid. De generalisatie achter de diverse SE-constructies lijkt te zijn dat ze allemaal worden afgeleid door de toepassing van een of andere operatie die de thematische valentie van werkwoorden beïnvloedt.

Mediale constructies blijven een belangrijk voorwerp van onderzoek, zowel empirisch als theoretisch. Hoewel de belangrijkste doelstellingen van deze studie zijn gehaald, is het onderzoek naar de fenomenen die hier zijn behandeld nog niet afgerond. Een aantal onderwerpen voor verdere studie zijn in deze studie al genoemd. Zoals in veel andere onderzoeken naar de mediale constructie (vgl. Keyser and Roeper (1984), Zubizarreta (1987), Cinque (1988), Fagan (1992), Hoekstra en Roberts (1993), en Ackema en Schoorlemmer (1994), om slechts enkele te noemen), is de mediale constructie hier ook gebruikt om eigenschappen te toetsen van de interface tussen het conceptuele systeem, het computationele systeem (de syntaxis), inferentie (de semantiek), en discourse. Een specifiek punt dat ik hier nog eens wil noemen is de relevantie van mediale constructies voor het debat over lexicalisme versus non-lexicalisme. Wat dit betreft is het van groot belang om te benadrukken dat, zoals op basis van een aantal talen is aangetoond in deze studie, de verschillen tussen talen wat betreft de eigenschappen van hun mediale constructies eenvoudig verklaard kunnen worden als men aanneemt dat het taalvermogen een actief lexicon bevat. Met name is in hoofdstuk 4 en 5 aangetoond dat een reeks eigenschappen van de twee typen mediale constructies volgt uit het gegeven dat de operatie die zulke constructies afleidt parametriseerbaar is. Zoals hier beargumenteerd is deze parametrisatie op zijn beurt alleen mogelijk in een model dat een actieve, dynamische component van het lexicon bevat.

Curriculum Vitae

Marijana Marelj was born on October 21, 1970, in Sremska Mitrovica, Yugoslavia. She enrolled at the University of Novi Sad, Faculty of Philosophy, Department of English to study English literature and linguistics in 1989. She got her degree in English language and literature in 1996. From 1996 to 2000 she worked at the University of Novi Sad, Faculty of Philosophy, Department of English first in the capacity of research assistant and then in the capacity of the teaching assistant. In autumn 2000 she joined the Utrecht Institute of Linguistics OTS as an International Ph.D. student. The present dissertation is the result of the research she carried out there.