

Two languages in daycare

An appraisal of bilingual early childhood
education and care in the Netherlands

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Two languages in daycare

An appraisal of bilingual early childhood
education and care in the Netherlands

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gezag van de Rector Magnificus

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door Darlene Jamie Keydeniers

geboren te Vlissingen

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Author contributions

Chapter 1 – Introduction

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Chapter 2 – The implementation and the underlying ideologies of bilingual early childhood education and care in the Netherlands

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The study was designed by Darlene Keydeniers in collaboration with Suzanne Aalberse, Sible Andringa and Folkert Kuiken. Participants were recruited as part of Project MIND and data was collected by Darlene Keydeniers together with project members and research assistants. Data analysis was performed by Darlene Keydeniers, supervised by Suzanne Aalberse, Sible Andringa and Folkert Kuiken. Darlene Keydeniers is the lead author of this manuscript, with valuable feedback provided by Suzanne Aalberse, Sible Andringa and Folkert Kuiken.

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Chapter 5 – Crosslinguistic influence and early lexical development: How form similarity between languages facilitates word learning in the weaker language

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Chapter 1

Introduction

In the early years of a child's life the basic foundations for learning and communication are formed. These early years are therefore often considered to be crucial for children's wellbeing, language development and future educational careers (Hart & Risley, 1995; Magnuson et al., 2006; Slot, 2014). Between the ages of zero and four, children's brains are rapidly developing and during this time children are particularly susceptible to environmental influences (Shonkoff & Philips, 2000). Because of this, good quality of the environment in the early years is crucial to having a good start in life.

Research on the relationship between children's development and their surroundings in these formative years has primarily been concerned with the effects of the home environment. Studies focusing on the links between quality of children's home environment and their development have shown that children's cognitive, linguistic and social development are strongly related to parents' educational level, socioeconomic status of the family as well as the home learning environment and parenting styles (Bradley & Corwyn, 2002; Hart & Risley, 1995; Hoff, 2006; Mistry et al., 2010). From a very young age, children from disadvantaged backgrounds show delays in their (language) development compared to children who grow up in a more advantaged household (Magnuson et al., 2006; Mistry et al., 2010). These differences in (language) development in the early years also seem to have long term implications: Hart and Risley (1995) found that the vocabulary sizes of children at the age of three were strongly linked to language performance measures at ages nine and ten, suggesting that differences at age three can lead to long term differences.

Apart from the home environment, early childhood education and care (ECEC) also plays an important role in early child development. In Western

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industrialized countries, the majority of young children participate in ECEC before primary school (OECD, 2021). Studies on the relationships between ECEC and children's development showed that ECEC attendance rates had positive effects on both short and long term cognitive development and educational outcomes (e.g. Barnett 1995; Burger 2010; Magnuson, Ruhm & Waldfogel 2007). Because of its great potential, people are always looking for ways to improve, innovate and refine ECEC. These initiatives include bilingual education programs. In recent years, bilingual ECEC gained popularity as it is believed by some that it can possibly foster a lifetime of bilingual language proficiency.

This dissertation is concerned with the implementation and consequences of bilingual ECEC in the Netherlands: while bilingual education seems to be desired by many (in the Netherlands and other places in the world), there is still a gap between its theoretical support and its practical realization (Benz, 2018). This dissertation therefore aims to seek out how the implementation of bilingual ECEC plays out in practice by unraveling the relationship between the context in which bilingual ECEC in the Netherlands is embedded on the one hand and the implementation and realization of language policies on the other, as well as investigating the consequences of bilingual ECEC for the two languages involved. Before we delve into the aims and research questions of this dissertation, we will first discuss the possible benefits of bilingual ECEC.

1.1 Reasons for bilingual early childhood education and care

The increased interest in bilingual ECEC can be attributed to the widespread idea that young children can easily and quickly learn foreign languages. The aim of

bilingual ECEC is thus to make use of this advantage and to foster language proficiency in both the majority language as well as the additional language, by exposing children to both languages throughout the day (Thieme et al., 2021; Wipperman et al., 2010), as proficiency in two languages might be beneficial to their educational careers and opportunities on the job market (Bergström et al., 2016; Ferjan-Ramírez & Kuhl, 2020; Myles, 2017). Also, the European Commission has stated that early foreign language learning could be beneficial to children's "individual and social development and increases their capacity to empathize with others. [...] [It] can shape the way they develop their attitudes towards other languages and cultures by raising awareness of diversity and cultural variety" (European Commission, 2020, p. 7). As a result, the European Commission has supported various initiatives that promote early foreign language learning, such as the implementation of early foreign language learning in ECEC.

In addition to the possible benefits of bilingual ECEC on children's language learning and social development, the way ECEC is generally organized can be quite easily reconciled with the implementation of a bilingual language learning program (Benz, 2018). Whereas classes in primary schools or high schools are mostly staffed by one teacher at a time, in ECEC classrooms, more staff members are present. In Dutch ECEC a ratio of one teacher for every three children under the age of one, one teacher for every five children between the ages of one and two, and one teacher for every eight children between the ages of two and four has to be guaranteed (Rijksoverheid, 2022b). Since there are usually two staff members present at ECEC groups, full-time bilingual programs can be provided without additional costs or time if the responsibilities for the two languages are divided between the two teachers (Benz, 2018).

Allocating the ECEC languages over different teachers also allows for the use of the foreign language as the medium of instruction, which is often regarded as a crucial factor in the successful implementation of bilingual input

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(Baker, 2011; Benz, 2018). This can be done if the staff members use different languages with the children. This is also referred to as the one person, one language method, which is based on the so-called one parent, one language approach that is often used in bilingual homes (Döpke, 1992; Grosjean, 1982). By employing this method, children are exposed to both languages throughout the day and in all situations, which is considered to be an effective language teaching approach (Benz, 2018). According to Benz (2018), the aforementioned organizational conditions can also be particularly favorable for parents as language learning and childcare take place at the same time. In this way, families do not have to spend extra time or money on early foreign language learning.

Still, some would say that the positive effects of bilingual ECEC on language learning are not always that straightforward, as it might not always result in (lasting) bilingual proficiency. For example, the so-called time-on-task argument states that the more time you spend on learning a language, the greater one's competence. However, this also suggests that the time in bilingual ECEC that is dedicated to a foreign language might come at the expense of competence in the other language (Leseman et al., 2009). Whereas studies have indeed found that bilingual children might have smaller vocabulary sizes in each language separately compared to monolingual children (Bialystok, 2009), other studies have suggested that the two languages might also reinforce each other's development (Cummins, 2016).

In addition, the 'the earlier, the better' argument is often put forward as one of the reasons why bilingual ECEC should be implemented, even though evidence for this claim has mostly been attested in research on language learning in naturalistic settings. Studies show that in naturalistic settings, early foreign language learners can obtain a higher language proficiency than late-starters (see Muñoz, 2008 for an overview). As a result, it is often thought that the same goes for language learning in instructed language learning settings and that in foreign language classrooms early starters might also have a long term advantage in their

ultimate levels of attainment. However, studies conducted in instructed settings that compared early and late starters over a longer period of time suggest that earlier is not always better as they often did not find evidence for higher proficiency in younger-starting pupils in comparison with later-starting pupils (e.g. Muñoz, 2011; Pfenninger, 2014). Consequently, DeKeyser (2022) argues that it is important to make a distinction between naturalistic and instructed language learning settings, as age effects might differ between them: the language environment in instructed settings is often less conducive to longer term benefits than the language environment in naturalistic settings.

Thus, whether positive effects for starting early also exist for bilingual ECEC remains to be seen, as we believe it could be considered a mix between a naturalistic (learning through interaction at a young age) and an instructed setting (learning in a classroom). In a recent review on foreign language programs with preschoolers in ECEC settings, Thieme et al. (2021) found that the effects of bilingual ECEC might be dependent on program characteristics (such as input quantity and intensity, language policy, teacher strategies and interaction practices) and child-related factors (such as age, child temperament and in-class behavior). Overall, results showed that foreign language ECEC generally leads to foreign language development, particularly in cases of prolonged and frequent exposure. Consequently, these results suggest that the input offered at ECEC can still play a vital role in children's language development, especially if children attend ECEC on a regular basis. The great potential of bilingual ECEC is also highlighted by the childcare attendance rates in the Netherlands, which are discussed in the following section.

1.2 Bilingual early childhood education and care in the Netherlands

In the Netherlands, there are generally two different types of formal ECEC facilities for children before they enter primary school at age four. The first is so-called center-based daycare for children between the ages of zero to four. Its main aim is to support working parents in combining work and care. The second type of ECEC are preschools that are visited by children between the ages of two and four. These preschools also offer educational programs that are especially targeted at children with low educated or non-Dutch speaking parents. Despite the fact that it might seem that these two types of early childhood education differ in terms of populations and aims (care versus education), they are very comparable in terms of quality as they fall under the same quality framework that “emphasizes the importance of social, emotional and cognitive outcomes for children” (Slot, 2014, p. 13).

A study conducted in 2021 by the Organization for Economic Co-operation and Development showed that for children between zero and two years old, the Netherlands has the highest enrolment rate in ECEC (65%) out of all European OECD countries (OECD, 2021). On average across all European OECD countries, approximately 36% of children aged zero to two attended ECEC. However, it should be noted that in the Netherlands, maternity leave is relatively short (16 weeks), and because of this, attendance rates of children below the age of one are higher. In addition, children in the Netherlands often attend a lower number of hours (OECD, 2016). The participation of three-year-olds is slightly lower than the average of all OECD countries. Approximately 75% of Dutch three-year-old children is enrolled in ECEC, whereas the EU average is at 80%. Still, the number of children enrolled in ECEC is substantial as well as the number of hours spent at ECEC: children below the age of four

spent an average of 88,7 hours a month in Dutch ECEC in the first quarter of 2022 (Rijksoverheid, 2022a). These ECEC attendance rates in the Netherlands thus underline how ECEC can make up a substantial amount of the total language input and how bilingual ECEC has great potential.

In 2107, the Dutch Ministry of Social Affairs and Employment decided to introduce bilingual ECEC in the Netherlands in center-based daycare, by means of a pilot study. This initiative took flight when the ministry signaled that a growing number of parents wanted their children to get acquainted with a foreign language from an early age: parents specifically indicated to find it important that their children learned to speak English fluently from a young age, since they think it is an important skill to have for their future (educational) careers (Staatsblad, 2017).

A maximum of 15 daycare organizations were permitted to use one other language in addition to Dutch, that language being either English, French or German. For the duration of the project, participating organizations were allowed to use these languages for up to 50% of the opening hours. They were free to design their bilingual input, as long as they did not exceed the maximum of 50% of English, French or German input. The participating organizations also had to meet some formal requirements. For example, the organizations had to formalize their language policies in a pedagogical policy plan and parents had to agree with the implementation of bilingual input. In addition to these requirements, teachers had to demonstrate to have acquired at least B2 language proficiency as formulated by the Common European Framework of Reference for Languages and both languages had to be present in the classroom (Staatsblad, 2017).

In addition to the aforementioned requirements, all organizations were obliged to participate in an evaluation study into the effects of bilingual ECEC on children's language development. This evaluation study, called Project MIND (Multilingualism in Daycare/Meertaligheid in Dagopvang), was carried out from

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2018 until 2021 to investigate the effects of bilingual ECEC on children's language development. The studies presented in this dissertation were also designed to evaluate bilingual ECEC in the Netherlands and research for this dissertation was thus conducted as part of project MIND.

After the announcement of the pilot study into bilingual ECEC in 2017, daycare organizations could sign up for participation. Ten different daycare organizations with 18 different locations were selected by the Ministry of Social Affairs and Employment to participate in the evaluation study and were thus permitted to offer bilingual ECEC for the duration of the project. All organizations chose to offer English in addition to Dutch and none opted for German. At the start of the project, one organization signed up to offer French, but had to drop out of the study due to staffing problems. In addition, five out of ten organizations participated in the evaluation study with monolingual groups, i.e. groups where only the Dutch language was spoken.

As the main aim of project MIND was to determine the effects of bilingual ECEC on children's language development, a longitudinal research design was used to monitor children's language skills over time in both Dutch and English. From September 2018 to December 2020, four measurement rounds were conducted with approximately seven to nine months in between in which children were tested on their receptive and expressive vocabulary skills in Dutch and English. In these four rounds of testing, children also participated in an elicitation task to elicit Dutch plurals for the purposes of this dissertation. Simultaneously, classroom observations were recorded and teacher and parental questionnaires were gathered, on which we will also report in this dissertation.

Children participating in our evaluation study attended either monolingual (Dutch) ECEC or bilingual (Dutch-English) ECEC, had various language backgrounds and differed in the amount of time spent at ECEC. As a result, the group of children participating in the MIND project was highly diverse and formed a continuum ranging from a monolingual upbringing (only exposed

to Dutch at home and ECEC) to a very multilingual upbringing (exposed to multiple languages at home and to Dutch and English at ECEC). Because of its heterogenous nature, this sample of children did not allow for a traditional group comparison between children attending monolingual ECEC versus children attending bilingual ECEC: children could attend monolingual (Dutch) ECEC while growing up in a multilingual household, or attend bilingual ECEC while growing up in a monolingual household.

For this reason, to investigate the effects of bilingual ECEC, we did not opt for a group comparison (monolingual ECEC attendees versus bilingual ECEC attendees) but instead made use of Dutch and English exposure measures at home and at ECEC for each participant. These exposure measures reflected how much Dutch or English a child was exposed to per week, at home and at ECEC. To determine these exposure measures, parents were asked to fill out a parental questionnaire. This parental questionnaire contained questions on which language(s) children were exposed to at home by their main caregivers. These exposure measures were used in some of the chapters included in this dissertation, as well as in Verhagen et al. (2022), where we reported on our evaluation study and on the effects of bilingual ECEC on children's receptive and expressive vocabulary skills, while taking into account the effects of language exposure at home.

The tasks that we used to assess passive and expressive vocabulary in Verhagen et al. (2022) and also in some of the studies reported in this dissertation were the Peabody Picture Vocabulary Test (henceforth: PPVT) (Dunn & Dunn, 2005, 2007) and the Expressive Vocabulary subtest of the Clinical Evaluation of Language Fundamentals (CELF) (Wiig et al., 2004, 2012). We used both tasks in both languages. In the PPVT, children were presented with four pictures and were asked to point to the correct picture after the experimenter read aloud the target word. In the expressive vocabulary task, children were asked to identify an

object, person or activity portrayed by an illustration that was shown (e.g. “What is this?” or “What is the girl doing?”).

Using Latent Growth Modeling (LGM), we investigated how Dutch and English language exposure measures at ECEC related to children’s development of Dutch and English over time, while taking into account any effects of exposure to these two languages at home (see Verhagen et al., 2022 for the full report). In total, 606 24- to 53 month-old children were included in the analyses that were tested in the four measurement rounds and of whom the parents had filled out the parental questionnaires. All children were tested at least once, 287 children were tested twice, 70 children were tested three times and five children were tested four times. Our results revealed that no negative effects from English exposure at daycare could be detected on the development in Dutch language skills, in receptive nor expressive vocabulary. This suggests that the presence of English at ECEC does not slow down or hinder development of the Dutch language. While no negative effects of English exposure at daycare on Dutch language skills could be detected, English exposure at ECEC did have a positive effect on English language skills, both in receptive and expressive vocabulary. Thus, more exposure to English at ECEC was associated with larger growth in English language skills.

Our models showed also that the effects of ECEC input were relatively limited as no effects for Dutch language exposure at daycare were found. Additionally, effects for home exposure on language development were much larger, indicating that home language input is more crucial to children’s language development. However, it is important to note that results of our study revealed no negative effects and positive effects only for language exposure at bilingual ECEC, suggesting that the exposure to one language did not go at the expense of the other (Verhagen et al., 2022).

1.3 Aim and research questions

Since we investigated the effects of bilingual ECEC on children's language development thoroughly in Verhagen et al. (2022), the studies presented in this dissertation instead focus on how the implementation of bilingual ECEC comes about in practice in the Netherlands, and on what the consequences of the presence of two languages in one classroom are for the two languages involved in terms of crosslinguistic influence on a structural level. By delving further into these topics, we provide an in-depth overview of bilingual ECEC in the Netherlands.

The first aim of this study is to further describe the sociolinguistic, educational and sociopolitical context in which this initiative came about, by taking into account the individual agencies of all parties involved (such as the government, teachers and parents). In doing so, we follow Schwartz and Palviainen (2016) who state that research on bilingual ECEC should not only consider children's language development, but also the perspectives of all parties involved as they all have different attitudes, beliefs and motivations that have considerable impact on the implementation of bilingual ECEC and its effects on language development. Schwartz and Palviainen (2016) thus claim that the interactions between these different attitudes, beliefs and motivations should be examined, as bilingual ECEC is always "embedded in a certain sociolinguistic, educational and sociopolitical context" (p. 610) that should not be ignored.

The second aim of this dissertation is to unravel the relationship between the context in which bilingual ECEC is embedded on the one hand, and the implementation and realization of language policies on the other, since the contexts in which bilingual ECEC's are embedded usually have consequences for how language policies are formed, implemented, and carried out at ECEC (Schwartz & Palviainen, 2016). For example, the language models and practices applied in classrooms are "typically not static but dynamic, re-negotiable and

complex” as teachers are able to modify their practices (Schwartz & Palviainen, 2016, p. 610).

Third, apart from exploring the relationships between contextual factors and the realization of bilingual ECEC, this dissertation further aims to investigate what the consequences for bilingual ECEC are for the two languages in question, as the context of Dutch-English bilingual ECEC provides us with a unique setting to further explore what happens when two languages meet. While the evaluation study by Verhagen et al. (2022) thoroughly investigated how Dutch and English language exposure at home and at ECEC influence the development of both, it did not provide insight into the interplay between languages in terms of crosslinguistic influence on a structural level. We believe that this interplay should be investigated further since in this particular situation, the two languages meet inside the classroom for a longer time period and have the possibility to foster a kind of bilingualism that is shared among a large group of speakers, creating more opportunities for structural crosslinguistic influence to occur. This raises the issue as to what the consequences of bilingual ECEC are for the two languages themselves. Usually when two languages meet, they can in some ways be affected by each other’s presence (e.g. see Serratrice, 2013 for an overview), but the ways in which languages interact are not entirely clear, as the results in bilingual acquisition studies with regards to crosslinguistic influence are sometimes mixed (van Dijk et al., 2021). This dissertation therefore also aims to further seek out under which circumstances languages might or might not affect each other. More specifically, this dissertation sets out to investigate how the presence of two languages in one classroom affect each other with regards to: (1) the actual practice of using and navigating two languages in one classroom, and (2) the (cross)linguistic level, by investigating the interplay between Dutch and English.

This dissertation thus aims to arrive at a better understanding of the implementation of bilingual ECEC in practice by addressing the broader research questions below:

- (1) What is the sociolinguistic, educational and sociopolitical context in which bilingual ECEC in the Netherlands transpired?
- (2) How is bilingual ECEC implemented and carried out, and how is this linked to the sociolinguistic, educational and sociopolitical context in which bilingual ECEC is embedded?
- (3) What are the consequences of the presence of two languages in bilingual ECEC for (1) the actual practice and use of Dutch and English in one classroom, and (2) for how Dutch and English affect each other structurally?

1.4 Outline of the dissertation

As the dissertation sets out to investigate the implementation of bilingual ECEC in the Netherlands in practice, the studies described in chapters 2 to 5 of this dissertation all describe different aspects of bilingual ECEC, such as the sociolinguistic, educational and sociopolitical context (chapter 2), the organization and realization of bilingual language input (chapters 2 and 3) and the interplay between Dutch and English (chapters 4 and 5). All chapters presented in this thesis together serve to answer the broader research questions that were formulated in the previous section.

Chapter 2 seeks to uncover the underlying ideologies behind the initiative to introduce Dutch-English bilingual ECEC. To do so, the study focuses on the implementation of bilingual input at the daycare centers participating in the MIND project. The chapter seeks out to explore (1) how the bilingual input is organized in bilingual ECEC and hereby focuses on *de jure* and

de facto management (Spolsky, 2004), (2) for whom bilingual ECEC is intended (and who in reality visit), (3) what the societal and education aims of the initiative are, and (4) what the status is of the two languages involved. To do so, the study makes use of qualitative as well as quantitative research methods, such as the analysis of policy documents and questionnaires filled in by parents and teachers. The chapter concludes by revealing how all these components are linked.

Chapter 3 further explores how bilingual input takes shape as it aims to shed more light on the matter as to how the actual practice of using and navigating two languages in one classroom comes about. More specifically, by analyzing classroom observations, it investigates how teachers create language learning contexts through informal interaction in Dutch and in English in bilingual ECEC classrooms, by exploring the discourse strategies and teaching techniques that Dutch-speaking and English-speaking teachers employ in teacher-child interactions. In addition, it investigates children's responses to these discourse strategies and teaching techniques. The concluding section explains how in both Dutch and English, teachers are able to create many different language learning opportunities in informal interaction and that they usually create bilingual contexts where the use of different languages in conversation is permitted. Additionally, the chapter concludes by highlighting that eliciting and modelling techniques are seemingly effective tools in eliciting responses in the target language by L2 children in bilingual ECEC.

Chapters 4 and 5 delve into the question as to how the two languages might interact and affect each other. To further deepen our understanding of the circumstances under which crosslinguistic influence occurs, chapter 4 focuses on the acquisition of the Dutch plural by two- and three-year old children who attend bilingual ECEC. This phenomenon could be argued to be influenced by presence of English in a child's input in this age group, due to partial overlap in plural marking between Dutch and English and variability in plural marking of Dutch. Therefore, more specifically in this chapter, we decide to explore the roles

of variability, overlap and language dominance more thoroughly in relation to the occurrence (or absence) of crosslinguistic influence in the acquisition of Dutch pluralization. In doing so, it brings together two research traditions (studies on language contact and bilingual language acquisition) that have been concerned with the interplay between languages. This study reports on experimental data of 95 two- and three-year-old children that were only exposed to Dutch and/or English at home and that attended bilingual ECEC. All children participated in an elicited production task designed specifically for the purposes of this study. The conclusion of this chapter brings to light how it can be useful to bring together insights from bilingual acquisition studies and language contact studies to investigate crosslinguistic influence.

Chapter 5 further investigates the interaction between Dutch and English, this time with regards to early lexical development. While crosslinguistic in the area of (morpho)syntax has been studied quite extensively, it is not yet entirely clear if and how crosslinguistic influence plays a role in children's early lexical development. Therefore, the main aim of this study is to unravel the effects of form similarity on the early lexical development of two- and three-year-old children learning English as a foreign language at Dutch-English bilingual daycare, by focusing on word learning in the 'weaker language' (English). More specifically, we investigate whether form similarity effects can be spotted in the acquisition of English receptive vocabulary, as well as in expressive vocabulary in the acquisition of Dutch-English translation equivalents. The study reports on data of 85 Dutch-dominant children that attended bilingual ECEC. The conclusion outlines whether knowing a form similar word in Dutch has an actual facilitating effect on learning a word in English in both expressive and receptive vocabulary or not.

Finally, chapter 6 summarizes the key findings presented in this dissertation. It provides a summary and synthesis of the individual studies described in this dissertation, by discussing the findings in relation to the three

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research questions. The chapter ends by reflecting upon whether the earlier is indeed the better in foreign language acquisition.

Chapter 2

The implementation and the underlying ideologies of bilingual early childhood education and care in the Netherlands

2.1 Introduction

In the Netherlands, being fluent in a foreign language in addition to Dutch is considered an asset. Foreign language learning is promoted in the Dutch educational system: in secondary education, all pupils learn English, and in the lower years of secondary education the acquisition of German and French is also compulsory. Whereas pupils' interest in German and French is decreasing (Koninklijke Nederlandse Academie van Wetenschappen, 2018), the role of English has become more prominent in Dutch society.

The role of the English language has become increasingly bigger after two world wars, and due to globalized pop culture and the internationally oriented job market English has firmly established itself in Dutch society (Edwards, 2016, p. 16). Nowadays, English is often used as a working language or second language next to Dutch in areas such as commerce and popular culture (Koninklijke Nederlandse Academie van Wetenschappen, 2018); and Ammon and McConnell (2002) have argued that English might be considered a national second language. The English language has taken on functions in education,

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business and media that “cannot be attributed merely to the accommodation of foreigners” and a sound knowledge of English is considered essential in Dutch students’ future work lives, both nationally and internationally (Edwards, 2016, p. 66).

While concerns have been raised about the status and use of Dutch due to the prominent position of English (for an overview, see Nortier, 2011), English is gaining ground in the Dutch educational system. This “Englishization” (a term coined by Earls, 2013) of the Dutch educational system has already left its marks in primary and secondary education: bilingual Dutch-English primary and secondary schools are becoming increasingly popular (Edwards, 2016, p. 28) and in 2017, the Dutch government proposed to introduce bilingual education into the Dutch early childhood education and care (henceforth: ECEC) system (Staatsblad, 2017). As part of a pilot study, bilingual curricula using English, French or German as an additional language next to Dutch could be implemented into Dutch ECEC. However, none of the participating ECEC centers opted for German or French¹. By implementing Dutch-English bilingual curricula into the ECEC system, effectively a fully bilingual track in the Dutch education system is created, running from zero to eighteen. Afterwards, one can choose to enroll in a Dutch or one of many English taught bachelor programs in higher education.

This chapter will delve deeper into the motivations behind the implementation of bilingual input in ECEC. Based on an analysis of collected policy documents and questionnaires filled in by parents and teachers, this study aims to uncover the ideologies that underlie the initiative to introduce bilingual Dutch-English education into the Dutch ECEC system. What is the ideology behind this initiative? And what does this tell us about the status of the two languages in bilingual ECEC in the Netherlands?

¹ At the start of the pilot study, one organization signed up to offer French. Due to staffing problems, this organization had to drop out of the experiment.

2.2 Background

2.2.1 Ideologies in bilingual education

Bilingual education is a simplistic label for a phenomenon that can be manifested in a variety of ways. The term has been used to refer to many different sorts of education in which different languages are implemented. For example, it is not only used to refer to a classroom in which formal instruction is used to foster bilingualism, but also to a classroom where bilinguals are present.

In different types of bilingual education, the status of the two languages involved shape the way bilingual input is implemented. The way in which bilingual education is designed is thus a reflection of the roles that these languages play in society on a cultural, social and political level and reflect the language ideologies that are present in society (Spolsky, 2004). Language ideologies are the different ways people think about language and how it should be used (Silverstein, 1979). These thoughts about language are a product of cultural, political and moral interests; they are socially constructed and “constructed in the interest of a specific social or cultural group” (Kroskrity, 2004, p. 501).

The term language ideologies is often used interchangeably with language attitudes since both involve speakers’ feelings and beliefs about language and language use (Kroskrity, 2018). While some consider the terms to be indistinguishable, others assume that language attitudes can offer a window into understanding the status of languages in society and the underlying ideologies, since language attitudes could be dominated by ideological positions present in society (Dyers & Abongdia, 2010). Within this view, studying language attitudes thus provides insight into language status and underlying ideologies.

Language ideologies are translated into language policies once “a person or a group seeks to impose their language ideologies on others through management of others’ language” (Bernstein et al., 2018, p. 458). Language policies thus reflect underlying ideologies and can be carried out through different kinds of management (Spolsky, 2004). Policies can be carried out through *de jure* management (explicit plannings and interventions) and *de facto* management (implicit social practices). Consequently, studying language ideologies in education entails studying language policies in a classroom context, which in turn involves studying language management (*de jure* and *de facto*).

Underlying ideologies are thus not only reflected in *how* the bilingual programs are designed, but also in their societal and educational aims, and for *whom* the forms of bilingual education are designed. Whether education is considered bilingual in the literature is not only determined by the languages offered in the classrooms but also by students and their language backgrounds (Baker, 2011; García & Wei, 2013). The different forms of bilingual education can thus be distinguished by the following key dimensions: (1) how it is *organized*, (2) who the *target audience* is, (3) what the societal and educational *aim* is, and (4) the *status* of the languages involved. This subsection will discuss various forms of bilingual education in relation to these four key dimensions: *monolingual*, *weak prestigious*, *strong prestigious* and *translanguaging forms* of bilingual education.

Forms of education that involve groups consisting of students with non-native language backgrounds are often categorized as being *monolingual forms of bilingual education* (Sierens & Van Avermaet, 2014). The societal aim is then to immerse these non-native speakers in the majority language (Baker, 2011). Baker (2011) states that the overall aim of these monolingual forms of bilingual education is not to create bilingual speakers, but rather competent monolingual speakers of the more prestigious majority language.

Types of bilingual education that involve languages of children from immigrant homes should be distinguished from types of bilingual education that

involve educational elites. The latter involve languages that have a high degree of cultural prestige (Sierens & Van Avermaet, 2014). These forms of bilingual education have been labeled *prestigious bilingual education* (García & Wei, 2013). These prestigious forms of bilingual education can be implemented in different ways: some of which have been considered weak in the literature, while others are thought to be strong (Baker, 2011).

In *weak forms of bilingual education* large parts of the curriculum are offered in the majority language to which some foreign language teaching of a second prestigious language is added (Baker, 2011). The second language is not necessarily used as a medium of instruction, but the main focus is rather on language learning of that second language. This type of bilingual education mostly leads to a limited knowledge of a foreign language (Baker, 2011). However, Baker (2011) notes that when economic circumstances encourage the acquisition of a particular second language with power (such as English in the Netherlands), a weak form of bilingual education might be fruitful.

In so-called *strong forms of bilingual education* two languages with power can also serve as a medium for classroom communication and teaching, rather than being taught as separate foreign language teaching subjects (Baker, 2011). The aim of such forms of bilingual education is to create competent bilingual speakers of both languages. Cummins (2008) claims that these types mostly depart from the idea that the two languages should be kept apart at all times, either by subject, time or teacher. Within this approach, switching between languages and language is often stigmatized and not considered helpful, since it is assumed that this might lead to confusion and disturb distinct separation of the languages.

The most common way to establish boundaries between the two languages in strong forms of bilingual education is by separating the two languages by teacher, the so-called “one person, one language” principle (henceforth: OPOL) (Ronjat, 1913). This approach requires the presence of two teachers in the classroom, one of whom communicates consistently in one

language and one in the other. By using this approach, students are conditioned to associate one language with a specific person. It is believed that this reduces chances of mixing the two languages (Baker, 2011).

The aforementioned forms of bilingual education have in common that they seem to be built upon the assumption that the language groups are homogeneous (García & Wei, 2013, p. 50), such as language minority students having to learn a majority language (monolingual forms) or language majority students learning a high-prestige foreign language (prestigious weak and strong forms of bilingual education). García and Wei (2013) instead state that bilingualism classrooms are filled with speakers of different origins, characteristics and experiences. Also, while supporters of the OPOL-principle believe language mixing to be unhelpful and undesirable, García and Wei (2013) claim that there is plenty of empirical evidence that in bilingual classrooms, both teachers and students switch between languages very often to teach and learn.

For these reasons, García and Wei (2013) introduce the concept of *translanguaging*: instead of talking about an L1 and L2, the *relationship* between the two languages should be reinforced. Translanguaging is defined by Canagarajah (2011) as “the ability of multilingual speakers to shuttle between languages, treating the diverse languages that form their repertoire as an integrated system” (p. 401). For bilingual education this would mean that, all languages of all students and teachers are integrated inside the classroom without boundaries and separations, allowing students to draw from all of their language skills (in two or more languages), rather than inhibiting and constraining these language skills to monolingual instructions and practices (García & Wei, 2013). Furthermore, in the aforementioned forms of bilingual education (*monolingual, weak* and *strong*), the amount of time spent on the languages generally depends on the status of the languages: if two languages of power are involved, both are typically allowed to be present (*weak* and *strong* forms), if one language of power is involved, only this language tends to be allowed (monolingual forms). In the *translanguaging* forms of

bilingual education however, all languages are welcome, irrespective of status (García & Wei, 2013). See Table 2.1 for an overview of the different forms of bilingual education in relation to the four key dimensions.

Table 2.1 Overview of forms of bilingual education

| Type | Organization | Target audience | Aim | Language status |
|---------------------------|---|---|---------------------------------------|---|
| <i>Monolingual</i> | Immersion in majority language, no place for home languages | Language minority students | Monolingualism (in majority language) | Home languages: low Majority language: high |
| <i>Prestigious weak</i> | Mainstream education with L2- classes | Language majority students | Limited bilingualism | Both languages: high prestige |
| <i>Prestigious strong</i> | One person, one language approach | Language majority students | Bilingualism | Both languages: high prestige |
| <i>Translanguaging</i> | No restrictions on language use | Language minority and majority students | Dynamic bilingualism | All languages have equal status (neither high, nor low) |

This overview illustrates that the different ways in which bilingual education can be designed resonate with different underlying attitudes towards and ideologies about the two languages concerned. One of the goals of this study is to uncover the underlying ideologies of the initiative to introduce Dutch-English bilingual education into the Dutch preschool system by describing this initiative in relation to the four key dimensions listed in Table 2.1. Because the initiative fits into a wider trend of Dutch-English bilingual education, the next subsection will discuss the role of the English language in Dutch society and education.

2.2.2 The role of English in Dutch education

Out of the 25 member states of the European Union, inhabitants from the Netherlands are most likely to speak English as a foreign language: in the Special Eurobarometer 386 90% of the respondents in the Netherlands indicated to speak English (European Commission, 2012). This could be attributed to the role of English in Dutch education: according to Ammon and McConnell (2002), the Netherlands is “one of the most advanced countries in Europe concerning the integration of instruction of English in the national education system” (p. 99).

Today, the English language has integrated the most in Dutch higher education. Over the years, a large part of Dutch curricula in higher education switched to English because of “the commodification of education and competition between universities” (Edwards, 2016, pp. 31–32). Proponents claim that students from abroad have no intention to learn Dutch, thus offering curricula in English constitutes a big selling-point for Dutch universities. Nowadays, out of all non-English speaking countries, the Netherlands offers the highest number of English-taught programs in higher education in Europe (Wächter & Maiworm, 2008). A growing number of bachelor's programs are being taught only in English, as well as approximately 70% of the master's programs (Nuffic, 2017, p. 14). Still, opponents claim it might lead to a decrease in educational quality and drive a wedge between an elite and the rest of the Dutch population (Adam, 2012, as cited in Edwards, 2016).

In secondary education, the introduction of bilingual Dutch-English programs in 1990 was met with little criticism. Up until then, English had already been a compulsory subject in all streams of secondary education (corresponding to the previously discussed *prestigious weak forms of bilingual education*). The decision to offer bilingual secondary education was a bottom-up decision, mostly driven by parents and teachers who believed that proficiency in English would benefit

the children's education and socioeconomic status (Edwards, 2016, p. 29). The Ministry of Education set three main criteria to the implementation of bilingual curricula in Dutch secondary schools, which are still effective today: first, schools are allowed to teach no more than 50% of the total number of lessons in English. Second, the Dutch curriculum has to be followed. Third, bilingual programs may not come at the expense of Dutch language proficiency (Admiraal et al., 2006, p. 77). Bilingual secondary education is usually offered in lower years of secondary education (age group 12-15 years). English is used as a medium of instruction (using the CLIL method: Content and Language Integrated Learning) in a variety of subjects (Admiraal et al., 2006), a system that corresponds most to the aforementioned *prestigious strong forms of bilingual education*. In the last two years of secondary education, Dutch is often used as a medium of instruction instead of English, since parents want their children to have a Dutch preparation for the Dutch school leaving exams (Admiraal et al., 2006).

Bilingual secondary education was explicitly intended for Dutch children who are raised monolingually at home and to enhance Dutch pupils' opportunities in education and on the national and international job market. Some worry that these bilingual tracks might only attract an educational elite (Sieben & van Ginderen, 2014; Sierens & Van Avermaet, 2014). Despite these worries, the number of bilingual tracks in secondary education in the Netherlands is still growing (Sieben & van Ginderen, 2014). Nowadays, bilingual curricula are implemented in all streams of secondary education (vmbo, havo and vwo²). In 2021, 130 secondary schools in the Netherlands are a part of *netwerk tto (tweetalig onderwijs* 'network bilingual education') and were reported to offer bilingual curricula (Nuffic, 2021).

² Vmbo, havo and vwo are three different streams of secondary education in the Netherlands. Vmbo stands for pre-vocational secondary education, havo for senior general secondary education and vwo for pre-university education.

In primary education a similar movement towards bilingual education is taking place. In 1986, English was introduced as a mandatory subject into Dutch primary education for groups 7 and 8 (i.e. pupils aged 11 and 12) and over the last two decades, an increasing number of Dutch primary schools have implemented English in their curricula in lower groups by means of early foreign language education, known as *vvto* (*vroeg vreemdetalenonderwijs* ‘early foreign language education’) in the Netherlands. *Vvto* is a prime example of what Baker (2011) would classify as a *prestigious weak form of bilingual education*: large parts of the curriculum are offered in the majority language (Dutch), to which some foreign language teaching of English is added, typically by means of games and singing for a maximum of three hours a week starting at age four (Nortier, 2011). The number of schools offering *vvto* rose from 20 in 1999 (Taalunieversum, 2006, as cited in Edwards, 2016) to 1212 out of 6808 schools in 2018 (Nuffic, 2018).

Similar to the initiative in secondary education, the increase in foreign language teaching at primary school was mainly driven by parental demand. Even though the government promotes *vvto* in primary schools, there have been some concerns about this development: opponents believe that the time spent on English will be at the expense of time spent on Dutch (De Korte, 2006), which would lead to deficiencies in both languages for children from immigrant families (Appel, 2003). Despite such criticisms, early English foreign language teaching has become increasingly popular in Dutch primary education: in 2013 the government announced a pilot study into bilingual primary education, known as *tpo* (*tweetalig primair onderwijs* ‘bilingual primary education’). This pilot study allows 17 primary schools to teach up to 50% of the time in English. This 50% maximum is considerably higher than the maximum of three hours a week that is currently permitted.

As part of this pilot study, Jenniskens et al. (2018) investigated the ways in which bilingual curricula were implemented. Results showed that the majority

of schools used the OPOL-principle to implement a bilingual curriculum, corresponding to *prestigious strong forms of bilingual education*. Also, both parents and teachers had positive attitudes towards early English language teaching in Dutch primary schools. Bilingual primary education thus seems to continue to make progress, not only due to government support, but also due to parental demand and positive views on bilingual primary education.

2.2.3 Current study

Similar to developments in primary education, in 2017, the Dutch government proposed a pilot study for the introduction of bilingual education into the Dutch ECEC system. This chapter reports on data collected in this pilot study, called Project MIND (Multilingualism in Daycare), in which participating daycare centers were allowed to offer either English, German or French in addition to Dutch. Before the start of this pilot study, ECEC centers were only allowed to offer other languages next to Dutch (1) if this was a commonly used regional language, and (2) if the daycare's audience mainly consisted of highly skilled migrant workers (in the document referred to as "expats") (Staatsblad, 2017, p. 5).

In the Netherlands, ECEC offers care for children between zero to four years. Some centers have special groups for babies or toddlers (so-called horizontal groups), whereas other combine the age groups (vertical groups). Usually, on all groups, at least two staff members are present, since the ratio of children per staff member ranges from 1:3 (0 years) to 1:8 (2-4 years).

All participating organizations in the pilot study choose to offer English. This illustrates the prominent role of English in Dutch society and education, as previously discussed in subsection 2.2.2. They were free to design their bilingual input, as long as they did not exceed the maximum of 50% of the allowed English input. In total, ten ECEC organizations signed up for this pilot study, with

eighteen locations in different parts of the country. Not all organizations were fully bilingual, some offered bilingual education only to one of their groups. In total, 35 bilingual groups (including their children, parents and teachers) participated in the pilot study.

This study seeks to uncover the ideology behind this initiative to introduce bilingual Dutch-English education into the Dutch ECEC system. To do so, this study will focus on language policies of the daycare centers and attitudes towards the two languages to investigate the status of the two languages, since ideologies are reflected in language policies and attitudes towards the two languages involved, as discussed in section 2.2.1 (Bernstein et al., 2018; Dyers & Abongdia, 2010).

This study will make use of qualitative as well as quantitative methods. First, policy documents will be analyzed, such as the official announcement of the pilot study by the Dutch government to determine the societal and educational aims. The daycares' policy plans will be analyzed to gain further insight into *de jure* management. Second, this study relies on teacher questionnaires to investigate *de facto* language management (Spolsky, 2004). Third, to further understand the audience and their attitudes towards the languages involved, parental questionnaires will be used.

In doing so, the initiative will be discussed in relation to the aforementioned key dimensions along which different forms of bilingual education can vary and will answer the following research questions: (1) how is the bilingual input *organized* (*de jure* and *de facto* management), (2) for *whom* is bilingual ECEC intended (and who, in reality, visit Dutch-English ECEC?), (3) what is the societal and educational *aim* of this initiative, and (4) what is the *status* of the languages involved?

2.3 Method

To uncover the ideology behind this initiative, data collection was accomplished in a variety of ways. This study relies on collected documents such as policy plans, a teacher questionnaire and parental questionnaire.

2.3.1 Policy documents

In 2017, the Dutch government announced the pilot study on the implementation of bilingual programs in Dutch ECEC in the Dutch *Staatsblad*. This document, consisting of 21 pages, is an official publication of changed laws and an official notice of the pilot study. Since ideologies are constructed in the interest of a social or cultural group (Kroskrity, 2004), to unravel the government's aims and ideology, the document was analyzed on (1) reasons for implementing a bilingual program into Dutch ECEC, and (2) the intended target audience.

In addition, pedagogical policy plans from all participating ECEC centers were analyzed. All ECEC organizations in the Netherlands are required to have a pedagogical policy plan, in which they elaborate on their views on four pedagogical matters: (1) how emotional safety is guaranteed, (2) how the development of personal skills is promoted, (3) how the development of social skills is promoted, and (4) how the transfer of values and standards take place. Also, if any bilingual input is offered, daycare organizations are required to elaborate on its implementation and organization in their policy plans.

At the start of the pilot study, all participating ECEC centers provided their pedagogical policy plans. The length of the plans ranged from 14 to 50 pages. Pedagogical policy plans from all participating organizations (ten in total) were analyzed on two aspects: (1) reasons for implementing a bilingual language

program (educational aims), and (2) how the two languages are implemented in their daily routines (*de jure* management).

2.3.2 Teacher questionnaire

The teacher questionnaire served to gain further insight into *de facto* management. This questionnaire contained a total number of 17 questions about topics such as language switching, as well as language proficiency in Dutch and English, content of conversations inside the classroom and the organization's general communication practices. For each organization, this questionnaire was filled in on paper by the Dutch-speaking and English-speaking teachers who worked most often at the participating groups, and thus had the most knowledge of the organization's language strategies and the bilingual input being offered. In total, 47 teachers filled in this questionnaire. To investigate *de facto* management, only the answers to questions on language switching and language proficiency were used.

2.3.3 Parental questionnaire

Parents were asked to fill out a questionnaire on their child's language development and language proficiency, weekly schedules, as well as questions about language input offered at home, content of conversations at home, switching between languages and language mixing. The questionnaire's length was dependent on the number of languages spoken at home. To elicit more information on the children's demographic background, questions about language proficiency and language backgrounds of the parents were included, as well as questions about their educational backgrounds, reasons for choosing bilingual daycare and questions about the attitudes towards Dutch and English.

The parental questionnaire was created by using Easion Survey version 3.107 (Parantion, 2017) and was sent by e-mail. Parental questionnaires were filled out and completed for 236 children in total. In this study, only the information on the language background, educational background, motivations and attitudes is included. Ethical approval for this study was obtained from the Ethics Committee Faculty of Humanities at the University of Amsterdam. All participants gave permission through written informed consent.

2.3.4 Data analysis

Data was analyzed in two different ways. For the policy documents relevant passages were noted down and analyzed qualitatively. These were passages in which reasons for bilingual implementation of bilingual programs and/or (targeted) audiences were discussed. In addition, for the pedagogical policy plans, passages that mentioned the way bilingual input was implemented were also marked to gain further insight into *de jure* management.

Data from the questionnaires were analyzed quantitatively. Since answers to the questions on language switching used from the teacher questionnaires were multiple choice closed-ended questions, no pre-processing of the data was necessary. Parental questionnaire data also partly consisted of answers to multiple choice-close ended questions (questions on language and educational backgrounds). However, questions on the parents' motivations and attitudes were all open questions. Answers to these questions were coded into different categories, that were developed inductively from the data.

2.4 Results

Results will be presented in light of the four key dimensions along which different forms bilingual education can vary. Section 2.4.1 discusses the organization of bilingual input (*de jure* and *de facto*), section 2.4.2 the aims and intended audience and section 2.4.3 the audience and the parents' attitudes towards Dutch and English.

2.4.1 Organization of bilingual input

2.4.1.1 *De jure management*

The daycare organizations had different ways of implementing bilingual input into their daily routines: according to the policy documents, six out of ten daycares implemented the OPOL-principle where one teacher only spoke Dutch and the other only spoke English. At all times, two teachers were present inside the classroom. This would typically result in an approximately fifty-fifty language distribution where a clear separation between the two languages is made by linking one language to one person, responding to *strong forms of bilingual education* as formulated by Baker (2011).

Whereas the majority of daycare centers opted for an OPOL-principle, one daycare organization chose a slightly different approach. In its policy document it mentioned that one teacher only spoke Dutch, whereas the other switched between Dutch and English. This daycare organization reported this teacher to be using Dutch and English throughout all activities during the day. This means that no clear boundary between languages was set and children attending this organization would typically be less exposed to English during the

day than children attending organizations in which an OPOL-principle is implemented.

According to the policy plans, three organizations opted for a system that resembled early foreign language instruction the most (and thus responding to *weak forms of bilingual education*), only offering English language input during set times of the day. In these organizations, English was not necessarily used as a medium of instruction for teaching or for basic classroom communications, but rather as a separate subject on its own. Two of these organizations adopted English foreign language instruction methods created for ECEC: Groove.Me (Blink Engels, n.d.) and Benny's Playground (Early Bird, n.d.). One organization adopted the so-called sandwich-method during snack time, in which every English sentence was consequently translated in Dutch and then back to English (English-Dutch-English, resembling a sandwich).

2.4.1.2 De facto management

To gain insight into *de facto* management, the language use of staff members inside the classroom was examined more closely by means of a questionnaire. In response to a closed question if they would adapt their language choice, 27 teachers out of 47 teachers who filled in the questionnaires about language input indicated they would indeed adapt their language choice to the children's needs, and therefore switch between languages. The questionnaire also contained multiple choice closed-ended questions on language proficiency in Dutch and English. Results showed that the Dutch-speaking teachers reported to have advanced, beyond advanced or perfect proficiency in English (76%) and the English-speaking teachers in Dutch (67%). This means that, in theory, the majority of Dutch- or English-speaking teachers are able to switch between languages.

In a multiple choice closed-ended question, teachers were asked why they would switch languages. The main reason for teachers to switch to either Dutch or English was for children to be able to understand them: 25 out of 27 teachers reported that they switched languages for this reason. Additionally, 17 out of 27 teachers switched languages to comfort children and 15 out of 27 to correct children. Interestingly, the teachers who reported not to switch between languages were able to speak the other language. Only five out of 20 teachers who reported not to switch categorized themselves as being absolute beginners or beginners in the other language.

It should be noted that 42 of the 47 teachers who filled in this part of the questionnaire worked at organizations where – according to the policy documents – the OPOL-principle was adopted, meaning that they were supposed to stick to one language (either Dutch or English) when communicating with a child. Clearly, there are differences between *de jure* and *de facto* language management and policy documents do not reflect the true state of affairs. Results from the questionnaire indicate that 25 out of these 42 OPOL-teachers did switch languages for the aforementioned reasons. This illustrates that some teachers are stricter than others at sticking to the OPOL-principle.

2.4.2 Aims and intended audience

The official announcement was analyzed to gain further insight into the societal and educational aims of this initiative and whether or not this initiative was introduced in the interest of a specific social group (Kroskrity, 2004). It gives a number of reasons for introducing bilingual ECEC. First, it is stated that “young children have the unique power to learn multiple languages through play” (Staatsblad, 2017, p. 6) and that “bilingualism can be an advantage for children, because from a very young age, they are aware of language comprehension and learn to deal with differences in interpretation” (Staatsblad, 2017, p. 6).

Furthermore, the announcement states that (1) a growing number of Dutch parents want their children to learn English at an early age, (2) parents find it important that their child becomes fluent in English because they believe it will benefit their future and better prepare them for the English classes at secondary school, and (3) it will enhance future opportunities on an internationally oriented job market (Staatsblad, 2017, p. 6). Thus, the official request seems to be targeted towards Dutch-speaking children: the aim is that they acquire an additional second language at a young age while it is still relatively easy to do so.

Also the participating daycare organizations' policy plans were analyzed to gain further insight into the daycares' aims. Similar to the statements made by the Dutch government in the official announcement of the pilot study, all ECEC centers highlighted children's capacities to easily acquire two languages simultaneously in their pedagogical policy plans. In addition, they also mentioned the benefits that bilingualism might have, such as benefits for future careers and educational paths as well as cognitive benefits.

However, the participating ECEC centers seemed to differ in the audiences they targeted. Roughly, two different audiences were targeted by different organizations: children who acquire English as a second language and/or children who acquire Dutch as a second language. Whereas five daycare centers only explicitly mentioned the advantages of acquiring English in addition to Dutch in their policy plans (similar to the official announcement of the Dutch government), five daycare centers also discussed the advantages of exposure to the Dutch language for children who do not hear Dutch at home, but any other language. One organization explicitly mentioned that their audience consists for a large part of children from highly skilled migrant workers who acquire English as their first or second language, who sometimes stay in the Netherlands only temporarily and who usually attend 100% English daycares that are meant specifically for children from highly skilled migrant workers: as their main audience consists of children from international families, these centers are

allowed to offer 100% English ECEC. Another ECEC center mentioned that parents who speak English would want their children to get acquainted to Dutch because it might lead to an easier integration into the Dutch community. Thus, whereas the educational aim as stated by the government in the official request seemed to be targeted at monolingual Dutch speakers, some ECEC centers instead seemed to be targeting non-Dutch speaking children of highly skilled migrant workers, who acquire Dutch as their second (or third or fourth) language.

2.4.3 Audience

2.4.3.1 Characteristics and motivations

While the government appeared to envisage a Dutch-speaking target audience, in reality, results from our parental questionnaire indicate that the audience mainly consisted of multilingual families. Table 2.2 shows which languages were spoken at home per organization.

Table 2.2 Overview of children's language background

| Organization | Language policy | Dutch only | English + other | Other | Dutch + English | Dutch, English + other | Dutch + other | English only |
|--------------------|--|------------|-----------------|-------|-----------------|------------------------|---------------|--------------|
| <i>A (34)</i> | OPOL | 0% | 44% | 21% | 9% | 21% | 3% | 3% |
| <i>B (9)</i> | OPOL | 0% | 22% | 0% | 33% | 22% | 22% | 0% |
| <i>C (14)</i> | OPOL | 0% | 29% | 21% | 14% | 14% | 21% | 0% |
| <i>D (19)</i> | OPOL | 37% | 11% | 21% | 5% | 21% | 5% | 0% |
| <i>E (63)</i> | OPOL | 38% | 8% | 16% | 14 | 6% | 13% | 5% |
| <i>F (54)</i> | OPOL | 22% | 17% | 22% | 15% | 9% | 7% | 7% |
| <i>G (10)</i> | One speaks Dutch, other both Dutch and English | 0% | 30% | 20% | 40% | 0% | 10% | 0% |
| <i>H (11)</i> | Sandwich method | 64% | 9% | 0% | 0% | 18% | 9% | 0% |
| <i>I (9)</i> | Benny's Playground | 67% | 0% | 0% | 11% | 11% | 11% | 0% |
| <i>J (10)</i> | Groove.Me | 80% | 0% | 0% | 0% | 20% | 0% | 0% |
| <i>TOTAL (233)</i> | | 28% | 18% | 16% | 13% | 12% | 10% | 3% |

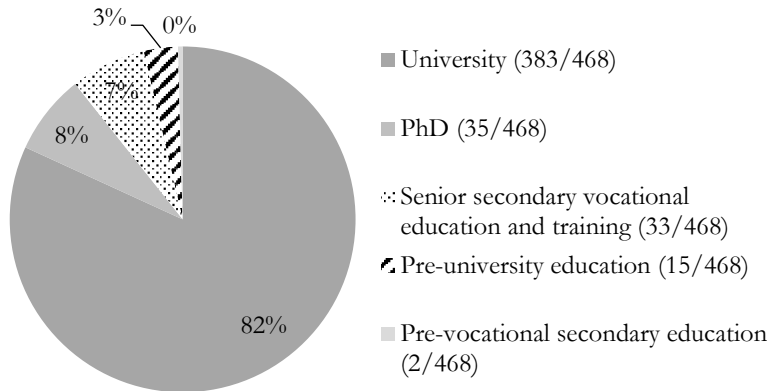
The results from the parental questionnaire paint a highly international, multilingual picture: the majority of children (72%) visiting a bilingual daycare center grew up in a multilingual household. Only 28% of the audience consisted of children growing up in a monolingual Dutch household. Approximately 37% of the children grew up in a household where no Dutch is spoken at all (3% English only, 18% English and any other language, 16% other languages). This means that many children acquired Dutch as a second language in the bilingual daycare centers. This is in line with the pedagogical policy plans from some organizations that specifically seemed to target non-Dutch-speaking children. In addition, approximately a quarter of the children (25%) grew up with both Dutch and English (and any other language) at home.

It should be noted that there was an interplay between the demographic characteristics of the audience and implementation of the English language into daily routines: the more multilingual the audience, the more English the language input offered at daycare centers. The majority of organizations, visited by a more multilingual audience opted for strong forms of bilingual education by implementing the OPOL-principle. Organizations opting for weaker forms of bilingual education seemed to have a more monolingual Dutch audience (in Table 2.2 organizations H, I and J's audiences consisted of monolingual Dutch children for 64%, 67% and 80% respectively, whereas organizations A, B and C were not visited by any monolingual Dutch children). The geographical location also played a role: organizations that were mostly located outside of the Randstad were primarily visited by Dutch-speaking children, and organizations located in the Randstad primarily by a multilingual audience.

In addition, results from the questionnaire do not only show that the majority of the children grew up in a multilingual household, but that the parents were also highly educated. Figure 2.1 illustrates that a large majority of parents completed university (82%). Also, 8% of parents completed their PhD. The

results from the parental questionnaire thus suggest that the bilingual daycare centers had a highly educated, international audience.

Figure 2.1. Overview of audience’s educational background.



In an open question, parents were asked about their reasons for choosing bilingual daycare (see Table 2.3 for an overview). Approximately one-third of the parents (30%) indicated that they did not necessarily choose this daycare center for its bilingual nature but for practical reasons such as proximity to the home: these were mostly Dutch-speaking parents. Parents who did choose bilingual daycare for a specific reason, gave a wide variety of reasons for doing so. The main reason parents gave was that they wanted to preserve their English heritage (19%). Another 10% of the parents indicated to find it important that their child learned a second language at a young age, and that they therefore opted for bilingual education. Some parents claimed to have chosen a Dutch-English daycare center to better integrate in the Netherlands (5%); these were all parents who indicated not to speak any Dutch at home and who would otherwise have opted for 100% English daycares specifically meant for children of highly skilled migrant workers. This corresponds with policy plans from daycares who also targeted children acquiring Dutch as a second language, as discussed in subsection 2.4.2.

Table 2.3 Parents' reasons for choosing bilingual daycare (n = 236)

| | |
|--|-----|
| <i>Did not choose for this daycare for its bilingual input</i> | 30% |
| <i>Preserving heritage/ reflecting family situation</i> | 19% |
| <i>(Second) language learning at a young age</i> | 10% |
| <i>(Cognitive) development</i> | 7% |
| <i>Importance of English</i> | 7% |
| <i>Educational experiences</i> | 6% |
| <i>Integrating in country of residence</i> | 5% |
| <i>Possibility of international move</i> | 4% |
| <i>Becoming bilingual/ biliteral</i> | 4% |
| <i>Culture and diversity</i> | 3% |
| <i>Future and career opportunities</i> | 3% |
| <i>Other</i> | 2% |

2.4.3.2 Language attitudes and status

In addition to questions about their main motivations for choosing bilingual Dutch-English daycare, parents were also asked about their attitudes towards the two languages. First, parents were asked if they wanted their child to learn English and Dutch. Most parents wanted their child to learn both English and Dutch: 88% of the parents indicated that they wanted their child to learn English, 95% of the parents indicated that they wanted their child to learn Dutch. Parents were also asked why they wanted their child to learn Dutch and English in two open questions. See Table 2.4 for reasons parents gave for wanting their child to learn English, and Table 2.5 for reasons to learn Dutch.

The main reason parents give is because English is the language of the family (24%). Once again, the multilingual character of the audience is reflected in this answer. Others believe knowledge of English can be beneficial to their

children's future career and education opportunities (20%). Additionally, some parents want their child to learn English because English is considered a world language (19%). Other parents think knowledge of the English language might facilitate communication with others (14%) and some parents want their child to learn English because they are considering moving abroad in the future (13%).

Table 2.4 Parents' reasons for wanting their children to learn English (n = 208)

| | |
|--|-----|
| <i>Language of the family</i> | 24% |
| <i>Future career and education opportunities</i> | 20% |
| <i>World language</i> | 19% |
| <i>Facilitating communication with others</i> | 14% |
| <i>Possibility of international move</i> | 13% |
| <i>Other</i> | 7% |
| <i>Not specified</i> | 4% |

When parents were asked for reasons why they wanted their child to learn Dutch, again, the multilingual language backgrounds and international characteristics of the audience are reflected in the answers. Whereas for English the most frequently mentioned reason was that English was the language of the family, for Dutch, most parents (46%) wanted their child to learn the language because it is the language of the country of residence (also note that this answer was only given by parents who did not speak Dutch at home). One-third (33%) of the parents wanted their child to learn Dutch at daycare because it is the language of the family. It should be noted that all Dutch-speaking parents indicated that they wanted their child to acquire Dutch at bilingual daycare.

Table 2.5 Parents' reasons for wanting their children to learn Dutch (n = 236)

| | |
|--|-----|
| <i>Language of country of residence</i> | 46% |
| <i>Language of the family</i> | 33% |
| <i>Facilitating communication with others</i> | 5% |
| <i>Future career and education opportunities</i> | 5% |
| <i>Not specified</i> | 6% |
| <i>Other</i> | 6% |

2.5 Discussion

This study sought to uncover the ideology behind the initiative to introduce bilingual Dutch-English education into the Dutch ECEC system. To do so, the study focused on language policies of the daycare centers and attitudes towards the two languages. The initiative was discussed in relation to the key dimensions along which different forms of bilingual education can vary: (1) organization of bilingual input (*de jure* and *de facto*), (2) audience, (3) societal and educational aims, and (4) status of Dutch and English.

By using qualitative data (the analysis of policy documents) as well as quantitative methods (teacher and parental questionnaires) two competing underlying ideologies were found. When it comes to the societal and educational aims, a discrepancy between the aims of the Dutch government and the aims of some of the organizations and the majority of parents was found. These aims corresponded with two different ideologies. The Dutch government's intentions appear to be most in line with a prestigious strong ideology: the official request seems to be targeted towards Dutch-speaking children and the aim is that they acquire an additional second language of power (English) because it is believed that it will benefit their future. The policy plans of daycare centers mostly visited

by Dutch-speaking children also resonated with these prestigious strong motivations. On the other hand, policy documents – especially those from organizations visited by an international audience – were focused on exposing non-Dutch speaking children to Dutch. Data from parental questionnaires on the motivations of parents to enroll their children in bilingual daycare reflected the same two ideologies.

Not only the targeted audiences, but also the way the bilingual input was implemented varied from daycare to daycare. Analysis on *de jure* language management showed that six out of ten daycares chose for so-called *strong forms* of prestigious bilingual education by means of an OPOL-principle, whereas others opted for *weaker forms* of prestigious bilingual education by adopting early English language methods and fewer hours of exposure on fixed times of the day. However, results on *de facto* language management from the teacher questionnaire showed that the policy documents from organizations do not necessarily reflect the true state of affairs: the majority of the OPOL-teachers indicated to switch between languages. While this finding is suggestive of *translanguaging* approaches to bilingual education, it remains to be seen whether this behavior is fully rooted in the *translanguaging* ideology where all languages are welcome, irrespective of time, person or status. Previous studies show that teachers sometimes switch languages if they feel that the child's wellbeing is at risk (Caporal-Ebersold & Young, 2016). Also, it should be noted that information on *de facto* management was only gathered through two questions on language switching: this information is based on what teachers themselves report to be doing. No classroom observations were included in this study to further analyze language use in- and outside the classroom.

This study further revealed an interplay between audience and organization of bilingual input. Monolingual Dutch children mostly visited weaker forms of bilingual education whereas the multilingual audience mostly visited organizations where strong forms of bilingual education were

implemented. This could possibly be attributed to the fact that some of the OPOL-organizations already offered bilingual input before the start of the pilot study, because their audience consisted of highly skilled migrant workers. The organizations opting for weaker forms of bilingual input started doing so at the start of this study. These organizations were mostly visited by Dutch-speaking children.

The different ideologies, reflected in different aims (targeting Dutch-speaking versus non-Dutch speaking children), as well as different ways of organization of bilingual input (*weak* versus *strong*), and different target audiences visiting the daycare centers (monolingual versus multilingual), make it difficult to qualify the entire initiative as being one of the four different forms of bilingual education, as laid out in Table 2.1. In general, the initiative as formulated by the Dutch government could be qualified as being prestigious in the sense that it targets a language majority audience and it involves two languages that have a high degree of cultural prestige (García & Wei, 2013; Sierens & Van Avermaet, 2014). However, some organizations instead seem to target a multilingual audience – one that in many cases already speaks English – and want to expose them to the national language instead. The prominent position of English in Dutch society (Edwards, 2016; Nortier, 2011) illustrates that the English language might – in some ways – have a higher cultural and educational prestige than the Dutch language: in the Netherlands, English is often used as a symbol of prestige, an identity marker and an expression of status (Edwards, 2016). Thus, organizations targeting an English-speaking audience and exposing them to a somewhat less prestigious state language make this a unique form of bilingual education that is not captured in the traditional categorization of bilingual education, as described in section 2.2.1.

In addition, the results show that the bilingual ECEC centers also attract a highly educated elite: data from the parental questionnaires show that 90% of the parents completed university. This results echoes concerns about bilingual

education being elitist (Sieben & van Ginderen, 2014; Sierens & Van Avermaet, 2014). Even though bilingual daycare is still in a pilot phase in the Netherlands, it is telling that daycare organizations have registered for this pilot study that primarily cater to a highly educated audience. This finding raises questions: did these organizations decide to implement a bilingual curriculum because of their highly educated audience? Or did the organizations attract this highly educated audience *after* implementing Dutch-English bilingual input? Whereas two organizations explicitly stated to have implemented bilingual input because of their (highly educated) international audience, for the other organizations this remains unclear. One way or the other, these findings resonate with the idea that prestigious bilingual education often involves educational elites (Sierens & Van Avermaet, 2014). However, it should be noted that the data were gathered in the context of a pilot study: in our data, a substantial part of the audience consists of highly educated, multilingual families. If the Dutch government decides to introduce bilingual ECEC on a larger scale, and allow other languages, the composition of the audience might very well change. After all, the number of highly skilled migrant workers is limited (383.000 workers out of 17 million inhabitants in 2018, Centraal Bureau voor de Statistiek, 2020, p. 9), and more Dutch-speaking families will ultimately have the opportunity to visit bilingual ECEC.

What do these results ultimately say about the status of the Dutch and English language in bilingual ECEC? On the one hand, the introduction of bilingual ECEC in the Netherlands is part of an ongoing “Englishization” (Earls, 2013) of the Dutch educational system (described in section 2.2.2): it is related to a societal as well as educational change that has been taking place for decades. In that sense, Dutch-English bilingual ECEC can be viewed as a product of the importance of English in Dutch society. This is also illustrated by the fact that, even though they were allowed to, none of the participating daycare centers choose to offer French or German in addition to Dutch.

On the other hand, our results from the parental questionnaires suggest that Dutch is important for many parents: 95% of parents indicated that they want their child to learn Dutch and 30% of the parents did not necessarily choose this daycare center for its bilingual nature. This may indicate that the English language does not necessarily pose a threat to the status of Dutch in bilingual daycares. In addition, the Dutch-English bilingual daycare centers open up more opportunities for multilingual (international) audiences to acquire the Dutch language. Sending their children to bilingual daycare centers where Dutch as well as English (often one of their home languages) is spoken, is an accessible way for their children to get acquainted with the Dutch language. Still, the introduction of Dutch-English curricula into Dutch ECEC could be viewed as another example of the increasing role of the English language in Dutch education, which leads some people to believe that the status and use of Dutch needs to be defended (for an overview, see Nortier, 2011). Future research should determine what larger scale introduction, that would create a fully bilingual English-Dutch educational track running from zero to eighteen, would mean for the status of the Dutch language in the Dutch ECEC system in the long run.

Chapter 3

Teacher-child interactions in bilingual early childhood education and care: Investigating the use of discourse strategies and teaching techniques

3.1 Introduction

In bilingual early childhood education and care (henceforth: ECEC), teachers are responsible for the creation of language learning opportunities. To establish this, they may sing songs, tell stories and carry out routines (Albaladejo Albaladejo et al., 2018; Björk-Willén, 2008; Elvin et al., 2007; Fleta Guillén, 2018; Lugossy, 2018; Pino Juste & Rodríguez López, 2020), but also through informal interaction they are able to create language learning contexts. These interactions also have an impact on a child's development of academic, social and cognitive skills (Langeloo, 2020). The aim of this chapter is therefore to investigate the strategies and techniques that teachers use to facilitate language learning in (informal) interactions in early L2 classrooms.

To do so, this study focuses on the properties of teacher-child interactions at Dutch-English ECEC centers in the Netherlands. To investigate the characteristics of these teacher-child interactions, this chapter will explore the different teaching techniques teachers employ in interactions to create language learning contexts, as well as the discourse strategies they use when children use

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different languages. Furthermore, since the link between teaching techniques and use of the target language has not yet been studied extensively, this study will also take into account children's responses to the strategies used and investigate how often these strategies co-occur with active use of the target language. In what follows, first a brief overview will be provided of previous work on discourse strategies and teaching techniques in teacher-child and parent-child interactions in multilingual settings.

3.2 Background

For bilingual children, differing interactive styles are likely to have an effect on the acquisition of the two languages (Döpke, 1992). Previous studies on interactions with young children in multilingual settings investigated various strategies that helped sustaining conversations with bilingual children. These studies were conducted in multilingual home settings on interactions between bilingual children and their parents (Döpke, 1992; Lanza, 2004) or in multilingual preschool and kindergarten classroom settings (Aarts et al., 2016; Albaladejo Albaladejo et al., 2018; Björk-Willén, 2008; De Houwer, 1995; Elvin et al., 2007; Lin, 2010, 2012; Lugossy, 2018; Park, 2014; Ping, 2014; Pino Juste & Rodríguez López, 2020; Ready & Wright, 2011; Sherris, 2011; Soltero-González, 2009; Tsybina et al., 2006; Vine, 2006). However, studies in multilingual classroom settings differed in how the settings were multilingual: sometimes they were conducted in preschool and kindergarten classrooms where the teacher was a speaker of the majority language, while children have different home languages and are bilingual speakers, therefore making it a multilingual classroom environment (Aarts et al., 2016; Park, 2014; Ping, 2014; Ready & Wright, 2011; Sherris, 2011; Soltero-González, 2009; Tsybina et al., 2006; Vine, 2006). Other studies took place at preschools and kindergartens that implemented a foreign language program, making it a multilingual classroom environment because of


the type of input that was being offered (Albaladejo Albaladejo et al., 2018; Björk-Willén, 2008; Elvin et al., 2007; Fleta Guillén, 2018; Lin, 2010, 2012; Lugossy, 2018; Pino Juste & Rodríguez López, 2020).

These studies on interactions in multilingual settings revealed different types of strategies that could be employed in conversations with children: (1) strategies managing children's language choice when they code-mix two languages, so-called *discourse strategies* (Lanza, 2004), and (2) teaching techniques that stimulate and sustain language use in the target language (Döpke, 1992). These different types of strategies will be discussed in the following subsections.

3.2.1 Discourse strategies

Strategies of language use play an important role in the early language socialization of bilingual children (Lanza, 2004). Whereas no quantitative studies have been carried out investigating the strategies teachers employ when a child uses a different language or code-mixes two languages in classroom settings, various qualitative studies have been conducted investigating this in multilingual home settings. Lanza (2004) was the first to do so and distinguishes five types of strategies that could be adopted by parents when a child mixes two languages, the so-called parental discourse strategies. Each of these discourse strategies are ways to manage a child's language choice, they convey a different message and thus might have different effects on bilingual children's code-mixing behavior. Lanza (2004) distinguishes parental discourse strategies as depicted in Table 3.1.

Table 3.1 Parental discourse strategies (Lanza, 2004, p. 262, 268)

| | | |
|---|-------------------------|--|
| MONOLINGUAL CONTEXT  BILINGUAL CONTEXT | <i>Minimal grasp</i> | Adult indicates no comprehension of the child's language choice |
| | <i>Expressed guess</i> | Adult asks a yes/no question using the other language |
| | <i>Adult repetition</i> | Adult repeats the content of the child's utterance, using the other language |
| | <i>Move on</i> | The conversation merely continues |
| | <i>Code-switching</i> | Adult code-switches to the other language |

Lanza (2004) notes that these discourse strategies are not always conscious decisions made by the speaker. For example, studies on code-switching have shown that adult bilinguals can sometimes be unaware of what language they are using when they are taking part in a conversation. Still, all the strategies can be placed on a continuum since they each have a potential of creating a context that is more or less monolingual or bilingual. For example, with the minimal grasp strategy, a parent indicates a need for clarification, creating a monolingual context where the use of only one particular language is allowed. With an expressed guess, a parent “subtly reveals his or her role as a bilingual through the translation of the child’s mix” (Lanza 2008, p. 57). This places the created context further along the continuum towards the bilingual side of it.

With the use of an adult repetition, the parents uses the other language to repeat and translate the child’s utterance. As opposed to the expressed guess strategy, the adult repetition does not take the form of a question, but rather that of a statement. This also reveals the parent’s role as a bilingual, but even more so

than the expressed guess strategy: in this case, the parent does not need the child's reassurance which places this strategy even further towards the bilingual end of the continuum.

By using the move on strategy, the parent continues the conversation without addressing the child's language choice. In doing so, the parent accepts the child's mixing behavior and implicitly indicates that (s)he understands the other language, creating a bilingual context. On the far bilingual end of the continuum, the parent switches to the other language by code-switching: this can be done by completely switching to the other language or by employing intra-sentential code-switching. Consequently, a fully bilingual context is created where use of another language is not merely accepted by the parent, but where the other language is also actively used by the parent.

Lanza's (2004) parental discourse strategies scheme has provided subsequent studies with a testable framework, the so-called Parental Discourse Hypothesis, stating that the more monolingual the parental strategy is, the lower the rates of the child's code-mixing (e.g. Juan-Garau & Pérez-Vidal, 2001; Mishina, 1999; Nicoladis & Genesee, 1998). Still, the effect of each parental strategy on children's code-mixing behavior remains undecided. Whereas qualitative studies found that parental discourse strategies indeed influence children's code-mixing behaviour (Juan-Garau & Pérez-Vidal, 2001; Mishina, 1999), quantitative studies did not find significant statistical evidence (Deuchar & Muntz, 2003; Mishina-Mori, 2011; Nicoladis & Genesee, 1998).

In their qualitative study, Juan-Garau and Pérez-Vidal (2001) found that the language choice patterns of a Catalan-English bilingual child were indeed linked to the response styles of his English-speaking father. After a visit to an English-speaking country, the father switched from mostly employing bilingual discourse strategies to monolingual discourse strategies, leading to a shift in the child's language choice. After switching to monolingual discourse strategies, the child adhered more to English. Similarly, in a qualitative study, Mishina (1999)

found evidence for the link between interactional strategies and children's language mixing by longitudinal observation of natural interaction between a two-year-old English-Japanese bilingual child and his parents.

To investigate the Parental Discourse Hypothesis quantitatively, Nicoladis and Genesee (1998) followed 5 different French-English bilingual families for six months and studied the effects of parental strategies on children's code-mixing (ages 1;9 to 2;0 at the start of the study). The results however did not provide support for the Parental Discourse Hypothesis. Children interacting with parents who used bilingual strategies more often, did not code-mix more than children interacting with parents that mostly resorted to monolingual strategies. In the discussion of their findings, Nicoladis and Genesee (1998) point out that results might have been influenced by the bilingual children's unbalanced proficiency in the two languages, as well as their age: some children's cognitive skills might have not yet been developed well enough to understand the link between the communication breakdowns and language choice.

Similar to Nicoladis and Genesee (1998) and Deuchar and Muntz (2003) examined the relationship between an English-Spanish bilingual child's (1;7 to 2;7 years) code-mixing and the parents' discourse strategies quantitatively. Also Deuchar and Muntz (2003) did not find significant correlations between the child's code-mixing behavior and the parental discourse strategies, and suggested that the child's cognitive development could account for her code-mixing patterns.

So far, no qualitative studies have been conducted looking at the specific strategies teachers use in multilingual classrooms in response to the child's use of a different language than the interlocutor, or when a child code-mixes two languages in early foreign language contexts. However, some studies did focus on the presence of other languages in interactions between teacher and child at multilingual preschools and kindergartens (Caporal-Ebersold & Young, 2016; Cornips, 2020; Lugossy, 2018; Soltero-González, 2009). These studies showed

that teachers varied in the degree to which they allowed use of home languages in their classrooms. Soltero-González (2009) found that teachers in their study did not encourage use of the home language in their classrooms, even though the preschool's language policy allowed home languages to be used. The minority language was not used to support the acquisition of the majority language and the majority language was used as the main language of instruction.

In Cornips (2020), teachers allowed the home language to be used and also used the home language themselves, but only in specific contexts. Children in a group were always addressed in the majority language, whereas individual children were addressed in the minority language if this was their home language. Teachers mainly used the majority language in contexts related to classroom organization and learning. The minority language on the other hand was used to provide emotional support. In studies by Caporal-Ebersold and Young (2016) and Lugossy (2018) at daycare centers using a one person, one language policy to implement foreign language learning, teachers also differ in how strictly they stick to this policy. Whereas some teachers decided to strictly follow the policy, others decided to switch languages if they believed that children's wellbeing was at risk.

3.2.2 Teaching techniques

In addition to discourse strategies, Döpke (1992) found that parents also employ different kinds of teaching-oriented utterances in interactions with bilingual children to create extended discourse and to support language development. From this, Döpke (1992) concluded that parents are also generally aware of their teaching function in conversations with their children. Parental utterances were considered teaching techniques if they (1) present the child with verbal models, (2) rehearse language information for the child, (3) make pattern structures transparent, or (4) elicit verbalizations from the child. From Döpke's (1992) analyses, different types of teaching techniques emerged: parents seemed to

employ vocabulary teaching techniques as well as grammar teaching techniques. The vocabulary and grammar teaching techniques could both be subdivided into different categories: modelling techniques, patterning techniques, rehearsing techniques and eliciting techniques. Table 3.2 (on the next page) presents an overview of the different teaching techniques distinguished.

Similar to parents, studies on teacher-child interactions found that teachers employ various strategies in interactions to create extended discourse and to support language development in multilingual classrooms in preschool and kindergarten (Björk-Willén, 2008; Fleta Guillén, 2018; Gardner, 2008; Lin, 2010, 2012; Lugossy, 2018; Park, 2014; Ping, 2014; Sherris, 2011; Soltero-González, 2009; Tsybina et al., 2006; Vine, 2006). Teachers appeared to be using a wide variety of scaffolding techniques such as questions, repetition, recasts, clarification requests, formulaic expressions, corrective feedback and metalinguistic feedback (Björk-Willén, 2008; Fleta Guillén, 2018; Lin, 2010, 2012; Lugossy, 2018). Teachers not only frequently asked yes/no questions, but also asked children to elaborate on their answers (Gardner, 2008; Sherris, 2011). Some preschool teachers also made use of wh-questions in attempts to engage multilingual children in interactions (Ping, 2014). In addition to wh/yes/no questions and asking for explanations, teachers in kindergarten have also been found to repeat responses to check for understanding (Sherris, 2011) and to make use of nonverbal communication, such as tones of voices, speed of speaking and visual components as body movements, gestures and facial expressions (Park, 2014; Soltero-González, 2009; Vine, 2006). Teachers also used implicit corrections to support grammar learning (Ping, 2014; Tsybina et al., 2006).

Table 3.2 Teaching techniques used in parent-child interactions (Döpke, 1992, p. 148–153)

| | | |
|---------------------------------------|-------------------|--|
| Vocabulary teaching techniques | <i>Modelling</i> | Provision of label, mapping, semantic correction, chaining, translation feature elaboration, functional elaboration, general paraphrase |
| | <i>Patterning</i> | Contrasting provision of label |
| | <i>Rehearsing</i> | Vocabulary perseveration, incorporation |
| | <i>Eliciting</i> | Request for label, choice question, request for insertion, contrasting polar questions, where-is questions, what-doing question, request for translation |
| Grammar teaching techniques | <i>Modelling</i> | Expansion, optional transformation, morpheme correction, complex extension, NP extension, PP extension, VP extension |
| | <i>Patterning</i> | Major substitution, frame variation, morpheme substitution |
| | <i>Rehearsing</i> | Morpheme perseveration, self-reduction, minor substitution |
| | <i>Eliciting</i> | Request for NP extension, request for PP extension, request for VP extension |

According to Fleta Guillén (2018), the teaching techniques used in pre-primary foreign language classrooms were mostly focused on meaning rather than form, and teachers were more likely to check language comprehension than to correct language production. In pre-primary foreign language classrooms, she also notes that positive feedback to promote language comprehension (such as questions, elicitation, metalinguistic feedback, expansion, cognates) played a more prominent role. Additionally, corrective feedback techniques that were used (such as explicit correction, clarification requests and recasts) had an informative function rather than a corrective function. In doing so, teachers created opportunities for language uptake and promoted communication.

The relationship between teaching techniques and children's language choice in responses to these teaching techniques has not been studied extensively. Fleta Guillén (2018) has found that in pre-primary L2 classrooms the majority (>83%) of children's contributions were in their L2 (English), but the children's contributions were not linked to the teaching techniques that were used by the teachers. In these classrooms located in Spain, English was taught as a second language by means of immersion. Additionally, it was found that the use of English became more habitual with children as they stayed in school longer: in the youngest age group, the amount of utterances in Spanish was the highest (12%). Similarly, Lugossy (2018) found that in early L2 preschool classrooms in Hungary, the older children (4-7 years) were more likely to respond in English than the younger ones (1-3 years): whereas older children were able to respond to yes/no questions, name animals and objects and would sing English songs to themselves, younger children more often ignored their teachers' English questions and requests or responded non-verbally or in their L1. These results show that the use of the L2 increases as children get older.

3.2.3 Current study

Previous studies on interactions in early foreign language learning classrooms showed that in multilingual classrooms, teachers differ in the degree to which they switch between languages and allow other languages to be used (Alstad & Tkachenko, 2018; Caporal-Ebersold & Young, 2016; Cornips, 2020; Lin, 2012; Lugossy, 2018; Soltero-González, 2009). However, no studies have investigated the strategies that teachers employ when a child uses a different language or code-mixes two languages in the classroom. Qualitative studies investigating the strategies parents use in multilingual home situations show that they resort to various discourse strategies, varying from monolingual to bilingual strategies (Lanza, 2004). So far, no studies have been carried out investigating these discourse strategies employed by teachers in multilingual classroom settings.

Additionally, studies showed that parents as well as teachers employ a wide variety of teaching techniques to support language learning in conversation (Björk-Willén, 2008; Döpke, 1992; Fleta Guillén, 2018; Gardner, 2008; Lin, 2010, 2012; Lugossy, 2018; Park, 2014; Sherris, 2011; Soltero-González, 2009; Tsybina et al., 2006; Vine, 2006). Even though studies show that teachers use various teaching techniques and therefore create a “potential facilitating context for preschool children’s learning of vocabulary and grammar” (Ping, 2014, p.157), so far the link between teaching techniques and use of the target language has not yet been studied extensively, leaving a lacuna in the body of knowledge regarding the effectivity of teaching techniques used in early foreign language classrooms.

In the present study, we aim to bridge these gaps by further investigating the discourse strategies and teaching techniques teachers employ in multilingual conversations in the context of Dutch-English bilingual ECEC centers in the Netherlands. To do so, we have recorded classroom observations and analyzed teacher-child interactions. In addition, we also looked at children’s responses to

these discourse strategies and teaching techniques. To investigate the use of discourse strategies, this study employed the *parental discourse strategies* framework by Lanza (2004). Even though this framework is based on parent-child interactions in home settings, we believe that this framework could also be applied to teacher-child interactions in classroom settings, since we believe that the various discourse strategies differentiated by Lanza (2004) are almost all-encompassing. Still, from now on, we will refer to Lanza's (2004) Parental Discourse Hypothesis as the Discourse Hypothesis, to avoid confusion. In this study, we address the following questions:

- (1) Which discourse strategies do teachers use when participating in teacher-child interactions?
- (2) How often does the use of discourse strategies co-occur with active use of the target language?
- (3) Which teaching techniques do teachers use when participating in teacher-child interactions?
- (4) How often does the use of teaching techniques co-occur with active use of the target language?

3.3 Method

3.3.1 Participants

3.3.1.1 Organizations and teachers

For this study, video and audio recordings were made at six different ECEC locations, henceforth daycare A, B, C, D, E and F. For the English observations, recordings were made at daycares A, B and C. Dutch observations were recorded

at daycares D, E and F. Teachers recorded in the English observations only tried to elicit the English language and teachers recorded in the Dutch observations the Dutch language. All daycares were part of a project initiated by the Dutch government in which 10 daycare organizations in the Netherlands were allowed to offer Dutch-English bilingual daycare to children between the ages of 0-4.

All daycares were comparable in terms of daily routines, but varied in terms of children's cultural and linguistic backgrounds. At all daycare organizations, days consisted of fruit and lunch breaks, circle times and free play. During the day, two teachers were present. At all daycares but one (daycare B), the one teacher-one language strategy was adopted: according to the daycare language policy, one teacher should speak English, whereas the other should only speak Dutch. At daycare B, they opted for a slightly different method: one teacher only spoke Dutch, while the other spoke Dutch and English.

At daycares A and D, multiple teachers were recorded. This was due to practical reasons: at some organizations, some teachers only worked part-time and sometimes teachers fell ill and were replaced by others on the day(s) of recording. Furthermore, teachers varied with respect to their language backgrounds. See Table 3.3 or an overview.

Table 3.3 Daycares and their teachers

| Daycare | Language of observation | Method | Teacher code | Mother tongue |
|----------------|--------------------------------|--|---------------------|----------------------|
| A | Dutch | One teacher- one language | DT1_A | Tamazight |
| A | Dutch | One teacher- one language | DT2_A | Tamazight |
| A | Dutch | One teacher- one language | DT3_A | Bahasa Indonesian |
| B | Dutch | One teacher- one language | DT4_B | Dutch |
| C | Dutch | One teacher- one language | DT5_C | Dutch |
| D | English | One teacher- one language | ET1_D | Dutch |
| D | English | One teacher- one language | ET2_D | Bahasa Indonesia |
| E | English | Teacher speaks Dutch and English | ET3_E | Dutch |
| F | English | One teacher- one language | ET4_F | Dutch |

Teacher codes were composed as follows: the first letter stands for language of observation: E for English, D for Dutch. The second letter stands for teacher and the last letter is the organization the teacher worked at. To illustrate: teacher DT5_C was the fifth teacher included in the Dutch observations, she worked at organization C.

3.3.1.2 Children

In total, 70 children participated in the observations: 35 children were recorded in the English teacher observations and 35 children were recorded in the Dutch teacher observations. An overview of these children can be found in Table 3.4. These children were part of a larger sample of children ($N = 751$) participating in an evaluation study on the effects of bilingual ECEC. In this pilot study, ten different organizations were allowed to offer Dutch-English bilingual input. For the purposes of this specific study, we selected six different daycare centers and groups that were mostly visited by children acquiring English as a second language (for the English observations) or Dutch as a second language (for the Dutch observations). Information about the children's exposure to Dutch and English at home was gathered using an online parental questionnaire. All children participated in this study using informed consent. Ethical approval for this study was obtained from the University of Amsterdam research ethics committee at the Faculty of Humanities.

Table 3.4 Children in English and Dutch observations

| Home language(s) | English observations (N=35) | Dutch observations (N=35) |
|-------------------------|--|--------------------------------------|
| Dutch | 19 (54%) | 11 (31%) |
| Dutch + other | 2 (6%) | 1 (3%) |
| Dutch + English | 1 (3%) | 1 (3%) |
| English | 4 (11%) | 3 (9%) |
| English + other | 2 (6%) | 11 (31%) |
| Other | 7 (20%) | 8 (23%) |

As shown in Table 3.4, the majority of children in the English (83%) observations acquired English as a second language (Dutch 54%, Dutch + other 6%, Dutch + English, 3%, other 20%). Similarly, in the Dutch observations the majority (63%) acquired Dutch as a second language (English 9%, English + other 31%, other 23%). It should be noted that this sample of children is not necessarily representative for the bilingual ECEC population, but was the result of our choice to focus on children acquiring the language of observation as a second language.

The mean age of the children in the English observations ($M = 2;9$, with ages ranging from 1;10 to 3;11) was comparable to the mean age of children in the Dutch observations ($M = 2;9$, with ages ranging from 2;1 to 3;11). The observations in both languages were also comparable in terms of gender distribution ($F=19$, $M=16$ for the English observations and $F=16$, $M=19$ for the Dutch observations).

3.3.2 Data collection

All participating daycare centers were visited for three mornings. On these mornings, video and audio recordings were made of the teacher(s) and the conversations they had with the children. The recordings were made as follows: the observer sat in a corner of the classroom with a camera to film the teacher and children, whilst the teacher wore a microphone to record audio. The observer did not communicate with the teacher nor the children. All daycare centers typically had the same schedule in the morning: first, children had some fruits or snacks, then there was circle time, some free play and book reading and then lunch break. For three mornings, the observer filmed the teacher as she went about her day and interacted with the children during these activities. Mornings typically lasted from 9 AM till 12 PM.

Because the daycare centers were each visited for three mornings, approximately 540 minutes of video- and audio recordings were made per daycare center in total. To ensure that all transcriptions and recordings were comparable, 150 minutes of recordings were then selected and transcribed for each of the daycare centers, resulting in 900 minutes of recorded and transcribed material. For all daycare centers, all selected recordings involved equal amounts of fruit/snack time (30 minutes), circle time (60 minutes), free play (30 minutes) and lunch break (30 minutes), to make sure that the selected recordings would be a good reflection of a typical morning. Recordings that did not make the selection were typically unusable recordings (e.g. recordings with too much noise so that the conversations would be incomprehensible) or recordings in which no interactions took place with the children. Next to the aforementioned activities, one semi-structured activity was included (30 minutes). Teachers were asked to read from the same picture book: *'Hier woon ik'* ('This is where I live') (Westendorp, 2015). This book contained virtually no text, which stimulated the teachers to be creative and have conversations with the children about the book's pictures.

3.3.3 Transcription and coding

After data collection, audio recordings were transcribed. In addition to the audio recordings, video recordings were used to determine the contexts in which the interactions took place, as well as to identify non-verbal utterances. All recordings were transcribed in the Computerized Language ANalysis program (henceforth: CLAN, see MacWhinney, 2000) using the Codes for the Human Analysis of Transcripts format (henceforth: CHAT). The CHAT transcription format is a standardized format for producing transcripts of face-to-face conversational interactions and can be used with learners of all types (including children, second language learners and aphasic patients). As CHAT does not define utterances, we

opted for T-unit analysis (Hunt, 1970) for the segmentation of utterances within each transcript. A T-unit is generally defined as a main clause plus any subordinate clauses that may be attached to it.

After transcription, all utterances were coded using CLAN. Children's utterances were only coded for language of the utterance. Teachers' utterances were coded for: (1) language of the utterance, (2) goal of the utterance (child-centered, control-centered or self-centered³), (3) direction of utterance (towards one child, a group of children, or someone else), (4) type of utterance (interactional strategy, song, routine⁴ or other), and if an utterance contained an interactional strategy, it was coded for (5) type of discourse strategy, and/or (6) type of teaching technique. To identify the discourse strategies used, we resorted to Lanza's (2004) parental discourse strategies framework. However, to avoid missing out on any other potential discourse strategies used by only limiting ourselves to the pre-defined discourse strategies by Lanza (2004), we conducted a bottom-up analysis to see if Lanza's (2004) pre-defined categories were all-encompassing. We found that the discourse strategies employed by the teachers in this study indeed largely overlapped with those categorized by Lanza (2004), those being: (i) asking for translation (ii) minimal grasp, (iii) expressed guess, (iv) adult repetition, (v) move on, (vi) codeswitching. In this study, the asking for translation category was added to Lanza's parental discourse strategies as a discourse strategy, since an analysis of the data showed that teachers in our sample sometimes resorted to this strategy. No other discourse strategies were

³ An utterance was coded as child-centered when the main goal of the utterance was to communicate with the child and a verbal response was expected or could logically follow. Control-centered meant that the main goal of the utterance was to control the child, and a teacher used directives and/or an action was expected. An utterance was coded as self-centered when a teacher reflected or commented on one's own actions and no reaction or action was expected from the child.

⁴ When an utterance was part of a routine, e.g. morning meetings, it was coded as a routine.

employed by the teachers. See Table 3.5 for an overview of all discourse strategies.

Table 3.5 Discourse strategies

| Strategy | Definition | Example |
|-------------------------------|---|---|
| <i>Asking for translation</i> | Asking the child to translate its utterance in the target language. | Child: Fiets. (<i>'Bicycle.'</i>) Teacher: And in English? |
| <i>Minimal grasp</i> | Feigning non-comprehension | Child: Boekje lezen. (<i>'Read book.'</i>) Teacher: Hmm? |
| <i>Expressed guess</i> | Incorporating a translation of the child's utterance into a yes/no-question | Child: Di(t) mijn mammië. (<i>'This my mommy.'</i>) Teacher: Is it your mommy? |
| <i>Adult repetition</i> | Repeating the child's utterance translated into the target language | Child: Trein! (<i>'Train!'</i>) Teacher: Train! |
| <i>Move on</i> | Not mentioning the inappropriate language choice and simply moving on with the conversation | Child: Kijk daar poes! (<i>'Look there kitty!'</i>) Teacher: But he's still sleeping a bit. |
| <i>Code-switching</i> | Switching to the language used by the child. | Teacher: Who likes grapes? Child: Ikke! (<i>'Me!'</i>) Teacher: Ja? |

Teaching techniques provide language information, elicit language from the child or reflect on language information. Because research has shown that teachers may use a wide variety of strategies (Björk-Willén, 2008; Fleta Guillén, 2018; Gardner, 2008; Lin, 2010, 2012; Lugossy, 2018; Park, 2014; Sherris, 2011; Soltero-González, 2009; Tsybina et al., 2006; Vine, 2006), we again opted for a bottom-up analysis of the data to identify and categorize teachers' teaching strategies. From our bottom-up analysis, fifteen categories of teaching strategies emerged. See Table 3.6 for an overview of all teaching strategies that emerged and were coded for.

Table 3.6 Teaching strategies

| Category | Strategy | Definition | Example |
|------------------|-----------------|---|--|
| <i>Eliciting</i> | Choice question | Asking a child a question in the target language with two answer options embedded in it (often contrasting options). | Teacher: Are you a girl or a boy? |
| | Prompting | Prompting a part of a sentence or a word in the target language to elicit a contribution in the target language by the child. | Teacher: It's an o-o(val). Child: Oval! |

Table 3.6 (*Continued*)

| Category | Strategy | Definition | Example |
|------------------|---------------------------|--|--|
| <i>Eliciting</i> | Wh-question | Asking a wh-question in the target language to elicit a contribution in the target language. | Teacher: What shape is this? Child: Circle. |
| | Yes/no question | Asking a question in the target language, expecting the child to answer either yes or no. | Teacher: (Is) this your nose? |
| | Definition or Elaboration | Giving a definition (i.e. 'An X is Y', 'X means that Y') or explaining features or characteristics of an object (i.e. An X is to Y). | Teacher: In the attic we store things. |
| <i>Modelling</i> | Labeling | Connecting an object to its name (sometimes including adjectives). | Teacher: This is a window. Teacher: That's a very bad spider. |
| | Modelling | Producing a word or a sentence in the target language, expecting the child to repeat it. | Teacher: Can you say: couch? |

Table 3.6 (*Continued*)

| Category | Strategy | Definition | Example |
|-----------------------------------|----------------------------|--|---|
| <i>Modelling</i> | Rephrasing | Repeating a word or structure in different words. | Teacher: And we need a little circle, a ball. |
| | Translation | Producing a word or a sentence in the non-target language and then translating it into the target language. | Child: Vélo. Teacher: Vélo. Teacher: And in English? Teacher: Bicycle. |
| | Visual cues | Helping children comprehend a word or a structure in the target language by using visual cues, such as gestures or images. | Teacher: The clown juggles like this [= juggling]. |
| <i>Rehearsing</i> | Repeating | Repeating a word or structure uttered in the target language by a child or by the teacher herself. | Child: Banana! Teacher: Banana. |
| <i>Metalinguistic information</i> | Metalinguistic information | Reflecting on languages or linguistic phenomena. | Teacher: That's how you say it in English. |

3.3.4 Data analysis

To count the teaching techniques and discourse strategies, CLAN was used (MacWhinney, 2000) using the freq command. To gain further information on the context in which the techniques and discourse strategies were employed and to determine how children responded to the utterances, we ran the kwal command. We used a window of five utterances following the strategy, to also capture responses that were not immediately given straight after the utterance containing the strategy. This window proved to be large enough to capture all responses to the strategies. To investigate how often the use of particular discourse strategies and teaching techniques co-occurred with active use of the target language, we relied on the mere counting of teaching techniques and discourse strategies. No inferential statistical tests (e.g. correlations) were conducted because of the relatively low number of responses to the discourse strategies.

To visualize children's responses to the teaching techniques and discourse strategies, we used the GridWare software (Lamey et al., 2004). GridWare is a data visualization tool usually used for multivariate time series of sequential (ordinal or categorical) data. However, it has also proved to be a useful tool in visualizing categorical data collected in foreign language classroom interactions (Smit, de Bot & van de Grift, 2016). GridWare allowed us to visualize in what language children responded to the various teaching and discourse strategies, by also taking their home languages into account.

3.4 Results

3.4.1 Composition of language input

Before we focus on the types of discourse strategies and teaching techniques that were used, we will first discuss what type of utterances the language input in both languages consisted of. Figure 3.1 depicts the composition of the Dutch input and Figure 3.2 depicts the composition of the English input. In both figures, the distribution of strategies is portrayed for all teachers separately. The bars with diagonal stripes represent the composition of the input when taking all teachers together.

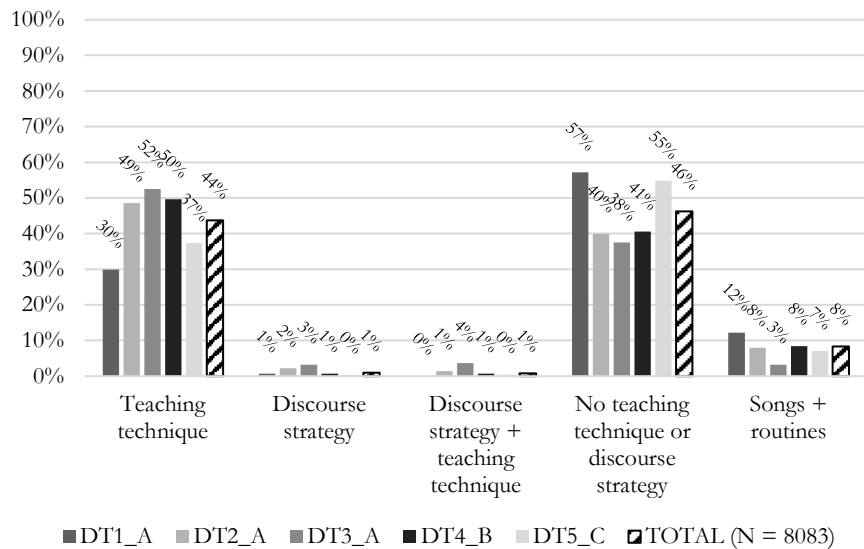


Figure 3.1 Composition of Dutch input

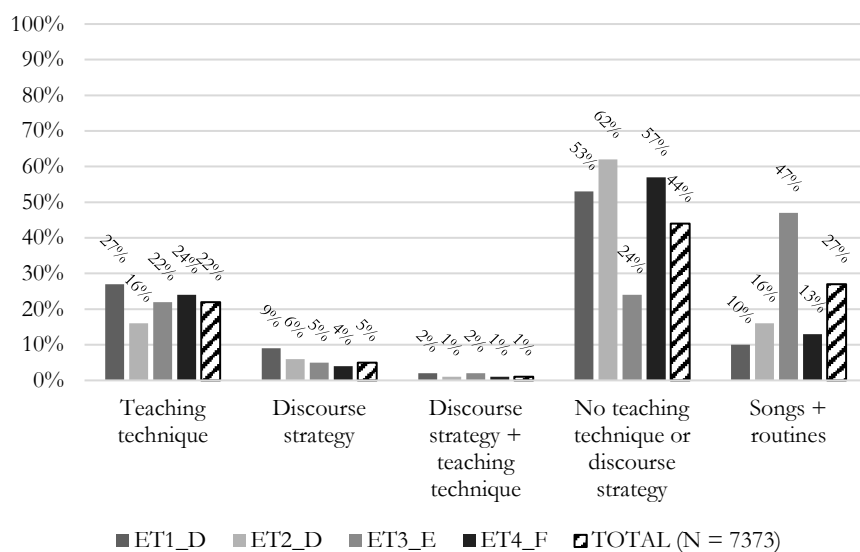


Figure 3.2 Composition of English input

In total, for Dutch 8083 utterances were transcribed and coded and for English 7373. Results show that many utterances in both languages contained no teaching technique or discourse strategy (46% for Dutch, 44% for English). Also, Dutch-speaking teachers used more teaching techniques for teaching Dutch (45% in total: 44% of utterances contained a teaching technique only, 1% both a discourse strategy and teaching technique) than English-using teachers for teaching English (23%). Furthermore, teaching techniques were more frequent than discourse strategies in both languages. Discourse strategies were employed more often by English-using teachers (6%) than Dutch-using teachers (2%). This indicates that in English conversations, children used other languages than English more frequently since in this study, every response by a teacher to an utterance by a child produced in a non-target language was coded as a discourse strategy (e.g. if a teacher did not acknowledge the use of a non-target language, it was coded as use of the *move on* strategy). This means that a higher number of

discourse strategies are a result of a higher number of utterances produced by children in a non-target language.

Lastly, approximately a quarter of the utterances in the English observations (27%) consisted of songs or routines. In Dutch observations, the use of songs and routines was less frequent (8%). However, it should be noted that in the English observations it was mostly teacher ET3_E who produced a lot of utterances that were part of songs and routines: 47% of her utterances consisted of this type of input.

3.4.2 Discourse strategies

One aim of this study was to unravel how teachers react when a child speaks in another language than the target language and to see what kinds of discourse strategies they employ. Figure 3.3 depicts discourse strategies used by Dutch-speaking teachers and Figure 3.4 those used by English-speaking teachers. In both figures, discourse strategies are presented for each teacher separately, as well as for all teachers together (bars with diagonal stripes). In total, 144 discourse strategies were used in the Dutch observations, as opposed to 501 in the English observations. Even though discourse strategies – and thus, use of another language than the target language by children – were more frequent in the English observations, results show that in both languages discourse strategies used were distributed similarly across the different types of strategies.

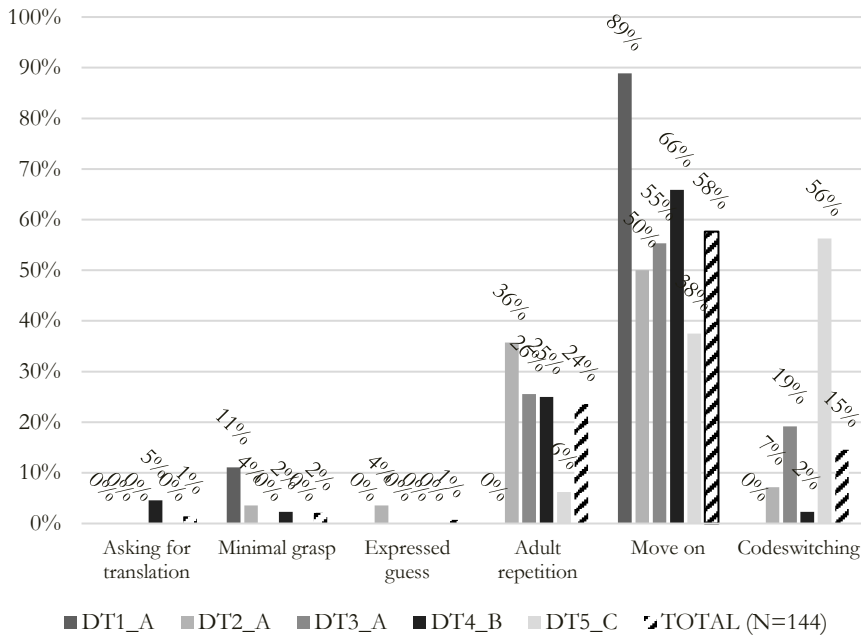


Figure 3.3 Discourse strategies used by Dutch-speaking teachers

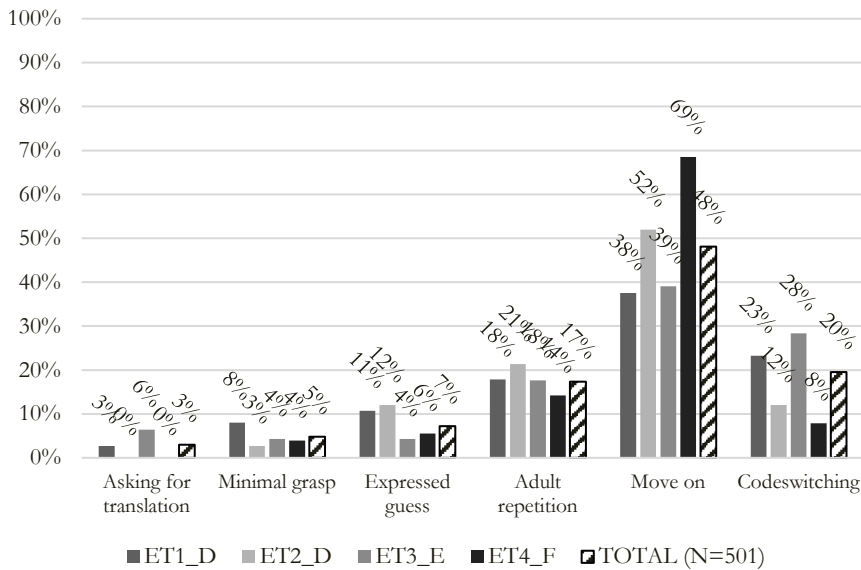


Figure 3.4 Discourse strategies used by English-speaking teachers

In both Dutch and English observations, teachers more often used discourse strategies that are placed on the bilingual end of the spectrum. Strategies on the monolingual end of the spectrum, such as asking for translation (1% in Dutch, 3% in English) and minimal grasp (2% in Dutch, 5% in English), were only used rarely. Adult repetition, placed in the middle of the spectrum, was used regularly in both the Dutch (24%) and English (17%) conversations. The move on strategy was used most frequently in both languages (58% in Dutch conversations, 48% in English conversations), creating bilingual contexts where the use of another language is permitted. Sometimes, teachers also codeswitched (15% in Dutch observations, 20% in English observations), not only allowing other languages to be used, but also actively using them. However, the degree to which teachers codeswitched differed. For example, in the Dutch observations, teacher DT1_A did not codeswitch at all (0%), whereas teacher DT5_C codeswitched in 56% of the cases when a child used a non-target language.

3.4.3 Teaching techniques

To find out what types of teaching techniques teachers employ in teacher-child interactions, teaching techniques were analyzed in the five broad categories (eliciting, modelling, feedback, rehearsing and metalinguistic information). See Figure 3.5 for teaching techniques used by Dutch-speaking teachers and Figure 3.6 for those used by English-speaking teachers. Also in these figures, the distribution of techniques is presented for each teacher separately, as well as for all teachers combined (the diagonally striped bars).

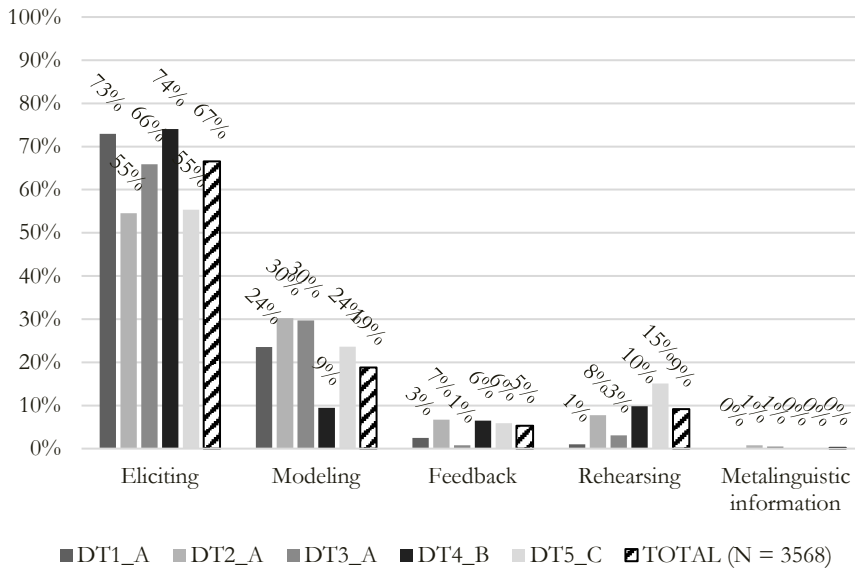


Figure 3.5 Categories of teaching techniques used by Dutch-speaking teachers

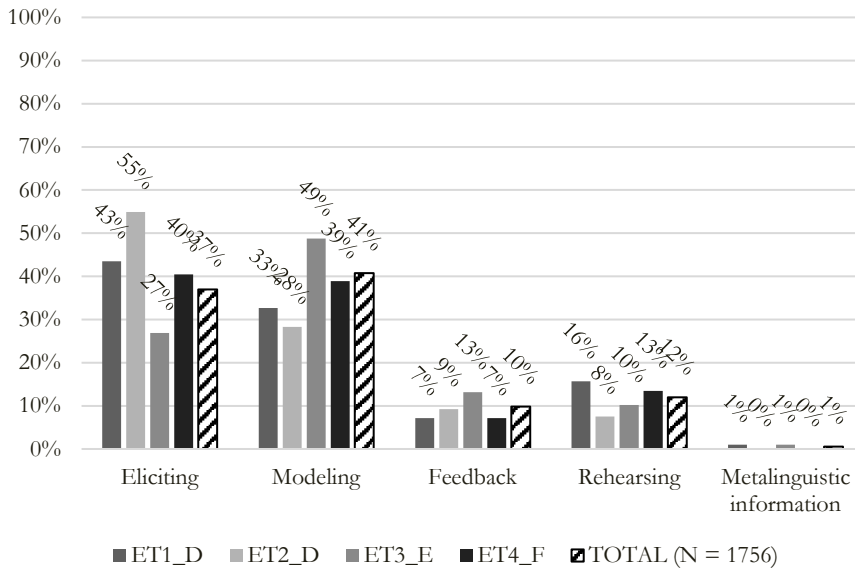


Figure 3.6 Categories of teaching techniques used by English-speaking teachers

Results show that in both the Dutch and the English observations, eliciting and modelling strategies were the most frequently used strategies. However, Dutch-using teachers most frequently employed eliciting strategies (67%), whereas English-using teachers most often made use of modelling strategies (41%). In both the Dutch and English observations, feedback and rehearsing strategies were also used, but not as often as the eliciting and modelling strategies. Feedback (10%) and rehearsing (12%) strategies occurred more frequently in the English input than in the Dutch input (5% feedback, 9% rehearsing). Metalinguistic information was only very rarely provided (0% in Dutch, 1% in English observations).

3.4.4 Children's responses

To investigate how often the use of particular discourse strategies and teaching techniques co-occurred with active use of the target language, we analyzed which languages children used in response to strategies: (1) Dutch, (2), a mixed utterance (Dutch-English), (3) English, or (4) other languages.

3.4.4.1 *Discourse strategies*

Figure 3.7 illustrates the distribution of responses to the discourse strategies used by the Dutch-using teachers, Figure 3.8 shows the responses to discourse strategies used by English-using teachers. Each dot on the grid represents one response. Blue dots represent responses by children with Dutch as their home language, orange dots represent responses by children with English as their home language, green dots represent responses by children with both Dutch and English as their home languages and red dots represent responses by children with any other home language than Dutch or English. Non-verbal responses, as

well as responses that were non-language specific or unintelligible were not plotted, since these were rare.

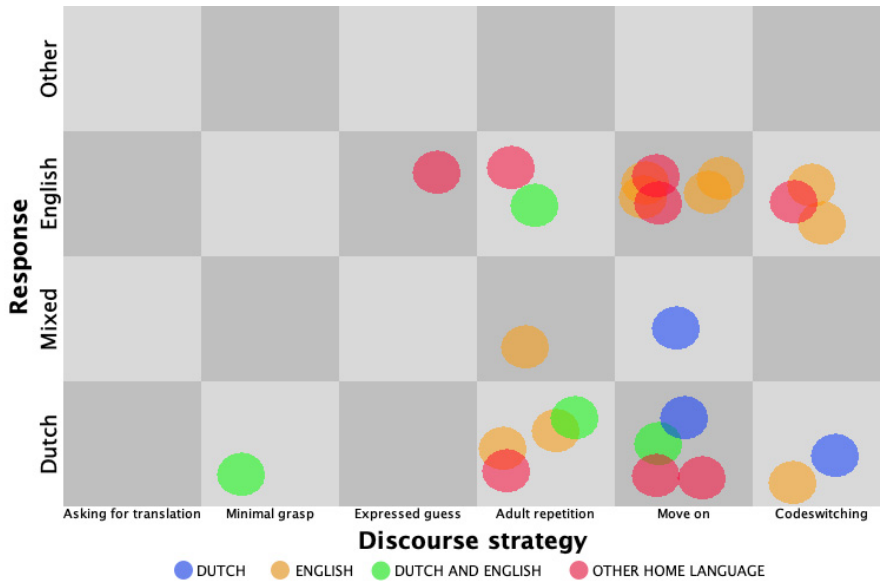


Figure 3.7 Responses to discourse strategies in Dutch observations (N=25)

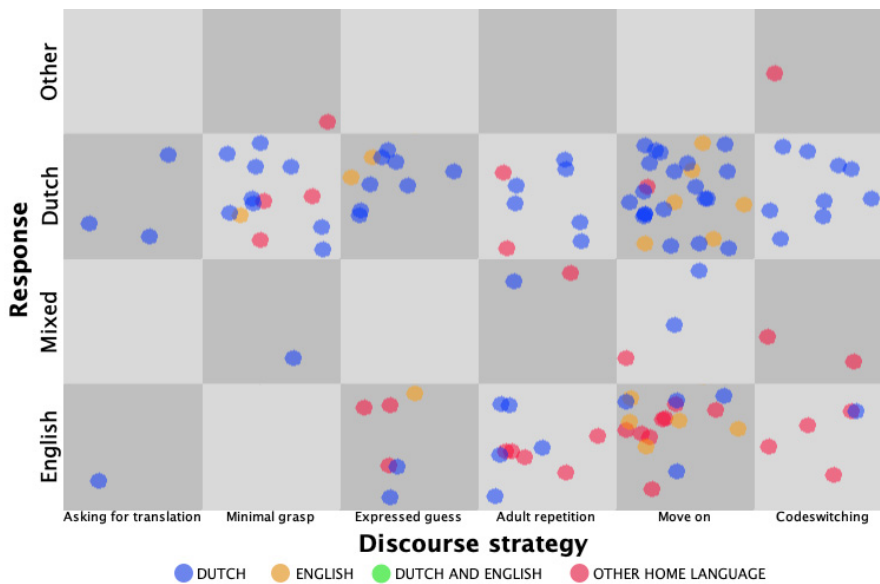


Figure 3.8 Responses to discourse strategies in English observations (N=129)

It often happened that a child did not respond to a discourse management strategy targeted at him or her. In those cases, other children often interrupted the conversation and interacted with the teacher instead. This explains why the number of discourse management strategies included in these analyses is substantially lower (25 for Dutch, 129 for English) than previously mentioned (144 for Dutch, 501 for English).

According to the Discourse Hypothesis, monolingual discourse strategies would more likely be responded to in the target language and it was expected that responses to bilingual strategies would be placed more towards the top, in the non-target language/other region, since children might not feel the need to adjust their language choice. Both grids visualize that strategies placed on the bilingual side of the spectrum were much more frequent than strategies on the monolingual end of the spectrum in both languages. Furthermore, Figure 3.8 shows that in the English observations, the majority of responses to monolingual discourse strategies were responses in Dutch and not in English. These responses were mostly from Dutch-speaking children (blue dots). These results thus conflict with the Discourse Hypothesis, that predicted monolingual discourse strategies to lead to more responses in the target language. However, for Dutch observations, there was only one response to a monolingual discourse strategy (minimal grasp) that was included, that response was in Dutch.

Also, both Figure 3.7 and Figure 3.8 show that a substantial part of the responses to the bilingual discourse strategies consisted of responses in the target language. This means that, after talking in the non-target language and receiving a bilingual discourse strategy, children still decided to switch to the target language. These responses in the target language were not only given by children who grew up with the target language at home, but also by children who had other home languages. In some cases, this even happened after the teacher decided to move on (4 times in Dutch observations, 17 in English observations) or had switched to the child's language (2 times in Dutch observations, 5 times

in English observations). This conflicts with the Discourse Hypothesis, that predicts that children might not feel the need to adapt their language choice in response to bilingual discourse strategies.

3.4.4.2 Teaching techniques

To analyze responses to the teaching techniques, similar grids were created. For these grids, only responses are presented to strategies that require a response, i.e., eliciting strategies and modelling strategies. On the grids in Figure 3.9 and 3.10, again blue dots represent responses by children with Dutch as their home language, orange dots represent responses by children with English as their home language, green dots represent responses by children with both Dutch and English as their home languages and red dots represent responses by children with any other home language than Dutch or English. Non-verbal responses, as well as responses that were non-language specific or unintelligible were excluded from the grids. Apart from these types of responses, all other responses were included in the grids, meaning that regardless to whom the teaching technique was directed (group, other child), a response to the teaching technique (albeit by another child) counted as a response.

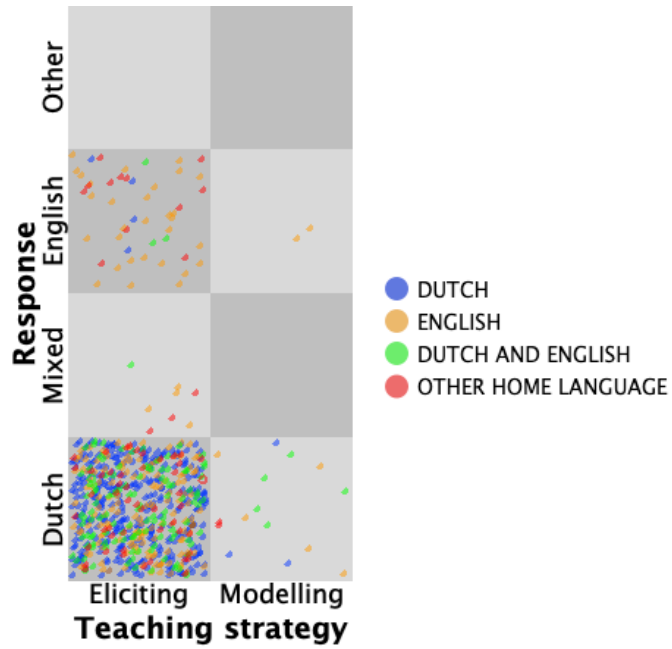


Figure 3.9 Responses to teaching techniques in Dutch observations (N=862)

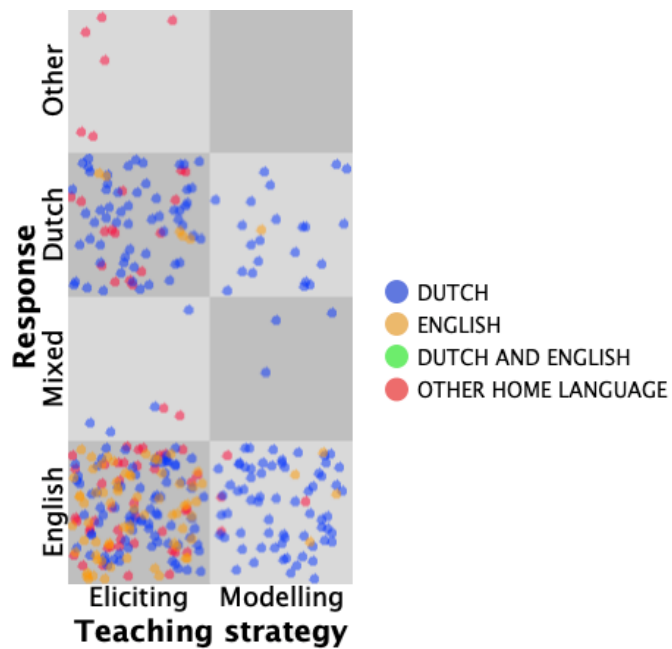


Figure 3.10 Responses to teaching techniques in English observations (N=443)

The grids in Figure 3.9 and Figure 3.10 show that (responses to) teaching techniques in Dutch observations (N=862) were more frequent than in English observations (N=443). Additionally, the grids show that the modelling strategy is more frequently used in English interactions than in Dutch interactions. In response to the eliciting strategies in both languages, the majority of responses consisted of responses in the target-language (57% in English observations, 77% in Dutch observations). Responses in the target-language were not only given by children that heard the target-language at home: in the Dutch observations, approximately 30% of Dutch responses to the eliciting strategies were given by children who did not hear Dutch at home, represented by the orange and red dots. In response to the eliciting strategies in the English observations, approximately 65% of English responses were given by children whose parents did not speak any English at home, represented by the blue and red dots.

The same goes for the responses to the modelling strategy used in both languages: in response to the modelling strategy in the Dutch observations, approximately 47% of responses in Dutch were given by children who did not acquire Dutch as a first language, represented by the orange and red dots. In the English observations, approximately 95% of English responses to the modelling strategy were given by children whose parents did not speak any English at home, represented by the blue and red dots. These findings suggest that eliciting and modelling strategies do co-occur with active use of the target language by L2 learners.

3.5 Discussion

The goal of this study was to examine how teachers at ECEC centers create language learning opportunities in conversations by investigating discourse strategies and teaching techniques that were employed in teacher-child interactions. Previous studies on interactions with young children in multilingual

home settings showed that parents use a variety of discourse strategies and teaching techniques to sustain conversations with multilingual children (e.g. Döpke, 1992; Lanza, 2004). Results of this study show that similar to parents, teachers in this study also used discourse strategies to manage children's language choice, as well as a wide variety of teaching techniques to support language learning in multilingual classroom settings. Results showed that English-speaking teachers used more discourse strategies than Dutch-speaking teachers. The higher number of discourse strategies used by English-speaking teachers are due to the fact that in the English observations, more children produced utterances in a non-target language, resulting in a higher number of discourse strategies employed by English-speaking teachers than Dutch-speaking teachers. This could be because more children in English observations acquired English as a second language (83%) than children in Dutch observations (63%) who acquired Dutch as a second language. Also, since Dutch is the majority language in the Netherlands, it could very well be that children were already more used to communicating Dutch even though they did not acquire this as a home language, resulting in less use of non-target languages in conversations with Dutch-speaking teachers.

According to Lanza (2004), all discourse strategies have a potential of creating a context that is more or less monolingual or bilingual. With regards to these discourse strategies, in both Dutch and English observations, the use of discourse strategies placed on the bilingual end of the continuum was more frequent than the use of monolingual discourse strategies: the *move on* strategy was used most frequently in both languages, creating bilingual contexts where the use of another language is permitted. Furthermore, teachers sometimes even codeswitched to the non-target language used by the child, consequently not only allowing other languages to be used but also actively using them themselves. It should be noted that one Dutch-speaking teacher in this study did not codeswitch (teacher DT1_A). This teacher only produced 9 discourse strategies

in total (1 *minimal grasp*, 8 *move on*). This shows that teachers in this study differed in how strictly they adhered to the one person, one language policy. This is in line with findings by Caporal-Ebersold and Young (2016) and Lugossy (2018) who also found that not all teachers decided to strictly follow the policy but decided to switch languages if a situation asked for it, e.g. if they believed that the children's wellbeing was at risk.

Furthermore, results showed that Dutch-speaking teachers made more use of teaching techniques than English-speaking teachers and the types of teaching techniques that were employed in the two languages were different: whereas English-speaking teachers made more use of modelling strategies, Dutch-speaking teachers used more eliciting strategies. Additionally, English-speaking teachers produced more utterances that were part of songs and routines than Dutch-speaking teachers. However, it should be noted that one teacher in particular (teacher ET3_E) used a lot of songs and routines, approximately 47% of her utterances consisted of utterances in this category. This teacher was also the only teacher included in this study working at an organization where not a one teacher-one language principle was implemented: this teacher also spoke Dutch in some situations. However in this study, only English interactions were included.

Still, this finding indicates that the type of input in English that is being offered at bilingual ECEC in the Netherlands is slightly different than the Dutch input. Previous studies have shown that songs and routines are used regularly in early L2 classrooms (Albaladejo Albaladejo et al., 2018; Elvin et al., 2007; Fleta Guillén, 2018; Lugossy, 2018). Recurring activities with fixed forms and content have proven to be useful in developing competence in the L2 and foster language learning due to its predictability (Björk-Willén, 2008; Fleta Guillén, 2018; Lugossy, 2018). From this, it seems as if the English input that is being offered can be considered more as L2 input: while Dutch input mostly takes shape in conversation, English input is sometimes offered more through songs and

routines such as lunch rituals and morning greetings. This is also reflected in the difference in teaching techniques employed by teachers: whereas the Dutch-speaking teachers rely more on eliciting techniques, English-speaking teachers rely more on modelling techniques. Modelling techniques can also be considered more as being part of 'L2' input: these techniques present children with verbal models, making the language itself the central object of the conversation. Eliciting strategies on the other hand already presume more knowledge of the language in which the conversation is taking place, by assuming a child understands what is asked of them and requiring a direct verbal reaction.

Children's responses to discourse strategies showed that use of bilingual discourse strategies did not necessarily co-occur with responses in a non-target language. Instead, children sometimes still decided to switch to the target language after receiving a bilingual discourse strategy such as the *move on* strategy or after a teacher had decided to codeswitch to the language used by the child. These findings conflict with the Discourse Hypothesis that states that children might not feel the urge to adapt their language choice in response to bilingual discourse strategies (Lanza, 2004). One reason for this conflicting finding could be that the Discourse Hypothesis is not applicable to classroom contexts: children might not feel the urge to switch languages in interaction with teachers as much as they would feel the urge to do so in conversations with their parents after the use of a monolingual discourse strategy. However, other quantitative studies on the Discourse Hypothesis in parent-child interactions also failed to find evidence in support of the hypothesis (Deuchar & Muntz, 2003; Mishina-Mori, 2011; Nicoladis & Genesee, 1998).

Still, it should also be noted that in these classroom observations it regularly happened that children did not respond to a discourse strategy targeted at them. Often times other children intervened in the conversation, leading to a relatively low number of responses included in these analyses (129 for English in total, 25 for Dutch in total). To further investigate discourse strategies employed

by teachers in bilingual preschool classrooms and responses to these strategies, future research should include more classroom observations where fewer children are present at once. This way, there is less chance that one-on-one conversations are interrupted by other children, resulting in a higher number of responses to discourse strategies.

Teaching techniques have also shown to be useful in eliciting responses in the target language in both Dutch and English observations. The majority of responses to eliciting and modelling strategies in both Dutch and English observations consisted of responses in the target language, also by children that did not grow up with the target language at home. These findings suggest that eliciting and modelling strategies often co-occur with active use of the target language by L2 learners in this age group and are therefore useful tools in the early foreign language classroom.

However, our results should be interpreted with caution. The relatively low number of responses to the discourse strategies (especially when also taking into account the children's different language backgrounds) did not allow for the use of inferential statistical methods (e.g. correlations). Because of this, we were unable to statistically put the Discourse Hypothesis to the test. Similarly, we based our findings regarding the links between the use of eliciting and modelling strategies and children's language choice on the mere counting of co-occurrences. Therefore, we can only state that eliciting and modelling strategies often co-occur with active use of the target language, not that the use of eliciting or modelling strategies will ultimately *lead* to active use of the target language. We believe that future quantitative research on the relationships between the use of discourse strategies or teaching techniques and children's language choice in teacher-child interactions should investigate these links more thoroughly with larger sample sizes using inferential statistics.

It is also worth bearing in mind that even though recordings for all daycare centers were comparable and involved equal amounts of fruit/snack

time, circle time, free play, lunch breaks and book reading, results of this study could also be influenced by teacher characteristics. Whereas some teachers were more outgoing and had many conversations with children, others were more introverted and mostly focused on classroom organization: this is also reflected in the variation in the amount of utterances that contained no teaching technique (38%-57% in Dutch observations, 24%-62% in English observations). Teachers mostly focusing on classroom organization usually produced more control-centered utterances, where the main goal was to control the child by using directives. These utterances typically did not contain a teaching technique. In addition, language proficiency might have also played a role in our findings: since the language of observation (English) was usually not the mother tongue for the English-speaking teachers, this might have influenced the teaching techniques they used. This could also be an explanation for the frequent use of songs and routines by English-speaking teacher ET3_E. Because she was not as proficient in English as she was in Dutch, she might have felt the need to rely more on songs and routines that require less proficiency in English as the use teaching techniques would.

Additionally, for our analyses we partly relied on predefined frameworks such as Lanza's (2004) parental discourse strategies. In doing so, we have limited the scope of this study to the use of and reactions to these strategies and teaching techniques only. However, we are fully aware that this teacher-child interaction data could also be analyzed in terms of other approaches to bilingual interaction, such as conversational turn-taking or an in-depth analysis of children's codeswitching. Similarly, our study was purely an observational study, meaning that we did not conduct interviews with the teachers to gain further insight into the speakers' motivations for their language choices. Future research could also include interviews with teachers in addition to the classroom observations, to further decipher the motivations that underlie the use of certain discourse strategies and teaching techniques.

All in all, results of this study have revealed that teachers are able to create many different language learning opportunities in conversation by employing a wide variety of teaching techniques and discourse strategies in multilingual classroom settings, regardless of language of observation. Additionally, Lanza's (2004) *parental discourse strategies* framework has shown to be a fruitful framework to analyze discourse strategies employed by teachers in multilingual teacher-child interactions. This study however, failed to find support for the Discourse Hypothesis, stating that the use of monolingual discourse strategies often co-occurs with use of the target language. Lastly, by studying the link between teaching techniques and use of the target language by children in more detail, this study has provided evidence that teaching techniques such as eliciting and modelling are effective tools in eliciting responses in the target language by L2 children in early foreign language classrooms.

Chapter 4

Crosslinguistic influence and the Dutch plural: Investigating the effects of language dominance, overlap and variability

4.1 Introduction

When two languages meet, they can be affected by each other's presence. This has been established in language contact studies (e.g. Muysken, 2013), but also in bilingual acquisition studies. Previous studies on crosslinguistic influence have shown that the extent to which one language can influence the other can vary from child to child (Mykhaylyk & Ytterstad, 2017), and that the direction of the crosslinguistic influence can also differ. Crosslinguistic influence can take place unidirectionally (Argyri & Sorace, 2007) or bidirectionally (van Dijk et al., 2021).

These mixed results fit well into the so-called scenario approach: in his study on language contact, Muysken (2013, p. 710) stated that languages interact in different ways depending on various factors related to the social setting of the contact (Thomason & Kaufman, 1988; Van Coetsem, 1988). This means that whether crosslinguistic influence happens (and in what direction) is always dependent on the circumstances under which the contact occurs. Muysken (2013) therefore formulated various factors that could possibly have an impact on the occurrence and direction of crosslinguistic influence, such as prestige and

This chapter is a slightly modified version of a submitted article: Keydeniers, D., Aalberse, S., Andringa, S., & Kuiken, F. (submitted). *Crosslinguistic influence and the Dutch plural: Investigating the effects of language dominance, overlap and variability*.

status of the two languages involved, contact factors (number of speakers and type of network), and similarity between languages.

This study aims to further identify circumstances in which languages might or might not affect each other, by bringing together insights from the two research traditions that both have been concerned with the interplay between languages, namely language contact studies and bilingual acquisition studies. To do so, we will investigate crosslinguistic influence in relation to different factors often researched in both branches of research, namely language dominance, variability and overlap. More specifically, we will examine the role of language dominance, variability and overlap in one particular scenario: the acquisition of plural marking in children who attend Dutch-English bilingual early childhood education and care (henceforth: ECEC). The acquisition of the Dutch plural could be argued to be influenced by the presence of English in a child's input, due to partial overlap in plural marking between Dutch and English and variability in plural marking of Dutch. The setting of bilingual Dutch-English daycare centers makes for an interesting one, since it is a situation of prolonged shared bilingualism in a young age group, that involves two highly prestigious languages. According to Muysken's (2013) scenario approach, these are social factors that could facilitate crosslinguistic influence.

By acknowledging the social setting in which this study takes place while investigating the role of these factors in crosslinguistic influence, we are bringing together insights from studies on language contact and bilingual acquisition studies. In doing so, we hope to shed more light on the question as to when signs of crosslinguistic influence can be spotted (or not). In the remainder, we will discuss the role of language dominance, variability and overlap in crosslinguistic influence as these are crucial to our study.

4.2 Background

4.2.1 Language dominance

In bilingual children, one language is often more dominant than the other. Grosjean (1982) notes that there are hardly any bilingual children that do not have one dominant language: “balanced bilinguals, those who are equally fluent in both languages are probably the exception and not the norm” (p. 235). What makes one language the dominant language has been defined and measured in different ways. Whereas some studies have defined the dominant language as being the language a child is most proficient in (Unsworth et al., 2018), others use amount of language exposure to assess children’s language dominance (Argyri & Sorace, 2007), as both are related to each other.

Regardless of being defined as the most proficient language or as the language with the greatest exposure, bilingual acquisition studies have found that language dominance can sometimes also determine the presence, strength and direction of crosslinguistic influence, and can therefore play a prominent role (van Dijk et al., 2021). For example, previous studies have found that the weaker the language, the stronger the effect of crosslinguistic influence (e.g. Foroodi-Nejad & Paradis, 2009; Kidd et al., 2015; Nicoladis, 2006) and various studies have found that crosslinguistic influence is likely to occur from children’s most dominant language to their non-dominant language (e.g. Argyri & Sorace, 2007; Döpke, 1998; Nicoladis, 1999; Paradis, 2001; Yip & Matthews, 2000, 2007). Still, the exact relationship between language dominance and occurrence of crosslinguistic influence and whether it can serve as an explanatory factor for the presence (or absence) of crosslinguistic influence remains undecided as other studies failed to find support for language dominance effects (e.g. Foroodi-Nejad

& Paradis, 2009; Hulk & Müller, 2000; Müller, 1998; Müller & Hulk, 2001; Nicoladis, 1999, 2002).

4.2.2 Variability and overlap

In studies on bilingual (heritage) acquisition and language contact, it is believed that areas of language in which there is *variability* (alternation between structures) in a language or similarity or *overlap* between the two languages, are particularly vulnerable to crosslinguistic influence. For example, variability lies at the heart of the so-called Vulnerability Hypothesis, posed by de Prada-Pérez (2019). This hypothesis states that variable phenomena are more vulnerable to crosslinguistic influence than categorial phenomena since variability is particularly difficult for bilingual speakers to acquire. Variable phenomena are language structures where a particular meaning can be expressed by different forms (e.g. Dutch pluralization which can be formed by either adding *-s* or *-en* to the word stem), while categorial phenomena only have one form to express a particular meaning (e.g. English pluralization which can only be formed by adding *-s* to the word stem).

According to de Prada-Pérez (2019), language structures can be placed on a continuum ranging from categorial to variable. On the categorial end of the spectrum, phenomena are placed that only have one form. On the variable end of the spectrum, phenomena are placed that have two forms that are both as frequently used. Language structures that have two options, with one option being more frequent than the other, fall somewhere in between on this spectrum, making these structures not entirely variable, nor categorial. According to the Vulnerability Hypothesis, distributions on the variable end of the continuum will be more likely to be subjected to crosslinguistic influence than distributions on the categorial end of the continuum. The rationale is that if a linguistic structure has no rival, it is more firmly ingrained in the speaker's repertoire, as opposed to when a linguistic structure is variable.

Evidence for the Vulnerability Hypothesis was found, for example, in studies concerned with subject position in Spanish by bilingual speakers. Studies found that bilingual speakers had more difficulty with a variable phenomenon (such as the use of postverbal subject in narrow focus), than with a categorial phenomenon (such as the use of unaccusative subjects). This has been observed for English-Spanish heritage speakers (De Prada Pérez & Pascual y Cabo, 2012; Montrul, 2003) as well as English L1 Spanish second language learners (Domínguez & Arche, 2008; Hertel, 2003).

Partial overlap between languages plays an important role in the Functional Convergence Hypothesis (Sánchez, 2004). The hypothesis predicts that bilingual speakers map grammatical features from one language onto the morphological units of another if the two languages share similar features in a grammatical category. For example, studies by Sánchez (Sánchez, 2004, 2006) investigated the acquisition of the Spanish tense system in 38 Quechua-Spanish bilingual children. These bilingual children (aged 10-16 years) lived in the southern areas of Peru and spoke Quechua at home and only had access to Spanish in school, making them Quechua-dominant bilingual speakers. Results showed that the Quechua-Spanish bilingual children mapped Quechua evidentiality features on the Spanish tense system because in Quechua, past tense features are linked to evidentiality whereas in Spanish past tense features are linked to aspectual features.

Variability and overlap between two languages both play a role in the Alternation Hypothesis proposed by Jansen, Lalleman and Muysken (1980) in the field of L2 acquisition. This hypothesis states that “when the target language offers an alternation between two patterns [...] a second language learner will tend to overgeneralize the pattern existing in his or her first language” (p. 315). This means that second language learners will likely adopt a strategy where they will select an alternative in the target language that matches the alternative in their L1 (Heine, 2008; Muysken, 2013). Jansen, Lalleman and Muysken (1980)

investigated the Alternation Hypothesis in eight speakers of Turkish and eight speakers of Moroccan Arabic acquiring Dutch as a second language (aged 21-48 years). They all learned Dutch untutored as adults, and they varied in how long they had lived in the Netherlands, ranging from one to fifteen years. Two of the Turkish and three of the Moroccan speakers were married to native Dutch speakers. Results showed that in the early stages of the process of acquisition of Dutch word order (verb final in main clauses, verb second in dependent clauses) speakers indeed relied on language structures present in their first language (verb final position only in Turkish and verb second position only in Moroccan Arabic), thus supporting the Alternation Hypothesis. Evidence for the Alternation Hypothesis has also been found in the field of adult heritage bilingualism (Boumans, 2006; Moro, 2014; Moro & Klammer, 2015; Silva-Corvalán, 1994).

Silva-Corvalán (2008) stated that also in the case of heritage bilingualism “it seems logical to expect that frequently used patterns in the socially dominant language will motivate an increase in the frequency of use of parallel structures in the subordinate language” (p.215), leading to convergence of the two languages in contact. Still, variability in a language and partial overlap between two languages do not always lead to convergence: Kupisch (2014) found that instead of selecting the structure that exists in both languages, bilingual adults sometimes tend to overuse a structure that was unique to one of the two languages – so-called “crosslinguistic overcorrection” (p. 223). This shows that the outcome (divergence or convergence) of crosslinguistic influence can sometimes differ depending on the circumstances under which the language contact occurs, as argued by Muysken (2013).

4.2.2.1 Pluralization in Dutch and English

In this study, we will focus on the acquisition of the Dutch plural since there is

variability in how the Dutch plural can be formed. Additionally, it partially overlaps with English pluralization, thus offering an interesting viewpoint to investigate crosslinguistic influence. Standard pluralization in Dutch can be formed by adding either the *-en* or the *-s* affix to the stem,⁵ whereas in English plurals can only be formed by adding the *-s* affix. See (1):

- (1) a. *één stoel, twee stoel-en*
 one chair, two chair-PL
 ‘one chair, two chairs’
- b. *één tafel, twee tafel-s*
 one table, two table-PL
 ‘one table, two tables’

Even though the precise numbers are unknown, it is stated that the vast majority of Dutch plurals take *-en* (Haeseryn et al., 2019). The distribution of nouns among the two categories (*-s* pluralization and *-en* pluralization, respectively) is determined by two phonological factors: stress and sonority (Van Haeringen, 1947). The *stress* factor, or otherwise called the *rhythmic factor* entails that nouns should end in a trochaic stress pattern (van Wijk, 2007). A noun with a stressed final syllable therefore usually makes *-en* more probable, since this adds an unstressed syllable at the end of the noun (e.g. *kanón* ‘canon’, *kanonnen* ‘canons’). Consequently, a noun ending with an unstressed syllable usually makes *-s* more probable (e.g. *táfel* ‘table’, *tafels*, ‘tables’).

The second phonological factor is the *sonority* factor, which states that final clusters should have falling sonority (van Wijk, 2007). The sonority factor

⁵ Additionally, there are a limited number of nouns with special forms of pluralization: some nouns take *-eren* (*kind, kinderen*) as their plural affix (double plural), and Latin loanwords follow the Latin pluralization rules (*museum, musea*, for an overview, see Haeseryn et al., 1997). Since the nouns that take this affix are few and are considered to be exceptions, this subsection will not discuss these nouns in further detail.

thus imposes a requirement on the final cluster of a phonological noun. This sonority factor is largely dependent on the so-called sonority hierarchy (Clements, 1990; Foley, 1972; Kiparsky, 1979; Selkirk, 1984; Zwicky, 1972, as cited in van Wijk, 2007). The strongest preferences for *-s* and *-en* are found at the end of the sonority hierarchy: nouns ending in a vowel take plural *-s* almost without exception, while nouns ending in a final obstruent mostly take *-en*. The two phonological factors can conspire to make *-en* or *-s* highly likely, but they can also make conflicting predictions (e.g. the noun *trui* ‘sweater’, in which the stress factor would predict *-en* and the sonority factor would predict *-s*). In these conflict cases, it differs which factor wins, leading to many grey areas in Dutch pluralization that might be susceptible to crosslinguistic influence, as they create highly variable contexts (de Prada Pérez, 2019).

4.2.3 Current study

To further deepen our understanding of the circumstances under which crosslinguistic influence occurs, this study focuses on the acquisition of the Dutch plural by two- and three-year old children who attend bilingual Dutch-English daycare. This is a unique setting to explore crosslinguistic influence, since it is a situation of prolonged shared bilingualism in a young age group, where two highly prestigious languages are involved. According to Muysken’s (2013) scenario approach, these are social factors that could facilitate crosslinguistic influence.

Within this unique context, we decided to explore the roles of variability, overlap and language dominance more thoroughly as these are all factors that have been linked to the occurrence of crosslinguistic influence in studies on bilingual language acquisition and language contact. In exploring these factors, this study brings together two research traditions that have been concerned with the interplay between languages. This study aims to answer the following research

question: can signs of crosslinguistic influence be spotted in this situation, and if so, could these be directly linked to variability, partial overlap and language dominance?

First, because of the partial overlap in Dutch and English pluralization, overgeneralizations of the *-s* affix in Dutch pluralization to plurals where the *-en* affix was required, were taken as a sign of crosslinguistic influence since it could be expected that early sequential and simultaneous bilingual Dutch-English children have a stronger preference for the *-s* than the *-en* affix (Boumans, 2006; Jansen et al., 1980; Moro, 2014; Moro & Klamer, 2015; Sánchez, 2004; C. Silva-Corvalán, 1994; Carmen Silva-Corvalán, 2008). Second, following the Vulnerability Hypothesis (de Prada Pérez, 2019) we expected that conditions where rhyme and sonorancy predict a different affix pose more variability between the *-en* and *-s* affix, and are thus more vulnerable and more likely to be subjected to crosslinguistic influence than conditions where they predict the same affix. Third, as a result of this variability, we expected a larger amount of *-s* overgeneralizations in these variable contexts than in contexts where rhyme and sonorancy predicted the same affix. To investigate this, items used in this study were manipulated in terms of rhyme and sonorancy, in order to create contexts in which crosslinguistic influence might be more or less likely due to differing variability.

Fourth, the study was set out to investigate the role of language dominance. We expected that, if language dominance indeed plays a role in crosslinguistic influence, it could be predicted that children who are more frequently exposed to English are more likely to make *-s* overgeneralizations (because of the partial overlap between Dutch and English pluralization) than children who are less frequently exposed to English. Children included in this study therefore varied in their language dominance, since they all differed in terms of home language situations, as well as the amount of days they visited the bilingual daycare centers.

4.3 Method

4.3.1 Participants

An elicited production task was administered to 162 children aged between 2;6 and 4;0 that grew up with only Dutch and/or English at home and attended bilingual (Dutch-English) early childhood education and care. However, the task turned out to be too linguistically demanding for children in this age group, resulting in a select group of 95 children (51 females, 44 males, mean age = 3;6 years) that was able to participate in the task.⁶ Out of these 95 children, 59 children grew up only hearing Dutch at home, 30 children heard both Dutch and English at home and six children grew up only hearing English at home.

All children were recruited via various daycare organizations who participated in a project aimed at the evaluation of early English language teaching in Dutch daycares. A total of ten daycare organizations were allowed to offer a maximum of half of their opening hours in English instead of Dutch. Consequently, all children participating in this study were either simultaneous or early sequential bilingual Dutch-English and English-Dutch children. In addition, some children were early foreign language learners of English as they grew up hearing only Dutch at home and only attended bilingual daycare for one day a week. Parents or caregivers gave informed consent prior to their children's participation in this study. None of the children had auditory or other language-related problems. Ethical approval for this study was obtained from the

⁶ Eight months later, 42 (22 females, 20 males, mean age = 3;8 years) out of the 95 children participated in a follow-up measurement in which they completed the same task. However, since less than half of the children that participated in the first round also participated in the second, it was impossible to run statistical models on the data including the second measurement round due to low statistical power. Therefore, results from this follow-up measurement are not reported in this study (but see the Appendix for a discussion of these data).

University of Amsterdam research ethics committee at the Faculty of Humanities.

4.3.2 Elicited production task

4.3.2.1 Task composition

An elicited production task was used to elicit plurals. The experiment contained two main conditions: one condition in which rhyme and sonorancy predict the same affix, and one condition in which rhyme and sonorancy predict different affixes. It should be noted that in Dutch, when rhyme and sonorancy predict different affixes, sometimes both affixes are correct (e.g. *aardappel-s*, *aardappel-en* ('potatoes')). However, in this task we only included items where one affix was correct as we were interested in overgeneralizations of the affixes. If both affixes are correct, no overgeneralizations can occur.

Within these two main conditions, eight plurals were elicited in which the plural form ends with *-en* and eight ending with *-s*, leading to 16 plural items in total. Additionally, since a substantial amount of Dutch words are English cognates (such as *bed* and *lamp*) and cognates have been found to prime code-switches in bilingual adult speakers (Kootstra et al., 2012), it could be argued that cognates could also possibly prime *-s* pluralization in Dutch. Consequently, half of the plural forms ending with *-en* and *-s* were cognates, the other half non-cognates. Table 4.1 offers an overview of the plural items elicited in the task.

Table 4.1 Overview of the plural test items

| | Non-cognates | | Cognates | |
|----------------------------------|----------------------|-------------------------|-------------------|------------------------|
| | <i>-en</i> | <i>-s</i> | <i>-en</i> | <i>-s</i> |
| Rhyme and sonorancy | Hond (‘dog’) | Auto (‘car’) | Bed (‘bed’) | Baby (‘baby’) |
| predict the same affix | Fiets (‘bicycle’) | Beker (‘cup’) | Lamp (‘lamp’) | Lolly (‘lollipop’) |
| Rhyme and sonorancy | Stoel (‘chair’) | Cadeau (‘present’) | Bal (‘ball’) | Robot (‘robot’) |
| predict different affixes | Trui (‘sweater’) | Paraplu (‘umbrella’) | Wiel (‘wheel’) | T-shirt (‘t-shirt’) |

Additionally, 16 prepositions were elicited, serving as filler items. All items were taken from the *Duizend-en-een-woordenlijst* (Bacchini et al., 2005), a wordlist listing the first 1001 words typically learned by preschoolers acquiring Dutch as a second language. Furthermore, we carried out a spontaneous speech analysis to check whether all words included in the test items were produced in spontaneous speech by Dutch children in this particular age range. This was done by using CHILDES and four Dutch language corpora consisting of speech from children under the age of 4: the Bol and Kuiken corpus (Bol & Kuiken, 1990), the Groningen corpus (Bol, 1996), the Schaerlaekens corpus (Schaerlaekens, 1973) and the Wijnen corpus (Wijnen, 1990). In total, of 337 transcripts were analyzed. This analysis showed that all words included in the test items were produced in spontaneous speech by two- and three-year-old Dutch children.

4.3.2.2 Procedure

In the elicited production task, participants were presented with a dollhouse, its doll occupants and some of its furnishings. The experimenter told the participants that they had brought more furnishings and objects that had to be placed inside the house by the participants, and that she would hand them the objects one by one.

Then, the experimenter introduced a hand puppet called *Sammy the Shy Turtle*: Sammy also wanted to play with the dollhouse, but was very shy and therefore would retract his head inside his shell. Still, Sammy was very curious about the dollhouse, so the participants were then asked to explain to Sammy what objects they placed inside the house in addition to the location of those specific objects, eliciting plurals and the prepositions *op* ('on' on horizontal surface), *aan* ('on' on vertical surface), *om* ('on' in cases of encirclement), and *in* ('in') in the process. The prepositions served as filler items. See the Appendix for the full list of stimuli, including the filler items. The purpose of Sammy's presence was twofold: first, it acted as a way of comfort to participants who were hesitant and shy. Second, since it was visible to the children that Sammy was unable to see what was happening, his presence created a naturalistic environment in which plurals were elicited.

In the beginning of the experiment, two practice trials were administered, in which one plural (*borden* 'plates') and one preposition (*onder* 'under') were elicited.⁷ During the practice trials, the experimenter showed the

⁷ This practice item could have primed *-en* responses. However, straight after this practice item, a preposition was elicited. The item after that was administered after that was the item *bonden* ('dogs'), to which 41% of the responses were correct and 18% of responses consisted of the singular form *bond* 'dog'. This percentage correct is even lower than the percentage of correct responses to the item *ballen* 'balls' (64%) that also elicited *-en* later on in the task.

children that they had to verbally describe the objects and their specific locations. After this practice phase, the test items were presented.

For the plural items, the experimenter would introduce and name two objects: e.g.: *Kijk eens wat ik heb meegenomen, een bed! Maar ik heb niet één bed meegenomen, ik heb nog een bed.* ('Look what I brought, a bed! But I didn't just bring one bed, I brought another bed.') Then, the experimenter would offer a sentence frame for the child to describe the objects: *Ik heb hier dus niet één bed, maar twee...?* ('So I didn't just bring one bed, but two...?'). The participants were then prompted to complete the sentence. After the participant completed the sentence, the experimenter would hand over the objects to the participant, after which the participant was allowed to find a suitable place for the objects inside the dollhouse.

When a child was unable to complete the sentence, the experimenter would repeat the sentence frame again, in addition to asking the child to describe the objects to Sammy: *Sammy wil ook heel graag weten wat dit zijn! Kun je dat zeggen? Ik heb hier dus niet één bed, maar twee...?* ('Sammy is also really curious to know what these are! Can you explain that to him? I didn't just bring one bed, but two...?') If a child failed to complete the sentence, each item was presented three times in total. Then, the experimenter would hand over the objects to the participant, and allowed the participant to place them inside the house. The task was terminated if a participant failed to give a response to three consecutive items.

4.3.2.3 Scoring

Responses were coded into six different categories: (1) a response was coded as 'correct' when a participant correctly produced a plural with the target affix, (2) a response was coded as 'overgeneralization' when a participant incorrectly produced a plural ending with *-s* if an *-en* affix was required (e.g. *beds* instead of *bedden*) or the other way around (e.g. *bekeren* instead of *bekers*), (3) a response was

coded as ‘singular’ when a participant produced the singular form of the target word (e.g. *bed* instead of *bedden*), (4) a response was coded as ‘diminutive’ if a child produced a plural using the diminutive form of a word (e.g. *bedjes* instead of *bedden*), (5) a response was coded as ‘no answer’ when a participant gave no answer after administering the item three times, and all other responses were scored as (6) ‘other’.

4.3.3 Measuring language exposure

Parents were asked to fill out an online parental questionnaire, to gain more insight into the children’s language background and language input at home. The parental questionnaires were created using the Easion Survey software version 3.107 (Parantion, 2017) and were sent by e-mail. On the basis of this parental questionnaire, a Dutch and English exposure measure was created. In this exposure measure, the amount of Dutch or English that was spoken to the child at home was included, as well as the amount of Dutch or English at daycare.

This was calculated as follows: in the questionnaire, parents indicated with whom the child was during the mornings, afternoons and evenings for each day of the week. This gave us a total number of parts of the day per week a child would spend with each caregiver and at daycare. Also, parents indicated which languages were spoken to the child by these different people, in percentages. On the basis of this information, an English and a Dutch exposure measure was calculated.

For example: one child spends time with his mother and father and grandmother every week. For each of these caregivers, parents indicated how many parts of the days per week a child would spend with this person and how much English (or Dutch) this person would speak. An English exposure at home measure was then calculated as follows: (% English spoken by mother * total number of parts of the day spent with mother) + (% English spoken by father *

total number of parts of the day spent with father) + (% English spoken by grandmother * total number of parts of the day spent with grandmother). E.g.: $(70*8) + (40*7) + (90*2) = 1020$. A similar measure was created for English exposure at daycare. This was calculated by % of English spoken at daycare * total number of parts of the day spent at daycare, e.g.: $10*50 = 500$. Then, to create one combined English exposure measure that captures both exposure at home and at daycare, these two values were added up and divided by 100, to provide us with a total number of time units per week a child was exposed to English $(1020 + 500)/100 = 15.20$ (with a maximum of 21 time units per week). Similarly, Dutch exposure measures were calculated. To avoid issues with statistical convergence in the analyses, the exposure measures were then mean centered.

4.3.4 Data analysis

All analyses were carried out in R (R Core Team, 2019), using the lme4 package (Bates et al., 2015). To determine whether variability (in terms of rhyme and sonorancy) and exposure to English had any effects on preferences for either the *-en* or the *-s* affix, one generalized model with mixed effects was carried out. Following Van Wijk (2007), overgeneralization of an affix was taken as an indication of preference for that affix. Therefore, to investigate children's preference for a certain affix, the model took overgeneralization (1 for overgeneralization, 0 for a correct answer) as a dependent variable. All other types of answers (singulars, diminutives, no answers, and answers coded as 'other') were not included in these models, since these categories do not indicate a preference for a certain affix. Target (*-en* vs. *-s*), condition (rhyme and sonorancy predict same affix vs. rhyme and sonorancy predict different affix) and amount of English exposure were included as predictor variables. In addition, the model included all interactions between these predictors. Orthogonal sum-to-zero

contrast coding was applied to the binary predictor variables (i.e. target and condition) and the continuous predictor English exposure was mean centered. We aimed to keep the model as fully specified as possible by including random intercepts for participants and items (Barr et al., 2013). In order to do so and to solve issues with non-converging models, we used the ‘bobyqa’ optimizer to refit this model, by using the afex package (Singmann et al., 2021). This enabled us to report on the maximal random effect structure supported by the data (Jaeger, 2009). The statistical significance of the predictors was assessed using 95% Wald confidence intervals (Agresti & Coull, 1998).

4.4 Results

This study investigated whether signs of crosslinguistic influence were present in the acquisition of the Dutch plural in the form of overgeneralizations in Dutch-English toddlers, and if so, if these were linked to variability in the Dutch language (with regards to rhyme and sonorancy) and amount of English exposure. First, the different response types will be examined in the following subsection.

4.4.1 Response types

Figure 4.1 depicts response types given to items targeting *-en* and *-s*. For each participant, we calculated the proportion of (1) correct answers, (2) overgeneralizations, (3) answers containing a singular form of the noun, (4) answers containing a diminutive form of the noun, (5) other answers, and (6) no answers to items targeting *-en* and *-s*. We investigated the expectation children in our study might be inclined to overgeneralize *-s*. However, Figure 4.1 shows that children overgeneralized *-en* more often. On average, overgeneralizations were

more frequently made in items targeting *-s* (13%) than in items targeting *-en* (4%). This indicates that children showed a stronger preference for the *-en* affix instead of the *-s* affix. Also on average, a substantial number of responses to both items targeting *-en* (20%) and *-s* (26%) consisted of singular forms.

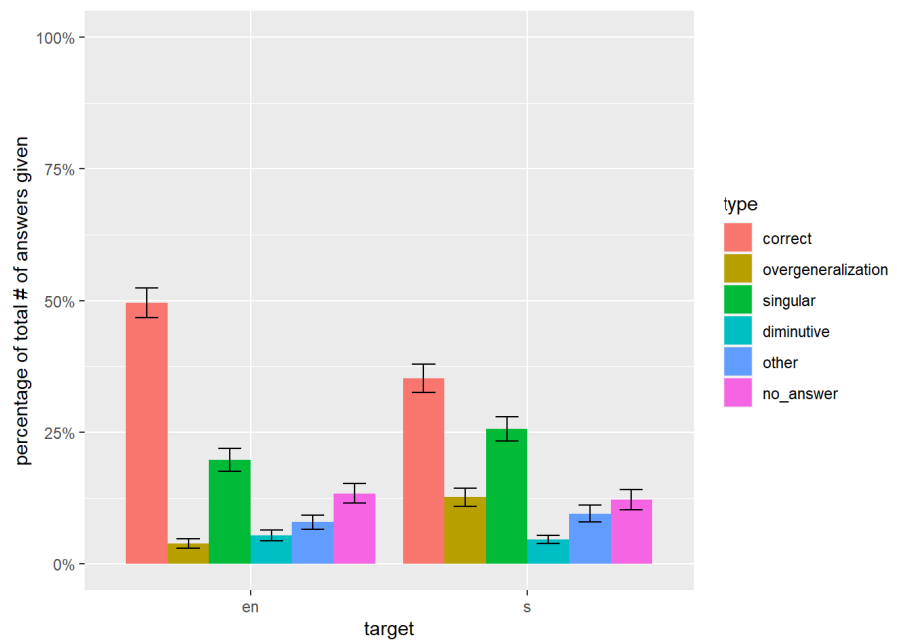


Figure 4.1 Responses to items targeting *-en* and *-s*

Since Figure 4.1 aggregates over all participants, it does not give any insight into individual's preferences for a certain affix. Therefore, we also investigated how many children overgeneralized and if so, if they overgeneralized both affixes or just one. Table 4.2 shows the types of overgeneralizations children made, and how many children made those types of overgeneralizations.

Table 4.2 Types of overgeneralizations

| Type of overgeneralization | Total # of children | Dutch only | English only | Dutch and English |
|------------------------------|---------------------|------------|--------------|-------------------|
| <i>-en only</i> | 44 | 34 | 0 | 10 |
| <i>-s only</i> | 12 | 3 | 4 | 5 |
| <i>both affixes</i> | 2 | 1 | 0 | 1 |
| <i>no overgeneralization</i> | 37 | 21 | 3 | 13 |

A high number of children only overgeneralized the *-en* affix (44/95), and relatively few only overgeneralized the *-s* affix (12/95). Only two children overgeneralized both affixes, showing that many children did have a strong preference for one affix. It should be noted that out of the 12 children that only overgeneralized *-s*, eight children were exposed to the English language at home (four out of eight were exposed to both Dutch and English at home). Meanwhile, 34 out of 44 children that only overgeneralized the *-en* affix were only exposed to the Dutch language at home (ten out of 44 to both Dutch and English).

We further investigated whether the amount of *-en* and *-s* overgeneralizations could be linked to variability and the amount of English children were exposed to. This will be discussed in the following subsections.

4.4.2 Overgeneralizations and rhyme and sonorancy

For variability in terms of rhyme and sonorancy, we investigated the hypothesis that overgeneralizations would be more likely to occur in situations where rhyme would suggest the *-en* affix and sonorancy the *-s* affix, or vice versa. Again, for each participant, we calculated the proportion of (1) correct answers, (2) overgeneralizations, (3) answers containing a singular form of the noun, (4)

answers containing a diminutive form of the noun, (5) other answers, and (6) no answers to items where rhyme and sonorancy predicted the same or different affix. Figure 4.2 depicts responses to items targeting the *-en* affix, whereas Figure 4.3 depicts responses to items targeting *-s*. In both figures, we compared conditions where rhyme and sonorancy work together to predict the same affix, and when rhyme and sonorancy contradict each other.

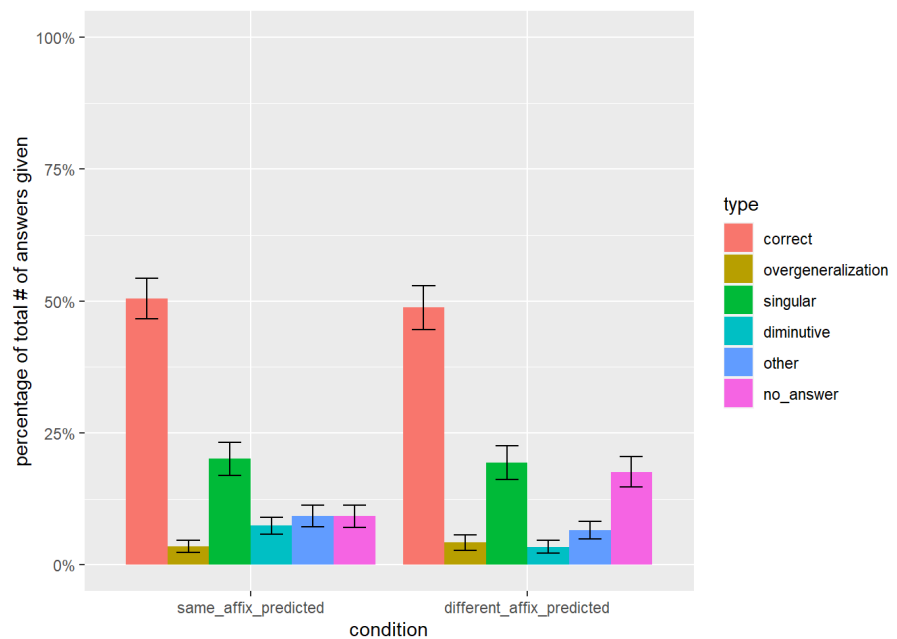


Figure 4.2 Responses to *-en* items, comparing the same versus different condition

Responses to items requiring the *-en* affix are comparable when rhyme and sonorancy predict the same affix and when they predict a different affix: in both conditions, on average, children answered correctly in approximately 50% of the cases. Also, a substantial amount of responses contained a singular form of the noun (20% in both conditions). Only 4% (when rhyme and sonorancy predict the same affix) and 4% (when rhyme and sonorancy predict a different affix) of

the responses were overgeneralizations of the *-s* affix. Participants were more inclined to not give any answer when rhyme and sonorancy predicted a different affix (18%) than when they predicted the same affix (9%).

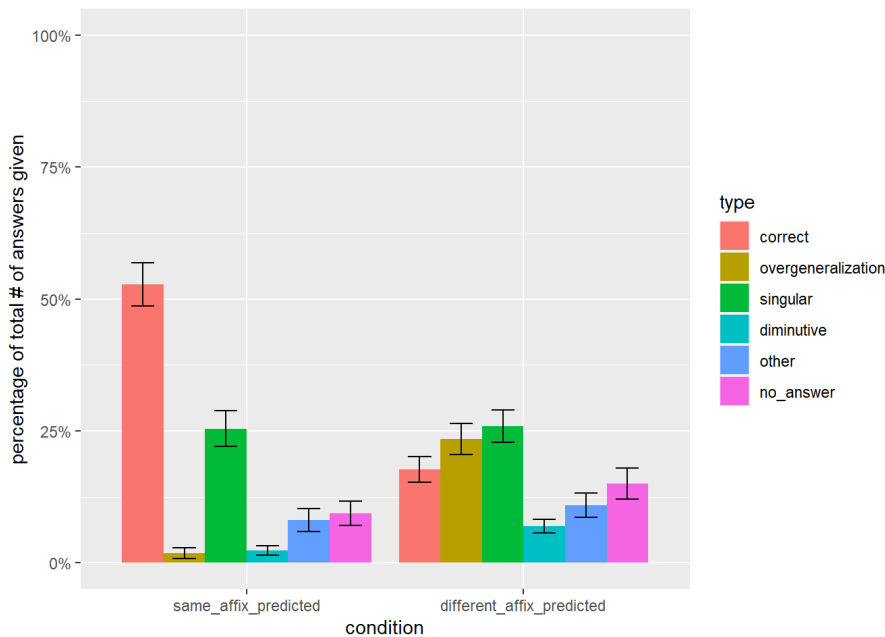


Figure 4.3 Responses to *-s* items, comparing the same versus different condition

In items requiring the *-s* affix, results look partly different than items targeting the *-en* affix. For responses to the condition where rhyme and sonorancy predict the same affix, responses look similar: on average, 53% of the answers contained a correct response, approximately a quarter of the responses contained a singular form of the noun. In this condition, only 2% of responses contained an overgeneralization of the *-en* affix.

However, when rhyme and sonorancy predict a different affix, on average, a bigger proportion of responses contained an overgeneralization of the *-en* affix (24%, as opposed to 2% in the condition where rhyme and sonorancy

predict the same affix). Consequently, the average amount of correct responses in the different condition is substantially lower (18% as opposed to 53%). The average percentage of responses containing a singular form (26%), a pluralization with a diminutive (7%), other responses (11%), or no answers (15%) were comparable to those in other conditions.

4.4.3 Language exposure

To gain further insight into children's language dominance, we calculated an English and Dutch exposure measure for each participant. The distribution of the language exposure measures is depicted in Figure 4.4.

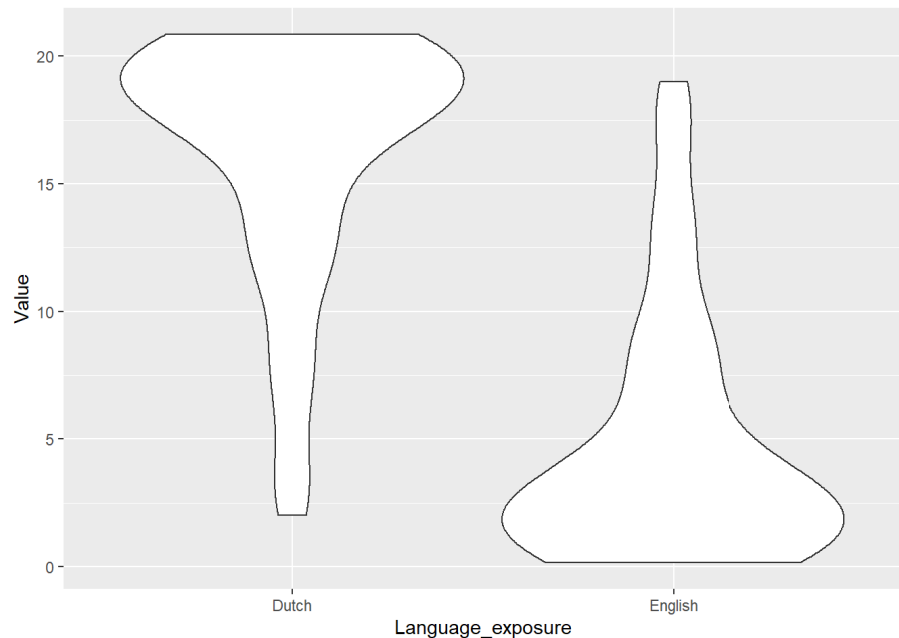


Figure 4.4 Language exposure measures

Results show that even though all children included in this study attended Dutch-English bilingual daycare and heard Dutch and/or English at home, very few

children that participated in our study were English dominant language learners, as many children grew up hearing only Dutch at home and some only attended bilingual daycare for one time unit per week. Some of these children also attended bilingual daycare centers where English was spoken for only 15% of the time (as opposed to other centers where English was spoken 50% of the time). This would then result in a low English exposure measure of 0.15 and a high Dutch exposure measure of 20.85. To see whether the amount of English exposure could be linked to the amount of overgeneralizations children made, we ran a generalized mixed model which will be discussed in the following subsection.

4.4.4 Outcomes of the generalized mixed model: role of target, condition and exposure to English

To investigate the effects of target (*-en* and *-s*), condition (rhyme and sonorancy predict same affix vs. rhyme and sonorancy predict different affix), and English exposure on overgeneralizations, a generalized mixed model was carried out. This model took overgeneralization (1 for overgeneralization, 0 for a correct answer) as a dependent variable. All other types of answers (singulars, diminutives, no answers, and answers coded as ‘other’) were not included in this model, since these categories do not indicate a preference for a certain affix. Additionally, target (*-s* vs. *-en*), condition (rhyme and sonorancy predict same affix vs. rhyme and sonorancy predict different affix) and amount of English exposure were included as predictor variables. Outcomes of the model are reported in Table 4.3.

Table 4.3 Outcomes of the generalized mixed model

| Predictors | Odds ratio | 95% Wald CI for OR | z value | p |
|--|------------|--------------------|---------|---------|
| <i>Target</i> | 4.14 | 1.60 – 10.70 | 2.927 | = 0.003 |
| <i>Condition</i> | 12.62 | 4.79 – 33.27 | 5.128 | < 0.001 |
| <i>English exposure</i> | 1.11 | 1.003 – 1.23 | 2.022 | 0.043 |
| <i>Target * condition</i> | 25.30 | 3.76 – 170.32 | 3.321 | < 0.001 |
| <i>Target * English exposure</i> | 0.60 | 0.49 – 0.74 | -4.858 | < 0.001 |
| <i>Condition * English exposure</i> | 0.97 | 0.79 – 1.18 | -0.303 | 0.762 |
| <i>Target * condition * English exposure</i> | 1.24 | 0.83 – 1.84 | 1.059 | 0.289 |

Even though we expected a stronger tendency to overgeneralize *-s*, this expectation was not borne out. In fact, a significant effect in the opposite direction was found: the significant main effect for target (*-en* versus *-s*) ($OR = 4.14$, 95% Wald CI for $OR = [1.60, 10.70]$, $\chi = 2.927$, $p = 0.003$) indicates that the odds for overgeneralization to occur were significantly greater in items targeting *-s* than the odds for items targeting *-en*. In other words: the odds for overgeneralization of the *-en* affix were significantly higher than those of the *-s* affix.

In addition, a significant main effect for condition was found ($OR = 12.62$, 95% Wald CI for $OR = [4.79, 33.27]$, $\chi = 5.128$, $p < 0.001$): when rhyme and sonorancy predicted a different affix, odds for overgeneralization were 12.62 times bigger than when they predicted the same affix. Also a significant interaction effect was found between target and condition ($OR = 25.30$, 95% Wald CI for $OR = [3.76, 170.32]$, $\chi = 3.321$, $p < 0.001$) indicating that the observed effect for target (higher odds for *-en* overgeneralization) is larger in situations where rhyme and sonorancy predict different affixes than when they predict the same affix.

For English exposure, a small main effect was found ($OR = 1.11$, 95% Wald CI for $OR = [1.003, 1.23]$, $\chi = 2.022$, $p = 0.043$): the more English children were exposed to, the higher the odds for overgeneralization. Additionally, there was a significant negative interaction effect between target and amount of English exposure ($OR = 0.60$, 95% Wald CI for $OR = [0.49, 0.74]$, $\chi = -4.858$, $p < 0.001$), meaning that the observed main effect for target (higher odds for overgeneralization of *-en* than *-s*) decreased as the amount of English input increased.

In short, a main effect for target was found (indicating that *-en* overgeneralizations occurred more frequently than *-s* overgeneralizations), as well as a main effect for condition (higher odds for overgeneralizations to occur when rhyme and sonorancy predicted different affixes) and a main effect for

English exposure (higher odds for overgeneralizations as exposure increased). In addition, we found a significant interaction effect for target and condition (higher odds for *-en* overgeneralizations when rhyme and sonorancy predicted different affixes) and a significant negative interaction effect for target and English exposure (the observed main effect for target got smaller as English exposure increased).

4.5 Discussion

In this study, we investigated the acquisition of the Dutch plural in two- and three year old children attending Dutch-English bilingual ECEC. This particular situation of shared bilingualism in very young children with two prestigious languages allowed us to investigate crosslinguistic influence in direct relation to different factors that have been mentioned in the literature on language contact literature and on bilingual language acquisition, i.e. variability, overlap and language dominance.

We expected to find that children attending Dutch-English bilingual ECEC might show a stronger preference for the *-s* affix than the *-en* affix, leading to more *-s* overgeneralizations, due to the partial overlap between Dutch and English pluralization (Boumans, 2006; Jansen et al., 1980; Moro, 2014; Moro & Klamer, 2015; C. Silva-Corvalán, 1994). The proportion of overgeneralizations however was substantially higher to items targeting *-s* (13%) than items targeting *-en* (4%). This indicates that more children showed preferences for the *-en* affix instead of the *-s* affix .

We also predicted that crosslinguistic influence (in the form of *-s* overgeneralizations) would be more prevalent in contexts where rhyme and sonorancy predicted different affixes, as these conflicting contexts could lead to more overgeneralizations (van Wijk, 2007). We indeed found that more overgeneralizations occurred when rhyme and sonorancy predicted different

affixes, particularly on *-s* items: on average, approximately a quarter of responses to *-s* items in this condition were overgeneralizations of the *-en* affix (as opposed to only 2% of overgeneralizations of the *-en* affix when rhyme and sonorancy predicted the same affix). This tendency was only found in responses to *-s* items and not in response to *-en* items: our prediction that crosslinguistic influence in the form of *-s* overgeneralizations would be more likely to manifest itself in these conflicting conditions was thus not borne out.

Consequently, no amount of *-s* overgeneralization was found that might have been indicative of crosslinguistic influence in this particular group of bilingual children. Rather, we found the opposite: children seemed to have a preference for the *-en* affix. This finding could be explained by the fact that the majority of Dutch plurals seem to take the *-en* suffix as stated by Haeseryn et al. (2019). Since the precise numbers regarding the distribution between *-en* and *-s* pluralization are unknown, we checked if the claim that the vast majority of Dutch nouns take *-en* also goes for nouns to which children below the age of four are exposed. We did so by analyzing the countable nouns included in the *Duizend-en-een-woordenlijst* (Bacchini et al., 2005), a wordlist listing the first 1001 words that should be learned by preschoolers acquiring Dutch as a second language before starting primary school. Results showed that out of 419 countable nouns included in the list, 299 (71%) took *-en*, 116 took *-s* (28%), two took *-en* and *-s* (0.5%) and two took *-eren* (-0.5%), showing that the majority of nouns children in the age group are exposed to indeed take *-en*. This raises questions as to how susceptible the Dutch plural actually is to crosslinguistic influence since it might be a more categorical language phenomenon (de Prada Pérez, 2019) than a variable one, more so than we initially thought.

In addition, it should be noted that a critical property of the *-en* suffix is that it is also used to mark the infinitive form of verbs, as well as past participles of some verb classes (e.g. *lop-en* ‘to walk’, *ge-lop-en* ‘walked’) (Davis et al., 2011). As a result, the *-en* suffix is probably more frequently attested in the Dutch input

even though children in this study are exposed to both Dutch and English. It could thus be suggested that this higher frequency of *-en* in Dutch (because of its use in infinitive and past participle marking) leads to a preference for *-en* pluralization in Dutch. However, it is not clear how this higher instance of *-en* in general would then lead to a stronger preference for *-en* in pluralization specifically. Still, we think it is worth noting that in Dutch the *-en* affix is more frequently attested than the *-s* affix, as it may possibly play a role.

The large amount of *-en* overgeneralizations does however raise the question whether overgeneralization of the *-en* suffix could maybe also be considered crosslinguistic influence. Previous studies on language contact have stated that crosslinguistic influence does not only always lead to convergence of the two languages in question, but also that it could also lead to divergence. For example, Kupisch (2014) found that bilingual adults sometime overuse the structure that was unique to one of the two languages, instead of the structure that exists in both languages, also referred to as *crosslinguistic overcorrection*. This could, in theory, explain the abundance of *-en* overgeneralizations in this group of children that attend Dutch-English bilingual ECEC.

However, the results vis-à-vis dominance, seem to suggest otherwise. If *-en* overgeneralizations truly were a case of crosslinguistic influence, then we would have expected to find a positive significant interaction effect between English exposure and target, as this would mean that the found main effect for target (higher odds for *-en* overgeneralization than *-s* generalization) would increase as the amount of English input increased. Instead, we found a significant negative interaction effect between target and amount of English exposure, suggesting that the higher odds for *-en* overgeneralization decreased as children were exposed to more English input (resulting in more correct productions of the *-s* plural). This goes against the idea of crosslinguistic overcorrection, as you would expect the higher odds of *-en* overgeneralization to increase as children are more frequently exposed to English.

Rather, this significant negative interaction effect suggests that there may have been other (limited) crosslinguistic influence effects present in our data, as it seems to indicate that more exposure to the English language instead facilitates correct production of the *-s* affix in children below the age of four. This could be interpreted as a facilitative effect of crosslinguistic influence where more exposure to English possibly accelerates the acquisition of the *-s* affix.

Taken together, this study does not provide strong evidence for crosslinguistic influence, despite our attempt to select a domain and age group in which crosslinguistic influence might be expected. The only evidence we have found is the significant negative interaction effect between target and amount of English exposure. Still, this significant negative interaction effect was unexpected, and the reason as to why exposure to English possibly facilitates learning of the *-s* affix remains undecided and requires further research. It could be that overlap with the English *-s* affix (and therefore higher frequency of *-s* pluralization in the bilingual input) makes children more aware of the existence of this *-s* affix, thus resulting in faster acquisition of *-s* pluralization. Another explanation could be that bilingualism has facilitating effects on children's metalinguistic and phonological awareness (Bialystok, 2005; Campbell & Sais, 1995). This, combined with the higher frequency of the *-s* pluralization in the Dutch-English input, could make these children more sensitive to the differences between the *-en* and *-s* affix when requiring the Dutch plural. Nevertheless, the idea of a bilingual advantage with regards to phonological awareness has been questioned (Bialystok, 2005; Bialystok et al., 2003). Additionally, our finding needs replication, as it remains to be seen to what extent the results presented in our study are typical for how English affects the acquisition of the Dutch plural since our study had its limitations.

The first limitation is that the group of children that participated in this study, is a group in which the majority (60 out of 95) grew up with only the Dutch language at home. This means that, even though they were exposed to the

English language at daycare, this group is not as bilingual as they would have been if all children were also exposed to both languages at home. It could be that for this reason, no clear evidence for crosslinguistic influence in the form of *-s* overgeneralizations could be found in this group.

Also, it is important to bear in mind that even though we found no amount of *-s* overgeneralization that might have been indicative of crosslinguistic influence as we had expected, the degree of overgeneralizations of both the *-s* and *-en* affix greatly varied from child to child. Results showed that 12 children only overgeneralized the *-s* affix. Out of these 12 children, eight were exposed to the English language at home (four out of eight were exposed to both Dutch and English at home). This does, to an extent, suggest that language dominance does play a role in preference for the *-s* affix.

This also links back to the idea that Dutch pluralization is quite possibly not variable enough (as the majority of Dutch nouns take *-en*), and may be placed more towards the categorical end of the spectrum and might therefore not as susceptible to crosslinguistic influence as initially thought. De Prada-Pérez (2019) states that for each speaker it differs how far to the categorical end of the spectrum they exhibit crosslinguistic influence. It can be dependent on individual and social factors: for example, highly proficient bilingual speakers might only show signs of crosslinguistic influence only in highly variable phenomena, whereas low proficiency bilinguals might also do so in less variable phenomena. This suggests that, even if we consider Dutch pluralization to be a less variable phenomenon, signs of crosslinguistic influence in the form of *-s* overgeneralizations might be found in a group consisting of English dominant children. Future research is needed to determine whether this is indeed the case.

The second limitation lies in the status of the two languages involved. Even though Dutch and English are both highly prestigious languages, both of them fulfil different roles: Dutch is the national (majority) language, whereas English is, in a sense a (highly prestigious) minority language. Usually,

crosslinguistic influence takes place from the most to least prestigious language (Muysken, 2013). Since both languages are prestigious in the Netherlands (Edwards, 2016), but English is still a minority language, it is understandable that the amount of crosslinguistic influence that takes place is only limited. However, whether or not children in this age study are already sensitive to the status and prestige of the languages is questionable as they are very young. It could also thus be the case that the status of the two languages did not play a role at all in this context, which could also explain the fact that we did not detect as much crosslinguistic influence as expected.

Third, the task was initially administered to 162 children. However, the task turned out to be too linguistically demanding for many children in this age group, resulting in a select group of children that were able to participate in the task. Especially children with weaker Dutch language skills were unable to participate in the task, since they did not understand what was expected of them and were unable to complete the sentences. This raises the question as to whether our findings will still hold in a sample where also children with weaker language skills are included. Furthermore, the task itself required a lot of attention from the children: they were presented with a dollhouse and toys. Even though the use of these objects created an engaging and more naturalistic environment, some children had a hard time remaining focused.

All in all, the findings in our study suggest that in this particular context involving two highly prestigious languages, within this particular language domain, and in this specific age group mostly consisting of Dutch dominant children, no clear-cut evidence for crosslinguistic influence from English to Dutch could be found in the form of *-s* overgeneralizations. However, we did find evidence for the role of variability in this domain of language, since children made more overgeneralizations when rhyme and sonorancy contradicted. Also some evidence of crosslinguistic influence was found in that English exposure seemed to facilitate correct production of the *-s* affix, and more tentatively in that

children who overgeneralized the *-s* affix were mostly children that were exposed to the English language at home.

Please note that we did not find any evidence for crosslinguistic influence from Dutch to English in the form of *-s* overgeneralizations in *this particular context*. Studies on language contact have often emphasized how the outcome of crosslinguistic influence can differ in different contexts, such that it is not sufficient to claim that when two languages come into contact, crosslinguistic influence will most definitely occur from A to B, but that it is always dependent on the circumstances and the contexts in which it occurs (Muysken, 2013). We are thus aware that language dominance or variability effects might very well look different if, for example, different languages were involved or children with a higher proficiency in English. Therefore, we believe that insights from language contact studies are useful and crucial in bilingual language acquisition research in that they force us to be aware of the many different outcomes of crosslinguistic influence: it might manifest itself differently in different contexts, with different factors playing different roles.

Chapter 5

Crosslinguistic influence and early lexical development: How form similarity between languages facilitates word learning in the weaker language

5.1 Introduction

Research on early bilingual language acquisition has for a large part been concerned with how the two languages in question affect each other. Most of these studies have focused on cross-linguistic influence in children's acquisition of (morpho)syntax, by investigating the influence of one set of grammatical rules in one language on the production in another (see Serratrice, 2013 for an overview). While crosslinguistic influence on the (morpho)syntactic level has been studied quite extensively, it is not yet entirely clear if and how cross-linguistic influence plays a role children's early lexical development.

Previous studies on the lexical development of bilingual speakers have been concerned with how lexical information is stored: whereas some claim that bilingual speakers have one common memory system for both languages (Gerard & Scarborough, 1989), others suggest that lexical representations of both the L1 and L2 are stored separately, but are accessed simultaneously when bilingual

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speakers are engaged in language activities. When a bilingual speaker is speaking in their L1, lexical representations in their L2 are also activated (Hemsley et al., 2013; McCormack, 1997; Snodgrass, 1984). Executive functioning then regulates the language selection and use by inhibiting the L2. As a result, there should always be an interplay between languages within a bilingual speaker (Kan & Kohnert, 2008).

Previous studies on word learning in bilingual adult speakers have attested this interplay between two languages in the translation and production of cognate words, as these were translated faster and more accurately than non-cognate words (de Groot & Kroll, 1997; Judith F Kroll & Sterwart, 1994; van Hell & de Groot, 1998). More specifically, this effect has been found in unbalanced bilingual speakers' 'weaker' language, suggesting that the stronger language could facilitate word learning in the weaker language (De Groot et al., 2002). Also for young bilingual children it has been found that similarity between words and languages plays a role in word learning (e.g. Gampe et al., 2021; Hemsley et al., 2013).

The present study further investigates this interplay between two languages in children's early lexical development with regards to form similarity between languages by exploring whether form similarity effects also exist in toddlers acquiring English as a foreign language in Dutch-English bilingual early childhood education and care (henceforth: ECEC). To do so, the study focuses on the following research questions: to what extent does form similarity between words in Dutch and English have an effect on word learning in this particular group of children? And does form similarity facilitate a young child's early lexical development of the weaker language? In the following section, we will discuss previous studies on effects of language similarity on word learning, in bilingual adults as well as (young) bilingual children. Before we do so, we start by making some notes on the terminologies used in these studies as they sometimes overlap.

5.2 Background

5.2.1 Some notes on terminology

Some studies that have been concerned with the role of similarity between languages in word learning in bilinguals focused on the role of “cognate status”, meaning that they specifically focused on the acquisition of linguistic forms that are historically related to the same word in the other language and that are similar in the conceptual as well as phonological representation in both languages (e.g. *banana* in English and *banaan* in Dutch). Sometimes, small differences in phonological representations occur when the pronunciation of a cognate word is altered to fit the phonotactic rules of that language.

Other studies however, such as Schelleter (2002), decided to use the term “form similarity” instead of “cognate status” for a number of reasons: (1) not all form-similar pairs are historically related to each other as is always the case in cognates, and (2) if they are historically related, there could sometimes be a difference in meaning between the words. In addition, (3) if the historical links between words are there, they are not always transparent to the learner, and (4) cognates can differ in the amount of phonological overlap they have. By using the term form similarity instead of cognate status, Schelleter (2002) describes “word pairs that are similar in meaning as well as their phonological form” (p. 94), leaving out any historical links that might be present. Since young children before school age learn through auditory input, and they only have phonological representations of words, this definition is often considered more suitable when investigating early lexical development in children before school age. In the present text, we use both terms depending on the study that is discussed. Now that we have explained how the terms cognate status and form similarity are different, we will further discuss studies that explored the links between language

similarity and bilingual lexical development, starting with studies on cognate effects in bilingual adult speakers. Then, we move on to studies on similarity effects in early bilingual lexical development.

5.2.2 Similarity between languages and bilingual lexical development

In research on word learning in bilingual adult speakers, effects of similarity between languages have mostly been attested in the translation of cognate words. Research has found that cognates are recognized, translated and produced faster and more accurately by bilingual adults in experimental settings than non-cognates (e.g. Costa et al., 2000, 2005; de Groot & Kroll, 1997; Dijkstra et al., 2010; Kroll & Stewart, 1994; Mulder et al., 2014; Otwinowska & Szewczyk, 2019; van Hell & de Groot, 1998). In unbalanced bilingual speakers, this cognate effect has also been attested in the bilingual speaker's weaker language.

For example, a study by De Groot et al. (2002) showed that cognate words in the weaker language were more quickly recognized and produced than non-cognate words. This suggests that the stronger language might even facilitate word learning in the weaker language. Furthermore, Costa et al. (2005) showed that cognates not only have an effect on the speed with which words are produced, but they also seem to be “resistant to retrieval failures both in normal and aphasic speakers” (p. 101). Taken together, these findings indicate that in bilingual adult speakers, the two languages interact and that similarity between words plays an important role and that there might be an interplay between languages with regards to cross-language transfer of vocabulary knowledge in bilingual adult speakers.

Also for young bilingual speakers, it has been found that cognate status and similarity play a role in acquisition. Previous studies on the effects of cognate status in bilingual school aged children (4- to 7-years old) showed that children

scored significantly higher on cognate items than non-cognate items on expressive vocabulary. More specifically, Hemsley et al. (2013) investigated the effects of cognate status on lexical development in school aged children in their weaker language: whereas they did find an effect of cognate status in expressive vocabulary, they were unable to detect an effect in receptive vocabulary. This was explained by the fact that vocabulary learning often appears receptively before expressively. The scores on the receptive vocabulary task were close to ceiling, which made it impossible to properly detect a cognate advantage in receptive vocabulary. Hemsley et al. (2013) claim that if the participants were tested earlier on, they would have probably detected a cognate advantage in receptive vocabulary instead of expressive vocabulary.

Whereas Hemsley et al. (2013) did not detect similarity effects in receptive vocabulary in children's weaker language, Bosma et al. (2019) did: in a longitudinal study on Frisian-Dutch bilingual children and their acquisition of cognates in Frisian and cross-language similarity, they found an effect for cross-language similarity in 5- and 6-year old children with a low intensity of exposure to Frisian. They showed that in this group, the higher the degree of cross-language similarity, the better their performance on receptive vocabulary.

More recently, more evidence for effects of similarity between languages on word learning in even younger children was provided by Gampe et al. (2021) who investigated whether language similarity had a facilitative effect on word learning in simultaneous bilingual children between the age of 18 to 30 months. All children grew up with Swiss German and one other language at home, with Swiss German as their dominant language. They assessed children's vocabulary using an indirect measure such as parental questionnaires that included Swiss German translations from the Standard German MacArthur Bates CDI questionnaire. Results showed that children's vocabulary scores were correlated with the lexico-phonological similarity (based on the Automated Similarity Judgment Program database, henceforth: ASJP) and morpho-syntactic similarity

measures (calculated using the World Atlas of Languages, henceforth: WALs), indicating that language similarity indeed affected young bilingual children's vocabulary skills.

However, the authors stated that the effect was smaller than expected (only explaining 3% of the variance). Since they correlated similarity scores with vocabulary scores in the children's dominant language and found an effect smaller than expected, they argue that it is possible that language similarity might have an even bigger effect on the children's weaker (or: less frequently heard) language, as has also been found for adult L2 learners (De Groot et al., 2002; Schepens et al., 2013) and older school aged children (Bosma et al., 2019; Hemsley et al., 2013; Sheng et al., 2016).

A special branch of research into the effects of similarity between languages is work that has investigated to what extent a bilingual child's knowledge of translation equivalents in both languages is affected by form similarity. Translation equivalents are expressions in one language that have the same meaning as expressions in another (e.g. the noun *bike* in English and the word *fiets* in Dutch). Translation equivalents can be cognates (such as *ball* in English and *bal* in Dutch), or non cognates (such as *branch* in English and *tak* in Dutch), and can be form identical (*tunnel* in English and *tunnel* in Dutch), form similar (*banana* in English and *banaan* in Dutch) or form dissimilar (*pigeon* in English and *duif* in Dutch).

Previous studies on vocabulary acquisition in bilingual children show that the larger a child's vocabulary in the two languages, the more translation equivalents the child knows in both languages (Deuchar & Quay, 2000; Nicoladis, 1998). While the number of translation equivalents that is known in both languages is relatively low before 18 months (David & Wei, 2008; Deuchar & Quay, 2000; Nicoladis, 1998), from age two onwards, the number of translation equivalents that bilinguals produce in both languages seems to steadily increase (Deuchar & Quay, 2000; Goodrich et al., 2015; Junker & Stockman, 2002). The

acquisition of translation equivalents does not just involve “the addition of a second label to an already existing one in the child’s mental lexicon” (Bosch & Ramon-Casas, 2014, p. 317), but is also argued to be influenced by similarity between the two languages in question: similarity in the two phonological forms could ease the learning of the translation equivalents in both languages (Gampe et al., 2021). A few studies have thus been concerned with this matter.

The first to do so was Schelleter (2002), who focused on the production of translation equivalents in a bilingual German-English child aged 1;11 – 2;9 in spontaneous speech in German and English. The child was equally exposed to both languages. The translation equivalent word pairs were categorized as form identical, form similar or form dissimilar. The results showed that once the child acquired a word that had a form similar translation equivalent in the other language, it took approximately 2.7 months for that translation equivalent to be produced in that other language. Meanwhile, the first use of a form dissimilar translation equivalent took approximately 3.6 months, indicating that form dissimilar translational equivalents take longer to acquire. Additionally, the majority of produced translation equivalents consisted of form similar nouns. These results also suggest that when there is a degree of form similarity across translation equivalents, this could be facilitative in lexical development: the form similarity of translation equivalents might ease the learning of the two words in both languages.

The second is a study by Bosch and Ramon-Casas (2014), who investigated the effect of phonological proximity of translation equivalents on lexical acquisition in 18-month-old Catalan-Spanish simultaneous bilingual children. The group was a heterogenous group with regards to language dominance: the distribution of both languages ranged from 50%–50% up to a maximum of 75%–25% distribution. Using an indirect measure such as a parental report (adapted from a checklist used by Águila et al., 2005), they measured children’s expressive vocabulary in the two languages. The results revealed that

the bilingual children acquired form identical translational equivalents before form similar and form dissimilar translational equivalents, again indicating that the phonological proximity of translation equivalents facilitates lexical acquisition.

Also more recently, Gampe et al. (2021) investigated whether language similarity influenced the acquisition of translation equivalents in children's dominant language. In this study, 102 simultaneous bilingual children aged 18 to 36 months participated. They were all exposed to German Swiss and a different language at home, with Swiss German as their dominant language. Again, indirect measures such as parental questionnaires (including translations from the Standard German MacArthur Bates CDI questionnaire) were used to assess children's vocabulary in both languages. The same measures of language similarity were used (ASJP, WALIS). Results revealed that the number of cognate translational equivalents reported known by the children correlated with lexico-phonological similarity between languages, as well as morpho-syntactic similarity between languages, while the number of non-cognate translation equivalents did not. They concluded that the more similar the two languages were (in terms of lexico-phonological similarity and morpho-syntactic similarity), the more cognate translation equivalents the early simultaneous bilingual children had learned.

5.2.3 Current study

Previous studies on effects of form-similarity and cognate status on acquisition have found that such effects exist in adult bilingual speakers, as well as in child bilingual speakers. More specifically, results on early bilingual lexical development and similarity between languages show that similarity between languages in general (in terms of morphosyntactic similarity and lexico-phonological similarity) as well as form similarity between words specifically could influence the lexical acquisition of words (Gampe et al., 2021; Hemsley et

al., 2013) and translational equivalents in particular (Bosch & Ramon-Casas, 2014; Gampe et al., 2021; Schelleter, 2002) and knowing a form similar translation equivalent in one language, might facilitate the acquisition of the translation equivalent in the other.

In unbalanced bilingual adult speakers and unbalanced bilingual school aged children it even has been found that this form similarity effect particularly exists in the weaker language, such that the stronger language facilitates word learning in that language (Bosma et al., 2019; De Groot et al., 2002; Hemsley et al., 2013). Whether this is also the case for early lexical development in toddlers learning a foreign language, remains an open question. Therefore in this study, we further investigate the effects of form similarity on the early lexical development of two- and three-year-old children learning English as a foreign language at Dutch-English bilingual ECEC, by focusing on word learning in the weaker language. Similar to Schelleter (2002), we employ the term form similarity rather than cognate status, as we believe this term is better suited for this age group that only acquires language through auditory input.

This study is innovative in two ways. (1) As previous research on the effects of form similarity on early lexical development in toddlers is primarily based on indirect measures, we opt for more direct measures to assess vocabulary in this study by using the Peabody Picture Vocabulary Test (henceforth: PPVT) to measure receptive vocabulary and the Expressive Vocabulary task of the Clinical Evaluation of Language Fundamentals Preschool (henceforth: CELF) to measure expressive vocabulary. (2) Whereas previous studies investigated the effects of form similarity on language acquisition at one point in time, we monitor the effects of form similarity over time by administering the tasks in two rounds of testing, around seven to nine months apart. In doing so, we hope to provide further insight into form similarity effects on the actual word learning *process* in children acquiring English as a foreign language in Dutch-English bilingual daycares.

The expressive vocabulary task used in this study further allows us to measure the acquisition of translation equivalents, since the English and Dutch versions largely consist of translation equivalents. By directly assessing the effects of form similarity on the acquisition of translation equivalents, we are able to more precisely monitor the ways in which form similarity might facilitate word learning in the weaker language: assessing items in *both* languages allows us to keep track of whether words were also known in Dutch. As a result, we are able to investigate the effects of form similarity on word learning in the weaker language in expressive vocabulary more thoroughly. However for receptive vocabulary, it remains implicit whether a word is known in both languages since the Dutch and English versions of the PPVT included different items. This study thus addresses the following research questions:

- (1) What are the effects of form similarity between Dutch and English on the acquisition of the weaker language (English) in terms of receptive vocabulary in two- and three-year-old children acquiring English as a foreign language and do these effects change over time?
- (2) What are the effects of form similarity between Dutch and English on the acquisition of expressive vocabulary in the weaker language (English) in terms of translational equivalents in two- and three-year-old children acquiring English as a foreign language and do these effects change over time?

If form similarity indeed facilitates word learning in the weaker language, we expect to find form similarity effects in both receptive and expressive vocabulary. However, as the children in our study are relatively young and are still in the beginning stages of their L2 acquisition process, it could also be the case that form similarity effects are only detected in receptive vocabulary, as vocabulary learning often appears receptively before expressively (Hemsley et al., 2013).

With regards to changes over time, we might find that form similarity effects increase between the first and second round of testing. After all, for bilingual adult speakers and school-aged children it already has been found that form similarity could have facilitative effects on word learning in the weaker language, however for these young children it is relatively unclear whether they can already make use of such strategies that rely on L1 knowledge this at such a young age. We might therefore observe that these form similarity effects only appear (or become more persistent) later on, and therefore increase over time. Still, we might also be unable to detect any form similarity effects (neither in the first nor in the second round of testing) in this group of children using these direct measures, since children in this study are still very young, acquire English as a foreign language and are no fully fledged unbalanced bilinguals.

5.3 Method

5.3.1 Participants

In total, 85 (43 females, 42 males, mean age = 2;11 years) unbalanced Dutch-English bilingual children with Dutch as their dominant language were included in this study. These children were part of a larger sample of children attending bilingual Dutch-English ECEC in the Netherlands (N= 751). In this study, information about the children's exposure to Dutch and English at home and at daycare was gathered using an online parental questionnaire. The questionnaire contained questions about the languages children were exposed to at home by their main caregivers, as well as how often the caregivers spoke these languages. The amount of home exposure to Dutch and English was then calculated in the same way it was calculated in chapter 4. First, parents indicated for each caregiver how often they looked after their child by indicating with whom the child was

during the mornings, afternoons and evenings for each day of the week. Then, they indicated which languages these caregivers spoke to their child, and how often they used these languages, in percentages. The amount of exposure to Dutch or English was then calculated by multiplying the amount of time units spent with each caregiver with the percentage the respective caregivers spoke in that language. Similarly, parents indicated how often their child attended bilingual daycare. Exposure to Dutch and English at daycare was then calculated by multiplying the number of time units (mornings, afternoons) and the percentage of Dutch and English spoken at the daycare. Then, to create one combined Dutch and English exposure measure that captures both exposure at home and at daycare, these two values (home exposure and daycare exposure) were added up and divided by 100 to provide us with a total number of time units per week a child was exposed to Dutch and English.

Using this information, in this study, only children were included that were exposed to Dutch ($N= 69$) and sometimes to a small amount of English at home ($N = 16$), yielding a sample of Dutch dominant children. They all varied in the degree to which they were exposed to Dutch and English, due to differing home situations and varying amounts of daycare visits per week: children included in this study were exposed to Dutch ranging from 75% of the week (15 time units) to 99% of the week (20.78 time units). The distribution of the language exposure measures are depicted in Figure 5.1.

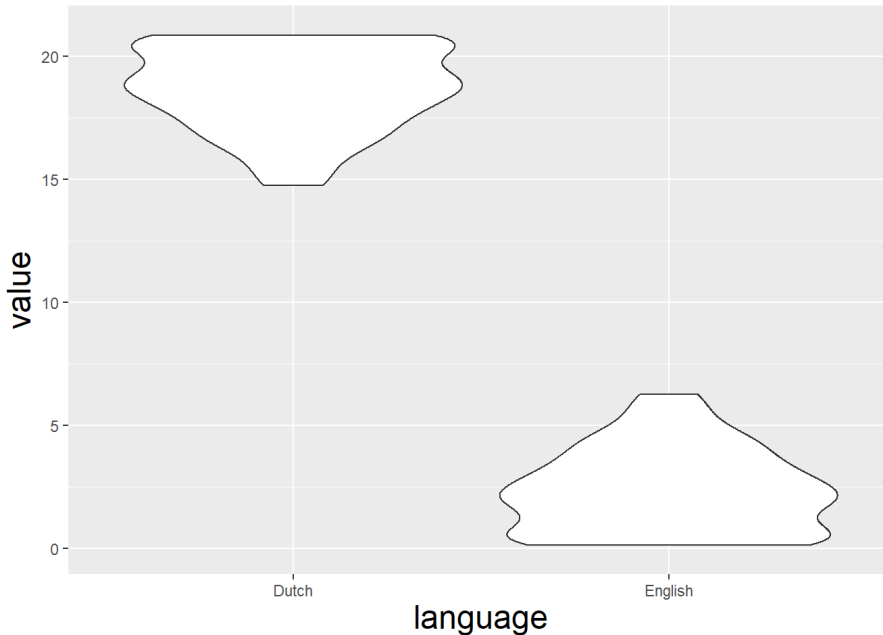


Figure 5.1 Language exposure measures

Parents or caregivers gave informed consent prior to their children's participation in this study. None of the children had auditory or other language-related problems. All children participated in the English version of the Peabody Picture Vocabulary Task (Dunn & Dunn, 2007) to measure receptive vocabulary. Out of these 85 children, 42 children took part in a follow-up measurement on a receptive vocabulary task approximately eight months later (25 females, 17 males, mean age = 3;3 years). Additionally, 67 out of the 85 children participated in an expressive vocabulary task in both the Dutch and English (36 females, 31 males, mean age = 3;1 years) to investigate the acquisition of translation equivalents. Out of these 67 children, 25 participated in the follow-up measurement on the expressive vocabulary task eight months later (16 females, 9 males, mean age = 3;8 years).

5.3.2 Vocabulary measurements

To measure children's receptive knowledge of age-appropriate vocabulary, the English version of the PPVT was administered (Dunn & Dunn, 2007). This is a standardized tool to measure English receptive vocabulary in ages 2;3 to 90 years old. In this study, we used the PPVT starting with slightly younger children from 2;0 years old and older. Because of this, only raw scores were used. During the task, participants were shown four pictures on a laptop screen and were asked to point to the correct picture after the experimenter read aloud the target word. The PPVT consisted of 19 sets of words, each containing 12 words per set.

To gain insight into children's English expressive vocabulary and their acquisition of translation equivalents, the Expressive Vocabulary task of the CELF was assessed in Dutch (Wiig et al., 2012) and English (Wiig et al., 2004). In this task, the participant was asked to identify an object, person or activity portrayed by an illustration that was shown on a laptop screen. The CELF Preschool is a standardized comprehensive test of receptive and expressive language function for children between the ages of 3;0 and 6;11. Since the task was administered to children from the age of 2;6, only raw scores were used. The task contained 20 vocabulary items in total in the Dutch and the English version. Across the Dutch and English versions, twelve translation equivalents were identified and included in this study (see Table 5.2).

For both the English items of the PPVT and translation equivalents of the CELF Expressive Vocabulary tasks, the items were categorized as form similar or form dissimilar according to the degree of phonological overlap between the Dutch and English translations. The degree of phonological overlap was calculated by using the Levenshtein distances on the basis of the pronunciation of the Dutch and English words. The Levenshtein distance (Levenshtein, 1966) equals the minimal number of substitutions, insertions and deletions that is required to edit one string into another. To calculate the

Levenshtein distances on the basis of the pronunciation of words, we used the Levehnstein Demo (Kleiweg, n.d.). In these calculations, the weights of the substitutions, insertions and deletions were sensitive to the phonetic feature overlap between words. For example, replacing a [d] with a [t] is given less weight as replacing a [d] with an [a]. Thus in these calculations the weights of the substitutions were dependent on the sounds involved. We calculated the Levenshtein distance from Dutch to English, as we were interested in form similarity effects on word learning in English in children whose dominant language was Dutch. It should be noted that by calculating the Levenshtein distance on the basis of the Dutch and English pronunciations of the words in question, we do not take into account any historical links between words in the two languages: the calculation is merely an operationalization of the phonological overlap between words.

The Levenshtein distance inherently yields higher values for long words and lower values for shorter words. In order for the similarity measures to be comparable, we adjusted the Levenshtein distance as follows:

$$\text{score} = 1 - \frac{\text{Levenshtein distance}}{\text{length} \times \text{weight}}$$

length = max(*length of source expression*, *length of destination expression*)

weight = *heaviest weight per character across all items in the task*

Equation 1. Levenshtein distance normalized for word length.

This calculation provides a measurement of form similarity that is relative to word length and in addition normalizes the Levenshtein distance: with the above calculation, form identical words return a Levenshtein distance of 0 that results in a similarity score of 1, whereas words with no phonological overlap at all will return a similarity score of 0. This normalized Levenshtein distance (NLD) thus provides us with a measure of form similarity ranging between 0 and 1.

On the basis of these normalized Levenshtein distances, items were categorized as being form similar or dissimilar. For this study, we opted for a categorical variable of form similarity instead of a numerical one, since we believe that the numerical differences between the NLD's are not meaningful in and of itself. However, we do believe that the NLD's are a useful instrument to determine which items are phonologically similar and which ones are not.

With the cutoff point chosen at a distance of 0.672, all items having an NLD lower than 0.672 were categorized as dissimilar, whereas all items having an NLD higher than 0.672 were categorized as similar. This cutoff point was chosen intuitively: by setting the cutoff point at 0.672, the PPVT item *flower* (Dutch translation: 'bloem', NLD = 0.671361502) was categorized as dissimilar, whereas the CELF item *flag* that intuitively sounds similar to its Dutch translation ('vlag', NLD = 0.673913), was categorized as similar. Table 5.1 shows all items administered in the English PPVT, their Dutch translations as well as their normalized Levenshtein distances and categorizations. For the translation equivalents in the CELF and their normalized Levenshtein distances, see Table 5.2.

Table 5.1 Items on the English PPVT, their Dutch translations and their normalized Levenshtein distances and categorizations

| Item | English | Dutch translation | Normalized Levenshtein distance | Category |
|----------------|------------|-------------------|---------------------------------|------------|
| <i>Pigeon</i> | /ˈpɪdʒən/ | /dœyʃ/ | 0 | dissimilar |
| <i>Boulder</i> | /ˈboʊldər/ | /rɔtsblɔk/ | 0.053521127 | dissimilar |
| <i>Arrow</i> | /ˈærəʊ/ | /peil/ | 0.056338028 | dissimilar |
| <i>Empty</i> | /ˈɛmpti/ | /lex/ | 0.076056338 | dissimilar |
| <i>Towing</i> | /ˈtoʊɪŋ/ | /ˈsleɪpən/ | 0.117370892 | dissimilar |

Table 5.1 (*Continued*)

| Item | English | Dutch translation | Normalized Levenshtein distance | Category |
|-------------------|----------------|------------------------------|--|-----------------|
| <i>Horrificed</i> | /ˈhɒrəˌfaɪd/ | /xəsxəkt/ | 0.126760563 | dissimilar |
| <i>Branch</i> | /bræntʃ/ | /tak/ | 0.136150235 | dissimilar |
| <i>Waist</i> | /weɪst/ | /ˈtəjə/ | 0.177464789 | dissimilar |
| <i>Plumber</i> | /ˈplʌmə/ | /ˈlotxɪtər/ | 0.201877934 | dissimilar |
| <i>Happy</i> | /ˈhæpi/ | /blei/ | 0.205633803 | dissimilar |
| <i>Fence</i> | /fens/ | /hɛk/ | 0.211267606 | dissimilar |
| <i>Buckle</i> | /ˈbʌkəl/ | /xɛsp/ | 0.233802817 | dissimilar |
| <i>Globe</i> | /glɒb/ | /werəltbəl/ | 0.24256651 | dissimilar |
| <i>Ax</i> | /æks/ | /beil/ | 0.267605634 | dissimilar |
| <i>Squash</i> | /skwɒʃ/ | /pəmˈpʌn/ | 0.276995305 | dissimilar |
| <i>Gift</i> | /ɡɪft/ | /kaˈdo/ | 0.281690141 | dissimilar |
| <i>Roof</i> | /ruːf/ | /dak/ | 0.286384977 | dissimilar |
| <i>Kicking</i> | /ˈkɪkɪŋ/ | /ˈsxɔpən/ | 0.295774648 | dissimilar |
| <i>Toe</i> | /toʊ/ | /ten/ | 0.305164319 | dissimilar |
| <i>Catching</i> | /ˈkæʃɪŋ/ | /ˈvʌŋən/ | 0.314553991 | dissimilar |
| <i>Turtle</i> | /ˈtɜrtəl/ | /ˈsxɪltpʌt/ | 0.345070423 | dissimilar |
| <i>Whistle</i> | /ˈwɪsəl/ | /flœyt/ | 0.357746479 | dissimilar |
| <i>Ruler</i> | /ˈrulər/ | /liniˈjal/ | 0.364185111 | dissimilar |
| <i>Mouth</i> | /maʊθ/ | /mɔnt/ | 0.366197183 | dissimilar |
| <i>Flaming</i> | /ˈfleɪmɪŋ/ | /vlamənt/ | 0.369014085 | dissimilar |
| <i>Carrot</i> | /ˈkærət/ | /ˈwɔrtəl/ | 0.370892019 | dissimilar |
| <i>Vehicle</i> | /ˈviːhɪkəl/ | /ˈvurtœyx/ | 0.3722334 | dissimilar |
| <i>Refueling</i> | /riˈfjuəlɪŋ/ | /tɛŋkən/ | 0.399061033 | dissimilar |

Table 5.1 (*Continued*)

| Item | English | Dutch translation | Normalized Levenshtein distance | Category |
|-------------------|----------------|------------------------------|--|-----------------|
| <i>Painting</i> | /ˈpeɪntɪŋ/ | /ˈsxɪldərən/ | 0.401564945 | dissimilar |
| <i>Square</i> | /skwɛr/ | /ˈvɪrkant/ | 0.404426559 | dissimilar |
| <i>Shoe</i> | /ʃu/ | /sxun/ | 0.408450704 | dissimilar |
| <i>Farm</i> | /fɑrm/ | /burdəˈrei/ | 0.425352113 | dissimilar |
| <i>Timer</i> | /ˈtaɪmər/ | /ˈwɛkər/ | 0.425352113 | dissimilar |
| <i>Jumping</i> | /ˈdʒʌmpɪŋ/ | /ˈsprɪŋən/ | 0.428571429 | dissimilar |
| <i>Floating</i> | /ˈflaʊtɪŋ/ | /ˈdri:vən/ | 0.428571429 | dissimilar |
| <i>Chimney</i> | /ˈtʃɪmni/ | /ˈsxɔrsten/ | 0.443661972 | dissimilar |
| <i>Cobweb</i> | /ˈkɑ,bwɛb/ | /ˈspɪnənwɛp/ | 0.461658842 | dissimilar |
| <i>Dog</i> | /dɔg/ | /hɔnt/ | 0.464788732 | dissimilar |
| <i>Target</i> | /ˈtɑrgət/ | /dul/ | 0.464788732 | dissimilar |
| <i>Vegetable</i> | /ˈvɛdʒtəbəl/ | /ˈxruntə/ | 0.467918623 | dissimilar |
| <i>Throwing</i> | /ˈθroʊɪŋ/ | /ˈxɔjən/ | 0.483568075 | dissimilar |
| <i>Saving</i> | /ˈsɑɪŋ/ | /ˈzaxən/ | 0.492957746 | dissimilar |
| <i>Belt</i> | /bɛlt/ | /rim/ | 0.507042254 | dissimilar |
| <i>Juggling</i> | /ˈdʒʌgəlɪŋ/ | /jɔŋˈlɛrən/ | 0.507042254 | dissimilar |
| <i>Trunk</i> | /trʌŋk/ | /stɑm/ | 0.526760563 | dissimilar |
| <i>Fly</i> | /flaɪ/ | /vlɪx/ | 0.535211268 | dissimilar |
| <i>Knight</i> | /naɪt/ | /ˈrɪdər/ | 0.538028169 | dissimilar |
| <i>Squirrel</i> | /ˈskwɛrəl/ | /ˈɛkhɔrn/ | 0.541247485 | dissimilar |
| <i>Duck</i> | /dʌk/ | /ɛnt/ | 0.549295775 | dissimilar |
| <i>Delivering</i> | /dɪˈlɪvərɪŋ/ | /bəˈzɔrxən/ | 0.561815336 | dissimilar |
| <i>Dressing</i> | /ˈdresɪŋ/ | /ˈɒnkledən/ | 0.563380282 | dissimilar |

Table 5.1 (*Continued*)

| Item | English | Dutch translation | Normalized Levenshtein distance | Category |
|-----------------|----------------|------------------------------|--|-----------------|
| <i>Feather</i> | /ˈfɛðər/ | /ver/ | 0.571830986 | dissimilar |
| <i>Gigantic</i> | /dʒaɪˈɡæntɪk/ | /xiˈxantis/ | 0.577464789 | dissimilar |
| <i>Reading</i> | /ˈrɛdɪŋ/ | /ˈlezən/ | 0.583098592 | dissimilar |
| <i>Spoon</i> | /spun/ | /ˈlepəl/ | 0.594366197 | dissimilar |
| <i>Peeking</i> | /ˈpikiŋ/ | /ˈspikən/ | 0.615023474 | dissimilar |
| <i>Furry</i> | /ˈfɜri/ | /harəx/ | 0.616901408 | dissimilar |
| <i>Drum</i> | /drʌm/ | /ˈtrəməl/ | 0.624413146 | dissimilar |
| <i>Dentist</i> | /ˈdɛntəst/ | /ˈtandarts/ | 0.626760563 | dissimilar |
| <i>Pencil</i> | /ˈpensəl/ | /ˈpɒtlot/ | 0.633802817 | dissimilar |
| <i>Swamp</i> | /swʌmp/ | /muˈras/ | 0.636932707 | dissimilar |
| <i>Wrench</i> | /rɛntʃ/ | /slɒtəl/ | 0.645875252 | dissimilar |
| <i>Violin</i> | /vaɪəˈlɪn/ | /viˈjɒl/ | 0.653923541 | dissimilar |
| <i>Flower</i> | /ˈflaʊər/ | /blum/ | 0.671361502 | dissimilar |
| <i>Aquarium</i> | /əˈkwɛrɪəm/ | /aˈkwarijɪm/ | 0.708920188 | similar |
| <i>Athlete</i> | /ˈæθlɪt/ | /atˈlet/ | 0.718309859 | similar |
| <i>Castle</i> | /ˈkæsəl/ | /kasˈtel/ | 0.727699531 | similar |
| <i>Elbow</i> | /ˈɛlˌboʊ/ | /ˈɛləbɒx/ | 0.727699531 | similar |
| <i>Eating</i> | /ˈiɪŋ/ | /ˈetən/ | 0.732394366 | similar |
| <i>Claw</i> | /klɔ/ | /klau/ | 0.732394366 | similar |
| <i>Fountain</i> | /ˈfaʊntən/ | /fɒnˈteɪn/ | 0.734406439 | similar |
| <i>Shoulder</i> | /ˈʃoʊldər/ | /ˈsxɑudər/ | 0.734406439 | similar |
| <i>Diamond</i> | /ˈdaɪmənd/ | /dɪjaˈmɑnt/ | 0.746478873 | similar |
| <i>Sorting</i> | /ˈsɔrtɪŋ/ | /sɔrˈterən/ | 0.746478873 | similar |

Table 5.1 (*Continued*)

| Item | English | Dutch translation | Normalized Levenshtein distance | Category |
|--------------------------|----------------|--------------------------|--|-----------------|
| <i>Bus</i> | /bʌs/ | /bys/ | 0.774647887 | similar |
| <i>Red</i> | /rɛd/ | /rot/ | 0.774647887 | similar |
| <i>Uniform</i> | /'jʊnə fɔrm/ | /'ynifɔrm/ | 0.777464789 | similar |
| <i>Fire</i> | /'faɪər/ | /vyr/ | 0.785915493 | similar |
| <i>Dripping</i> | /'drɪpɪŋ/ | /'drœypən/ | 0.790744467 | similar |
| <i>Safe</i> ⁸ | /seɪf/ | /klœys/ | 0.799687011 | similar |
| <i>Dancing</i> | /'dænsɪŋ/ | /'dɑnsən/ | 0.802816901 | similar |
| <i>Vase</i> | /veɪs/ | /vas/ | 0.808450704 | similar |
| <i>Panda</i> | /'pændə/ | /'pɑndə/ | 0.830985915 | similar |
| <i>Picking</i> | /'pɪkɪŋ/ | /'pɪkən/ | 0.830985915 | similar |
| <i>Hyena</i> | /haɪ'ɪnə/ | /hi'jɛnə/ | 0.830985915 | similar |
| <i>Group</i> | /grʊp/ | /xrup/ | 0.85915493 | similar |
| <i>Tunnel</i> | /'tʌnəl/ | /'tʏnəl/ | 0.864788732 | similar |
| <i>Banana</i> | /bə'næneɪ/ | /ba'nɑn/ | 0.877934272 | similar |
| <i>Cactus</i> | /'kæktəs/ | /'kaktʏs/ | 0.877934272 | similar |
| <i>Ball</i> | /bɔl/ | /bal/ | 0.887323944 | similar |
| <i>Flamingo</i> | /flə'mɪŋɡoʊ/ | /flɑ'mɪŋɡo/ | 0.887323944 | similar |
| <i>Penguin</i> | /'pɛŋɡwən/ | /'pɪŋɡwɪn/ | 0.895372233 | similar |
| <i>Canoe</i> | /kə'nu/ | /'kɑno/ | 0.895372233 | similar |
| <i>Envelope</i> | /'ɛnvə'loʊp/ | /'ɛnvə'lɔp/ | 0.908450704 | similar |

⁸ We believe that the item *safe* does not phonologically resemble the Dutch word *kluis* in any way. Since we disagreed with this categorization on the basis of the Normalized Levenshtein distance and the item has only been assessed four times, we decided to exclude this item from the analyses.

Table 5.1 (*Continued*)

| Item | English | Dutch translation | Normalized Levenshtein distance | Category |
|-----------------|----------------|------------------------------|--|-----------------|
| <i>Reptile</i> | /ˈrɛptail/ | /rɛpˈtil/ | 0.908450704 | similar |
| <i>Lamp</i> | /læmp/ | /lamp/ | 0.915492958 | similar |
| <i>River</i> | /ˈrɪvər/ | /riˈvir/ | 0.922535211 | similar |
| <i>Foot</i> | /fʊt/ | /vut/ | 0.924882629 | similar |
| <i>Calendar</i> | /kaˈlɛndər/ | /ˈkælɛndər/ | 0.950704225 | similar |
| <i>Cookie</i> | /ˈkʊki/ | /ˈkukjə/ | 0.954929577 | similar |
| <i>Cup</i> | /kʌp/ | /kɔp/ | 0.962441315 | similar |
| <i>Ankle</i> | /ˈæŋkəl/ | /ˈɛŋkəl/ | 0.977464789 | similar |
| <i>Net</i> | /net/ | /nɛt/ | 1 | similar |
| <i>Vest</i> | /vɛst/ | /vɛst/ | 1 | similar |
| <i>Chef</i> | /ʃɛf/ | /ʃɛf/ | 1 | similar |
| <i>Harp</i> | /hɑrp/ | /hɑrp/ | 1 | similar |
| <i>Bloom</i> | /blum/ | /blum/ | 1 | similar |
| <i>Heart</i> | /hɑrt/ | /hɑrt/ | 1 | similar |

Table 5.2 Translation equivalents in the Dutch and English CELF (Expressive Vocabulary subtask) and their normalized Levenshtein distances and categorizations

| Translation equivalent | Dutch item | English item | Normalized Levenshtein distance | Category |
|------------------------|-----------------|-------------------|---------------------------------|------------|
| <i>Biking</i> | /fɪsən/ | /'baɪkɪŋ/ | 0.195652 | dissimilar |
| <i>Scales</i> | /wɛxʂxəl/ | /skelz/ | 0.198758 | dissimilar |
| <i>Firefighter</i> | /'brantwerman/ | /'faɪr ,faɪtər/ | 0.241107 | dissimilar |
| <i>Carrot</i> | /wɔrtəl/ | /'kærət/ | 0.271739 | dissimilar |
| <i>Pouring</i> | /sxɛŋ .kən/ | /'pɔrɪŋ/ | 0.319876 | dissimilar |
| <i>Wheelchair</i> | /'rɔlstul/ | /'wɪl ,ʃɛr/ | 0.36646 | dissimilar |
| <i>Calculator</i> | /'rekəmə ,ʃɪnə/ | /'kælkjə ,leɪtər/ | 0.407609 | dissimilar |
| <i>Footprint</i> | /'vutstap/ | /'fɒt ,prɪnt/ | 0.478261 | dissimilar |
| <i>Binoculars</i> | /vɛrəkɛɪkər/ | /bɪnɔkjələɪz/ | 0.513834 | dissimilar |
| <i>Flag</i> | /vlɑʃ/ | /flæg/ | 0.673913 | similar |
| <i>Piano</i> | /pi 'jano/ | /pi 'ænoʊ/ | 0.678261 | similar |
| <i>Calendar</i> | /ka 'lɛndər/ | /'kæləndər/ | 0.942935 | similar |

5.3.3 Data analysis

To determine whether form similarity, time and age had an effect on the acquisition of words in English, two generalized models with mixed effects were carried out: one on the PPVT scores and one on the CELF translation equivalent scores. More specifically, we investigated whether the chance of scoring a correct answer was dependent on similarity, time and age.

For the analysis on the PPVT data, the model took score (1 for a correct answer, 0 for an incorrect answer) as a dependent variable. Similarly, for the analysis on the translation equivalents of the CELF, that model also took score as a dependent variable, but in this case the answer was coded as 1 if the participant had given a correct answer in *both* languages, and 0 if the participant had given an incorrect answer in any of the two languages. Form similarity (dissimilar versus similar), time (first round of testing versus second round of testing) and age were included as predictor variables in both models.

Additionally, an interaction between form similarity and time was included in both models, to see if form similarity effects significantly changed over time. All analyses were carried out in R (R Core Team, 2019), using the lme4 package (Bates et al., 2015). In both models, orthogonal sum-to-zero contrast coding was applied to the binary predictor variables (i.e. form similarity and time) and the continuous predictor age was mean centered. We aimed to keep both models as fully specified as possible by including random intercepts for participants and items (Barr et al., 2013), this enabled us to report on the maximal random effect structure supported by the data (Jaeger, 2009). We assessed the statistical significance of the predictors using 95% Wald confidence intervals (Agresti & Coull, 1998).

5.4 Results

5.4.1 Receptive vocabulary

First, we investigated whether form similarity effects could be detected in receptive vocabulary, and if so, if these effects changed over time. Violin plots of children's scores on form dissimilar versus form similar items of the PPVT in the first and second rounds of testing are presented in Figure 5.2 and 5.3. The violin plots visualize the distribution of the correctness probabilities for the form similar and the form dissimilar items. The red dots indicate the overall group mean. The outcomes of the generalized mixed effects model on the English receptive vocabulary scores of the PPVT are demonstrated in Table 5.3.

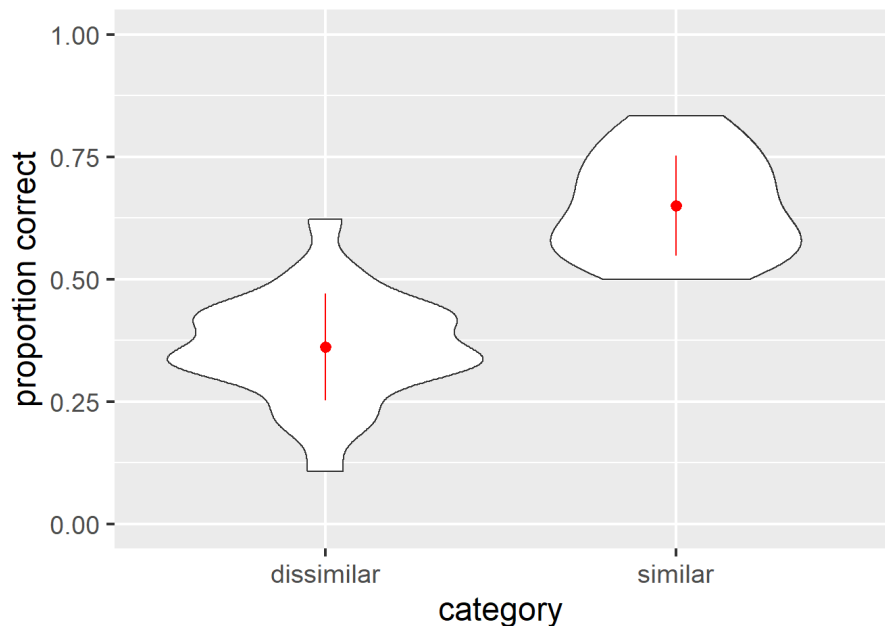


Figure 5.2 Violin plot of children's scores on form dissimilar vs form similar items of the PPVT (receptive vocabulary) in the first round of testing

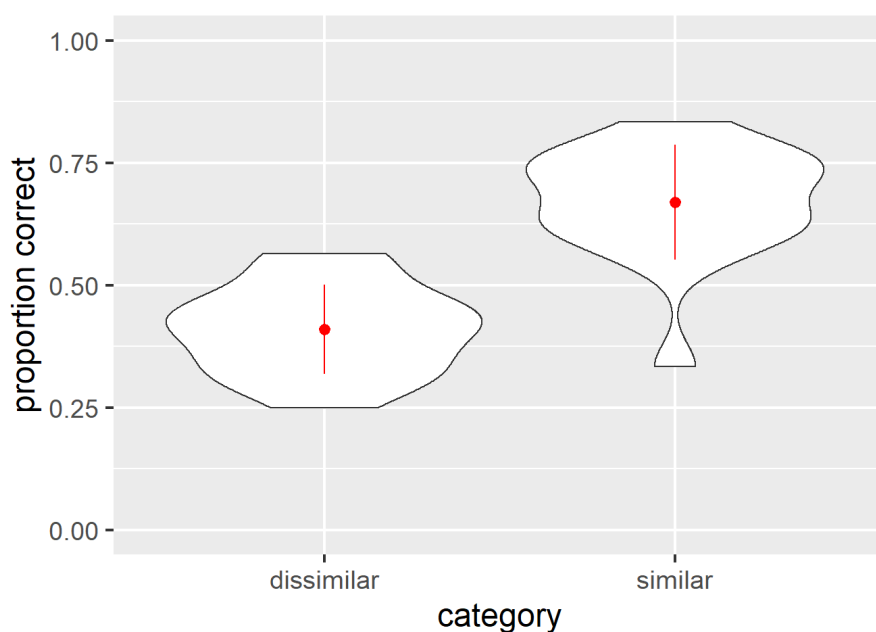


Figure 5.3 Violin plot of children's scores on form dissimilar vs form similar items of the PPVT (receptive vocabulary) in the second round of testing

Table 5.3 Outcomes of the generalized mixed effect model on the PPVT scores (receptive vocabulary)

| Predictors | Odds ratio | 95% Wald CI for OR | <i>z</i> value | <i>p</i> |
|-------------------------------|------------|-----------------------|----------------|----------|
| <i>Form similarity</i> | 2.09 | 1.09 – 3.84 | 2.242 | 0.0249 |
| <i>Time</i> | 1.01 | 0.76 – 1.20 | -0.411 | 0.6808 |
| <i>Age</i> | 1.08 | 1.06 – 1.11 | 6.429 | < 0.001 |
| <i>Form similarity * time</i> | 0.82 | 0.64 – 1.22 | -0.743 | 0.4572 |

For receptive vocabulary, a significant main effect for form similarity was found (OR = 2.09, 95% Wald CI for OR = [1.09, 3.84], $z = 2.424$, $p = 0.0249$) indicating that the odds for a correct answer were significantly greater in form similar items

than in form dissimilar items. Additionally, the significant main effect for age indicates that as children got older, the odds to score correctly got greater ($OR = 1.08$, 95% Wald CI for $OR = [1.06, 1.11]$, $\chi = 6.429$, $p < 0.001$).

With regards to differences between the first and second round of testing and changes over time in receptive vocabulary, no significant main effect for time was found ($OR = 1.01$, 95% Wald CI for $OR = [0.76, 1.20]$, $\chi = -0.411$, $p < 0.6808$), suggesting that the odds to score correct were not significantly greater during the second round of testing. Also, no significant interaction effect between form similarity and time was found ($OR = 0.82$, 95% Wald CI for $OR = [0.64, 1.22]$, $\chi = -0.743$, $p = 0.4572$), indicating that the effect of form similarity in receptive vocabulary neither increased or decreased over time.

5.4.2 Translation equivalents

For expressive vocabulary, we investigated whether form similarity plays a role in the acquisition of translation equivalents, and if so, if these effects changed over time. Figure 5.4 and 5.5 depict two violin plots of children's scores on form dissimilar versus form similar translation equivalents in the two rounds of testing. Again, the violin plots visualize the distribution of the correctness probabilities for the form similar and the form dissimilar items and the red dots represent the overall group mean. Table 5.4 presents the outcomes of the generalized mixed effects model on the translation equivalents data.

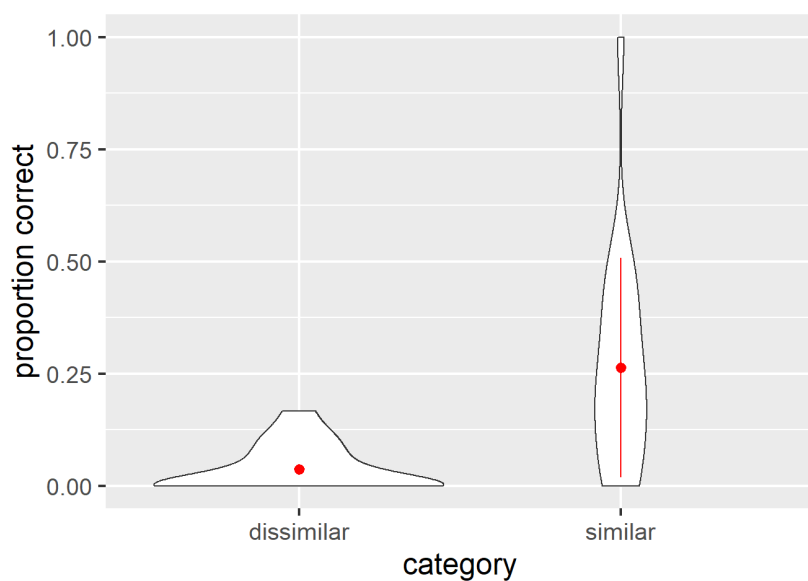


Figure 5.4 Violin plots of children's scores on form dissimilar vs form similar translation equivalents (in expressive vocabulary) in the first round of testing

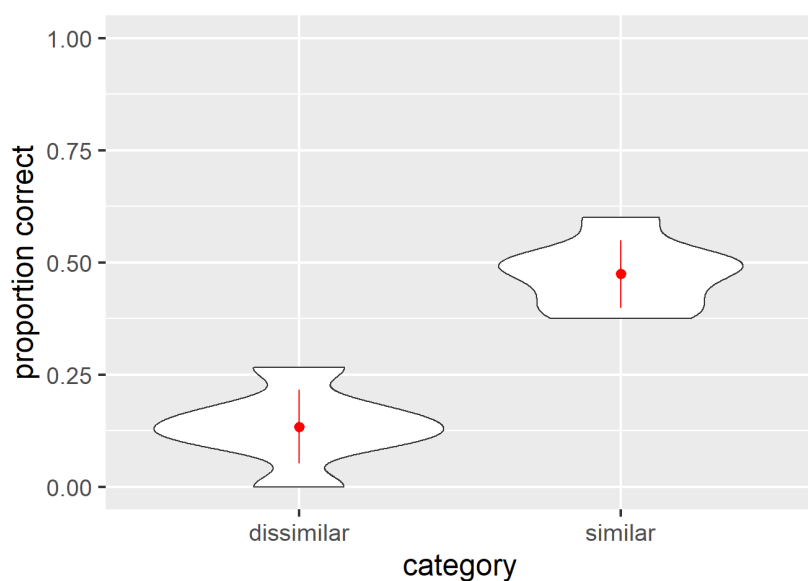


Figure 5.5 Violin plots of children's scores on form dissimilar vs form similar translation equivalents (in expressive vocabulary) in the second round of testing

Table 5.4 Outcomes of the generalized mixed effects model on the translation equivalents (in expressive vocabulary)

| Predictors | Odds ratio | 95% Wald CI for OR | z value | p |
|-------------------------------|------------|--------------------|-----------|---------|
| <i>Form similarity</i> | 14.26 | 1.24 – 163.46 | 2.135 | 0.03274 |
| <i>Time</i> | 2.83 | 1.06 – 7.57 | 2.074 | 0.03810 |
| <i>Age</i> | 1.11 | 1.002 – 1.23 | 2.004 | 0.04512 |
| <i>Form similarity * time</i> | 0.95 | 0.26 – 3.55 | -0.070 | 0.94418 |

Similar to the model on the receptive vocabulary scores, the model on the translation equivalents in expressive vocabulary found a significant main effect for form similarity. The model estimates that the odds to score correct on a form similar translation equivalent is 14.26 greater than the odds to score correct on a form dissimilar translation equivalent ($OR = 14.26$, 95% Wald CI for OR = [1.24, 163.46], $z = 2.135$, $p = 0.03274$). Again, a significant main effect for age was found ($OR = 1.11$, 95% Wald CI for OR = [1.002, 1.23], $z = 2.004$, $p = 0.04512$), indicating that as children got older, the odds to score correct increased.

With regards to differences between the first and second round of testing and changes over time in expressive vocabulary, the model detected a significant main effect for time ($OR = 2.83$, 95% Wald CI for OR = [1.06, 7.57], $z = 2.074$, $p = 0.03810$), suggesting that the odds to score correct were significantly greater during the second round of testing. Similar to the model on receptive vocabulary scores, the model on translation equivalents in expressive vocabulary did not detect a significant interaction effect between form similarity and time ($OR = 0.95$, 95% Wald CI for OR = [0.26, 3.55], $z = -0.070$, $p = 0.94418$), indicating that the effect of form similarity in expressive vocabulary neither increased or decreased over time.

5.5 Discussion

The main aim of this study was to further unravel the effects of form similarity on the early lexical development of two- and three-year-old children learning English as a foreign language at Dutch-English bilingual ECEC, by focusing on word learning in the weaker language (English). More specifically, we investigated whether form similarity effects could be spotted in the acquisition of English receptive vocabulary of children who do not receive much exposure to English, as well as in expressive vocabulary in the acquisition of Dutch-English translation equivalents.

Results revealed form similarity effects in English receptive vocabulary as well as expressive vocabulary in terms of translation equivalents, suggesting that form similarity indeed plays a role in word learning in the weaker language at such a young age. This is in line with studies that showed that form similarity effects exist in adult bilingual speakers (De Groot et al., 2002; de Groot & Kroll, 1997; Judith F Kroll & Stewart, 1994; van Hell & de Groot, 1998) and in (un)balanced bilingual children (Bosch & Ramon-Casas, 2014; Bosma et al., 2019; Gampe et al., 2021; Hemsley et al., 2013; Schelletter, 2002). Whereas previous studies on form similarity effects in such young children worked with indirect measures such as parental reports and spontaneous speech analysis, this study used vocabulary tasks that directly assessed children's receptive and expressive vocabulary skills. In doing so, we provided more direct and solid evidence that form similarity effects also exist in toddlers who are not fully fledged bilinguals.

More specifically, this study showed that form similarity also plays a role in the acquisition of the weaker language in particular: we detected these effects in a group of children that did not grow up simultaneously bilingual at home, but that was acquiring English as a foreign language at Dutch-English bilingual daycare. In addition, we found these effects in both receptive and expressive vocabulary: this contradicts the expectation that it could maybe only be detected

in receptive vocabulary as these children are still relatively at the beginning of their language acquisition process (Hemsley et al., 2013). Our findings thus suggest that toddlers who are less frequently exposed to one language use their more developed, stronger language to make sense of the weaker one in both receptive as expressive vocabulary already early on in the L2 language acquisition process.

The results further revealed that the form similarity effects did not significantly change over time, as no significant interaction effect between form similarity and time was found for receptive vocabulary, nor expressive vocabulary in terms of translation equivalents. This suggests that the form similarity effects that are already present in the beginning stages of L2 acquisition in such a young age do not become more (or less) persistent as time goes on.

Does knowing a form similar word in Dutch then actually have a facilitating effect on learning a word in English in this age group? The results of this study vis-à-vis the acquisition of Dutch-English translation equivalents in expressive vocabulary do seem to suggest that this is the case. By assessing translation equivalents in both languages, we directly measured whether participants had learned the word in both Dutch and English. Still, it is worth bearing in mind that we did not investigate at which point in time the children had acquired the forms in Dutch and in English. Because of this, we cannot be entirely sure as to whether children had first acquired the Dutch word before they acquired the English equivalent, and therefore we cannot definitely state that knowing a form similar Dutch word *facilitates* word learning in the weaker language.

However, as all children in this study were Dutch-dominant language learners, it would be logical to assume that children acquired the Dutch forms before the English ones. Additionally, we conducted post-hoc analyses on the 70 translation equivalent items to which participants only knew the answer in Dutch during the first round of testing. These analyses revealed that the same

participants correctly responded in both Dutch and English to 20 of these items during the second round of testing. To the other 50 items, participants again only knew the response in Dutch ($N = 45$) or neither in Dutch nor English ($N = 5$). This indicates that the acquisition of words in Dutch indeed precedes the acquisition of these words in English, thus making the facilitating effect in expressive vocabulary seem more probable.

For receptive vocabulary however, the evidence for the facilitating effect is not as strong, as we only measured whether children had acquired the words in English (and not in Dutch). Still, since we did find an effect of form similarity on the acquisition of the English words, and on the acquisition of translation equivalents in expressive vocabulary, it could be expected that the same holds true for the acquisition of translation equivalents in receptive vocabulary. Future research should investigate this more thoroughly.

In this study we opted for a division between two categories (form similar versus form dissimilar) based on the items' Normalized Levenshtein distances as a way to operationalize form similarity. The most important limitation of this study lies in the fact that we created these two categories on the basis of a cutoff point that was chosen intuitively: all items having a NLD lower than 0.672 were classified as dissimilar, whereas all items having a NLD higher than 0.672 were classified as similar. Even though use of Levenshtein distances allowed us to operationalize form similarity in an objective fashion, there are no rules as to when a noun can still be categorized as form similar or dissimilar on the basis of these Levenshtein distances. It would be interesting to look into this issue in future research. Also, we agree that it is undesirable to set a cutoff on mere intuition, however we believe that we have done so on good judgment. Still, future research should determine whether our findings still hold if form similarity would have been operationalized in a different way instead of on the basis of an automated calculation by means of an algorithm as used in this study.

For example, form similarity could also have been operationalized on the basis of speaker judgments or on the basis of the predictability of the changes in phonological structures, so-called phonological correspondence rules between languages (Höder, 2014). According to Höder (2014), formal similarities between lexical constructions are dependent on phonological correspondences that in some cases are more predictable than in others. For example, a noun categorized as form dissimilar in this study such as the English *shoe* (/ʃu/), with its Dutch counterpart *schoen* (/sxun/), would score high in terms of predictability: the change from the Dutch /sx/ to the English /ʃ/ is a frequent one (e.g. Dutch *schouder* /sxaudər/ and the English *shoulder* /ʃəʊldə/) as well as the omission of the word-final /n/ (e.g. Dutch *teen* /ten/ and the English *toe* /toʊ/). It could be that children who are exposed to English might pick up on these phonological correspondence rules, which in turn might also have a facilitative effect on word learning: this way, children might be able to make predictions as to what English counterpart of a Dutch word might be in expressive vocabulary, or what the meaning of an English word is by deducing its Dutch equivalent by means of these correspondence rules.

However, we believe that these phonological correspondence rules only come into play later on, as children first need to be exposed to both languages for a longer period of time before they can pick up on these phonological correspondences. Therefore, for the purpose of this study with such a young group of children that was being tested in their weaker language, we do not think that this operationalization of form similarity would have been suitable. Still, it might be interesting for future research to investigate how such rules develop and affect acquisition. Also, these phonological correspondence rules might offer some interesting viewpoints with regards to form similarity research in older children who are further down the road of bilingual language acquisition. Needless to say, form similarity can be operationalized in many different ways, some of which we believe will provide fruitful directions for further research.

In addition, it should be noted that the group of children that participated in our study were toddlers attending Dutch-English bilingual ECEC acquiring English as a foreign language. All children participating in this study were thus Dutch-dominant language learners, but still varied in how often they were exposed to English (ranging from 1% to 25% of the week), making this a heterogeneous group in terms of language learning: whereas children on the one end of the spectrum could almost be classified as being unbalanced bilinguals, children on the other end could be classified as being more or less monolingual. It would be interesting to see if the same effects for form similarity on word learning in the weaker language still hold if a more homogeneous group was tested in terms of language dominance, such as in the case of a group consisting of unbalanced bilinguals only (25%-75%) or a group of children that was only exposed to English from 1% to 10% of the week.

In this study, we classified Dutch as being the stronger language and English being the weaker one on the basis of language exposure. However, we acknowledge that we could have also made this classification on the basis of language proficiency. In addition to that, what is defined as the stronger or weaker language could be different across domains and situations (Baker, 2011). Nevertheless, we believe that for this particular group of participants, language exposure was the best way to determine which language was the weaker one, as participants in our study were relatively young (two- and three-years-old) (Unsworth et al., 2018). Additionally, we do not think that in this group of participants there would be a difference in language dominance across domains, since all participants were young English as a foreign language learners. Having said that, it would be interesting to see how language dominance in different situations and domains relate to the observed effects of form similarity in word learning in older bilingual populations.

All in all, results of our study provided evidence for an interplay between languages in children's early lexical development. More specifically, it showed

that form similarity effects exist in toddlers acquiring English as a foreign language in Dutch-English bilingual daycare centers, and that form similarity might even facilitate word learning in the weaker language with regards to expressive vocabulary. Whether the same holds true for receptive vocabulary remains to be seen, as we did not assess the acquisition of translation equivalents in receptive vocabulary. Future research should determine whether the acquisition of translation equivalents in receptive vocabulary are also conducive to form similarity effects.

Chapter 6

Discussion

This dissertation was concerned with the implementation and consequences of bilingual ECEC in the Netherlands. The chapters presented in this dissertation together serve to answer these broader research questions:

- (1) What is the sociolinguistic, educational and sociopolitical context in which bilingual ECEC in the Netherlands transpired?
- (2) How is bilingual ECEC implemented and carried out, and how is this linked to the sociolinguistic, educational and sociopolitical context in which bilingual ECEC is embedded?
- (3) What are the consequences of the presence of two languages in bilingual ECEC for (1) the actual practice and use of Dutch and English in one classroom, and (2) for how Dutch and English affect each other structurally?

In investigating these different aspects of bilingual ECEC, this dissertation was set out to arrive at a broader understanding of the implementation of bilingual ECEC in practice. This chapter provides a summary and synthesis of the individual studies described in this dissertation, by discussing the findings in relation to the three research questions stated above. At the end of this chapter, we reflect upon the possible benefits of bilingual ECEC, as well as upon the question whether an early start in language acquisition is better than a late one.

6.1 The sociolinguistic, educational and sociopolitical context

In chapter 2, we aimed to unravel the underlying ideologies of the initiative to introduce Dutch-English bilingual ECEC. By analyzing governmental policy documents as well as language policies of the participating daycare centers and questionnaires for parents and teachers, we gained further insight into this initiative's sociolinguistic, educational and sociopolitical context.

Chapter 2 discussed that with regards to the sociolinguistic and sociopolitical context, both Dutch and English can be categorized as highly prestigious languages in the Netherlands. Whereas Dutch is the majority language, English also fulfills a prominent position in Dutch society (Edwards, 2016; Nortier, 2011). The English language is entrenched in Dutch society in various ways. For example, it is often used as a working language or second language (Koninklijke Nederlandse Academie van Wetenschappen, 2018) and some even claim that it could be considered a national second language (Ulrich Ammon & McConnell, 2002). As a result, it is often believed that knowledge of English is beneficial to one's career, as it is considered essential in Dutch students' (future) work lives, both nationally and internationally. In addition, English is a language that is often used as an identity marker, an expression of status and as a symbol of overt (e.g. as language of education) as well as covert prestige (e.g. via social media) (Edwards, 2016; Peterson, 2019).

Chapter 2 also discussed how the English language plays a big role in the Dutch educational system. We illustrated how the English language keeps gaining ground in higher, secondary and primary education (Admiraal et al., 2006; Edwards, 2016; Nuffic, 2018, 2021; Wächter & Maiworm, 2008). Especially in secondary education, the introduction of Dutch-English bilingual curricula was met with little criticism as this was mainly a bottom-up decision driven by parents

and teachers who believed that proficiency in English would benefit children's education and socioeconomic status (Edwards, 2016). Also in primary education, the increase in English foreign language teaching as well as the initiative to introduce bilingual curricula in 2013 was mainly driven by parental demand (Edwards, 2016). Chapter 2 illustrated that the introduction of Dutch-English bilingual education into the Dutch ECEC system was the last step to take to effectively create a fully bilingual track in the Dutch educational system, running from zero to eighteen. The high prestige of English was also illustrated by the fact that even though in this project participating daycare centers were allowed to use English, French or German as an additional language next to Dutch, all of them opted for English.

A discrepancy was revealed between the societal and educational aims of bilingual ECEC as formulated by the Dutch government on the one hand, and the aims of some of the organizations and the majority of the parents in our questionnaire on the other. These aims corresponded with two different ideologies. The Dutch government's intentions appeared to be in line with the so-called prestigious strong ideology that we outlined: the official request as formulated by the Dutch government to announce a pilot study on bilingual ECEC seemed to be targeted towards Dutch-speaking children, for which the aim is to acquire an additional second language of power (explicitly stated to be English), because it is believed that it will benefit their future. Before we go into the other competing ideologies that were revealed in chapter 2, it is important to first go over the characteristics of the audience that visited bilingual ECEC as these two aspects seemed to be related.

While the Dutch government appeared to envisage a Dutch-speaking target audience, results from the parental questionnaire reported in chapter 2 showed that, in reality, the audience mainly consisted of multilingual families. The majority of children visiting bilingual ECEC grew up in a multilingual household (72%), meaning that they grew up in an environment where more than

one language was spoken. Some of the children grew up in multilingual environments where one or two other languages were spoken next to Dutch (35%), and approximately 37% of the children grew up in a household where no Dutch was spoken at all, indicating that these children acquired Dutch as a second language at bilingual ECEC. Only 22% of the children grew up in a monolingual Dutch-speaking family. It should be noted that enrolment rates with regards to home language situations differed per organization and geographical location. While some were primarily visited by Dutch-speaking children (these organizations were mostly located outside of the Randstad), the majority of organizations (that were mostly located in the Randstad) were visited by a multilingual international audience. As a result, the policy plans of the ECEC centers primarily visited by Dutch-speaking children resonated with the prestigious strong motivations of the Dutch government. However, policy documents from ECEC centers visited by an international audience were mainly focused on exposing non-Dutch speaking children to Dutch, revealing two competing underlying ideologies.

Furthermore, results from chapter 2 on parents' reasons for placing their child in bilingual ECEC also highlighted the discrepancy between the Dutch government's aim and ideology and that of bilingual ECEC organizations visited by a multilingual audience. Approximately one-third of the parents indicated that they did not choose this daycare center for its bilingual nature but rather for practical reasons, such as proximity to the home. The parents who did choose the daycare center for its bilingual input gave a wide variety of reasons for doing so, the most common reason being that they wanted to preserve their English heritage (19%). This underlines the contradiction between the governments' main aim (focusing on the acquisition of the English language) and the implementation of bilingual ECEC in practice.

In short, with regards to the sociolinguistic, educational and sociopolitical context we found that: (1) bilingual ECEC involved two highly

prestigious languages, as Dutch is the majority language and knowledge of English is considered to be beneficial to children's future (educational careers); (2) the high prestige of English is reflected in the fact that the introduction of bilingual ECEC was the final step to take to create a fully bilingual educational track running from zero to eighteen; (3) there was a large discrepancy between the government's societal and educational aims and the aims of some of the daycare centers participating in the MIND project.

6.2 The links between context and implementation of bilingual ECEC

To delve further into the relationships between the sociolinguistic, educational and sociopolitical context and the implementation of bilingual ECEC in practice, chapter 2 analyzed how bilingual ECEC was implemented at all daycare centers by investigating *de jure* management (explicit plannings and interventions) and *de facto* management (implicit social practices) (Spolsky, 2004).

Results on *de jure* management showed that the ten participating daycare center organizations had different ways of implementing bilingual input into their daily routines and that these different ways corresponded with their audiences. According to their policy plans, six out of ten ECEC organizations implemented the one person, one language (OPOL) principle (Ronjat, 1913) where at all times during the day two teachers were present, of whom one teacher only spoke Dutch and the other only spoke English. This typically resulted in a fifty-fifty language distribution, responding to the so-called *strong forms of bilingual education* as formulated by Baker (2011). One organization opted for an approach where two teachers were present, with one speaking only Dutch, the other both Dutch and English, resulting in fewer hours of exposure to English. The other three daycare organizations opted for *weaker* forms of prestigious bilingual education

by adopting early English language methods and fewer hours of exposure on fixed times of the day. In these organizations, English was not necessarily used as a medium of instruction, but rather as a separate subject on its own. Monolingual Dutch children mostly visited these weaker forms of bilingual education while the multilingual audience mostly visited organizations where strong forms of bilingual education were implemented, revealing an interplay between audience and organization of bilingual input.

However, results from chapter 2 further showed that the policy documents from organizations did not always necessarily reflect the true state of affairs. Results on *de facto* management by means of a teacher questionnaire revealed that the majority of the OPOL-teachers (25 out of 42) indicated to switch between languages, illustrating that some teachers are stricter than others at sticking to the OPOL-principle. The main reason for teachers to switch languages was usually for children to be able to understand them, to comfort children or to correct them. This fits well with previous studies on language switching which showed that teachers switch languages if they feel that the child's wellbeing is at risk (Caporal-Ebersold & Young, 2016).

The results from the classroom observations reported in chapter 3 corroborate the finding that OPOL-teachers sometimes switch languages in conversation. This chapter was partly concerned with the discourse strategies teachers employed in interaction when a child spoke in another language than the target language (following Lanza, 2004). Results showed that both Dutch and English-speaking teachers more often used discourse strategies that created bilingual contexts where the use of other languages was allowed. Strategies placed on the monolingual end of the spectrum that created contexts where only the use of the target language was permitted, were used rarely. The results furthermore suggested that teachers also sometimes codeswitched (15% in Dutch observations, 20% in English observations), not only allowing other languages to be used by the children, but also actively using them themselves. However,

the degree to which teachers codeswitched differed, as one teacher did not codeswitch at all.

These results underline that there was a difference between how language policies were formulated on paper and how they were carried out in practice by teachers and therefore show that the language models and teacher practices that are applied in bilingual ECEC are not necessarily static but rather dynamic (Schwartz & Palviainen, 2016). Various teachers working at OPOL-organizations had their own ways of navigating two languages in the classroom by sometimes switching languages whereas other teachers working at the same organizations did not. Teachers showed flexibility in their approaches to respond to children's emotional and educational needs, showing that they sometimes placed the children's needs above the OPOL language models that were supposed to be carried out.

Additionally, results highlighted how strongly related the sociolinguistic, sociopolitical and educational contexts were to the realization and implementation of bilingual ECEC as the two languages involved and their prestige, the teachers and (intended) target audiences all had consequences for how the language models were implemented and carried out. This shows how ideologies and policies on the macro level (e.g. government) interact with attitudes and policies on the micro level (e.g. organizations, teachers and parents) and how all these different factors can influence each other, resulting in different outcomes of bilingual ECEC. This also explains why in chapter 2 we were unable to qualify bilingual ECEC in the Netherlands as a whole as being only one of the different forms of bilingual education as formulated by Baker (2011), as it had different outcomes and appearances as a consequence of the interplay between the different contextual factors.

This interplay between contextual factors and implementation and realization of bilingual ECEC suggests that if bilingual ECEC were to be implemented on a wider scale in the Netherlands, it could have different

realizations and outcomes than the ones described in this dissertation, as differences in these contextual factors could lead to different outcomes. For example, chapter 2 showed that the parents attending the daycare center organizations in the MIND project were highly educated, as the majority of parents completed university (82%) and 8% of parents completed their PhD. This suggests that these Dutch-English bilingual daycare centers attracted a highly educated, international audience, which echoes concerns about bilingual education being elitist (Sieben & van Ginderen, 2016; Sierens & Van Avermaet, 2014). The question remains whether these organizations decided to implement a bilingual curriculum because of their highly educated audience, or if they only attracted this highly educated audience after implementing Dutch-English bilingual input. Whereas two organizations explicitly stated to have implemented bilingual input because of their (highly educated) international audience, for the other organizations this remains unclear. Nevertheless, the findings illustrate that bilingual ECEC involving two languages of power, also often involves educational elites. Implementation of Dutch-English ECEC on a wider scale could possibly change that, as well as the introduction of bilingual ECEC with less prestigious additional languages. Less prestigious languages than English could possibly attract different and less elitist target audiences, and could also be linked to different underlying ideologies. For example, the main aim of bilingual ECEC could then be to facilitate acquisition of the prestigious majority language (Dutch) (Baker, 2011). This, in turn, can then have an effect on the language models that are implemented (Schwartz & Palviainen, 2016).

6.3 Consequences for Dutch and English

Apart from exploring the relationships between contextual factors and the realization of bilingual ECEC, this dissertation further investigated what the consequences for bilingual ECEC were for the two languages in question: Dutch

and English. More specifically, it investigated how two languages in one classroom affect each other with regards to: (1) the actual practice of using and navigating two languages in one classroom, and (2) the (cross)linguistic level by investigating the interplay between Dutch and English.

Chapter 3 was concerned with the first aspect by exploring how bilingual input took shape. It investigated how teachers created language learning opportunities through informal interaction in Dutch and English. Results showed that the type of input in English that is being offered at bilingual ECEC is slightly different than the Dutch input, as Dutch-speaking teachers made more use of teaching techniques than English-speaking teachers. Also, the types of teaching techniques that were employed in the two languages were different: whereas English-speaking teachers made more use of modelling strategies, Dutch-speaking teachers used more eliciting strategies. Additionally, English-speaking teachers produced more utterances that were part of songs and routines than the Dutch-speaking teachers.

In chapter 3 we discussed that this finding fits well with previous studies that have shown that songs and routines are used regularly in early L2 classrooms (Albaladejo Albaladejo et al., 2018; Elvin et al., 2007; Fleta Guillén, 2018; Lugossy, 2018) as it has been found that recurring activities with fixed forms and content such as songs and routines can be useful in developing competence in the L2 and foster language learning because of its predictability (Björk-Willén, 2008; Fleta Guillén, 2018; Lugossy, 2018). This indicates that the type of English input offered at the participating bilingual ECEC centers resembled 'L2 input' more. Whereas Dutch input mostly takes place in conversation, English input is offered more through songs and routines such as morning greetings and lunch rituals. This difference in input was also reflected in the types of teaching techniques employed by teachers. Whilst Dutch teachers used more eliciting techniques, English-speakers made more use of modelling techniques. Modelling techniques can also be viewed more as being part of 'L2' input in the sense that

they present children with verbal models, making the language itself the central object of conversation. This is not the case with eliciting techniques, since these already presume knowledge of the language in question, as it requires a child to understand what is asked of them and requires a direct verbal reaction.

But what do these results ultimately say about the consequences of Dutch and English when they are both offered in one classroom? We believe that they show that English and Dutch both seem to take on different roles: English takes on the role of the foreign language, thus requiring input involving L2 strategies such as songs, routines and modelling techniques. Dutch takes on the role of the majority language, thus requiring input where at least some knowledge of the language is already assumed. This might be contradictory to the results presented in chapter 2, that showed that the majority of daycare organizations were mostly visited by an international multilingual audience, of which 37% of children acquired Dutch as a second language. Still, it is not entirely unexpected, since Dutch is the official national language of the Netherlands and English is not. Additionally, the finding could also be explained by the fact that in the English observations, more L2 learners of English (83%) were present as opposed to L2 learners of Dutch (63%) in the Dutch observations.

Also, we saw that the two languages in one classroom did not operate independently as children sometimes used in English conversations with Dutch-speaking teachers and the other way around. Similarly, Dutch-speaking teachers sometimes resorted to English and English-speaking teachers to Dutch. Whereas some might think that this is undesirable within the OPOL-approach as it could lead to confusion and disturb distinct separation of the languages (Cummins, 2008), we believe that the opposite could be true. Teachers indicated that they sometimes found it necessary to switch languages as they believed it could be beneficial to children's wellbeing and could otherwise be harmful to children if they were unable to comfort them or properly correct them. As we believe that children's wellbeing plays an important part in successful implementation of

bilingual ECEC and its effects on language development, we think that switching languages could be a useful tool. In this way, the use of one language might reinforce acquisition of the other and both languages can work together in creating an optimal learning environment that facilitates language learning where children feel comfortable.

In chapters 4 and 5, in which we investigated how the two languages might affect each other on a (cross)linguistic level, we found evidence that the two languages may indeed facilitate each other. In chapter 4 we explored the roles of variability (e.g. de Prada Pérez, 2019; Sánchez, 2006), overlap (e.g. Jansen et al., 1980) and language dominance (e.g. van Dijk et al., 2021) in relation to the occurrence (or absence) of crosslinguistic influence in the acquisition of Dutch pluralization in two-and-three-year-old children attending bilingual ECEC. We expected crosslinguistic influence to manifest itself in terms of a preference for the *-s* affix in the form of *-s* overgeneralizations in contexts where the *-en* affix was required, due to partial overlap between English and Dutch pluralization. We especially expected this in the condition where there was high variability (in terms of rhyme and sonorancy predicting different affixes). However, this expectation was not borne out.

In fact, we found the opposite: the results showed that children had a clear preference for *-en*, such that they overgeneralized this affix to plurals where *-s* was required. However, we also found a significant negative interaction effect between target and amount of English exposure that indicated that the odds of *-en* overgeneralization decreased as the amount of English input increased. This finding suggests that more exposure to the English language facilitated correct production of the *-s* affix in children below the age of four. We proposed that this could be interpreted as a limited occurrence of crosslinguistic influence where more exposure to English does not lead to an abundance of *-s* overgeneralizations but instead possibly accelerates the acquisition and correct production of the *-s* affix, by reducing the number of *-en* overgeneralizations.

In chapter 5 we further explored the interplay between Dutch and English on a linguistic level by unraveling the effects of form similarity on early lexical development. Form similarity effects on word learning have previously been attested in studies on word learning in simultaneous bilingual children (e.g. Gampe et al., 2021; Hemsley et al., 2013). In chapter 5, we focused on word learning in the ‘weaker’ language (English) by two-and-three year old children acquiring English as a foreign language at bilingual ECEC. Results revealed form similarity effects in English receptive vocabulary and in expressive vocabulary in terms of translation equivalents.

More specifically, chapter 5 provided evidence that form similarity might even *facilitate* word learning in the weaker language with regards to expressive vocabulary as for expressive vocabulary we directly assessed the acquisition of translation equivalents in both Dutch and English. Whether the same holds true for receptive vocabulary remains to be seen as we did not assess the acquisition of translation equivalents in receptive vocabulary. Since we did find an effect of form similarity on the acquisition of the English words in receptive vocabulary, and on the acquisition of translation equivalents in expressive vocabulary, it could be expected that the same also holds true for the acquisition of translation equivalents in receptive vocabulary.

Similar to the findings from chapter 3 where we showed that the two languages can work together in creating an optimal learning environment that facilitates language learning, findings from chapter 4 and 5 show that the presence of one language in the classroom could possibly have a facilitative effect on the acquisition of the other. This has been found for the acquisition of the *-s* affix in Dutch pluralization, as increased English exposure decreased the odds to overgeneralize *-en*. Moreover, for word learning we showed that knowledge of form similar words in Dutch has a facilitative effect on word learning in English. This suggests that, rather than competing with each other, two languages in one classroom might work together to reinforce language learning by using their

similarities. This is contrary to worries that exposure to one language might come at the expense of competence in the other language (Leseman et al., 2009).

6.4 The earlier, the better?

In the introduction, we discussed the possible benefits of bilingual ECEC, as well as some concerns that exist regarding the implementation of bilingual input in ECEC. We highlighted that the increased interest in bilingual ECEC can mostly be attributed to the idea that young children can more easily and quickly learn foreign languages, which might be conducive to lifelong bilingualism. But we also noted that some worry that time spent in bilingual ECEC on one language might come at the expense of competence in the other. Even though the results of this dissertation do not allow us to make claims about long term effects, we do think that this thesis gives rise to reflect upon the aforementioned benefits of bilingual ECEC, and upon the question whether the earlier is indeed the better. Can bilingual ECEC indeed be a useful tool in fostering Dutch-English bilingualism?

In the timespan that we covered, our findings on the interplay between Dutch and English showed that, instead of having negative effects on the development of one another, the two languages might actually positively reinforce each other's development as has been previously stated by Cummins (2016). In addition, our longitudinal evaluation study (Verhagen et al., 2022) showed that the presence of English at ECEC has positive effects on the acquisition of English and does not slow down or hinder development of the Dutch language. Taken together, these findings suggest that bilingual ECEC as implemented in the Netherlands might be a useful tool in fostering long term Dutch-English bilingualism.

But is it? In the end, these results do not necessarily mean that the effects of bilingual ECEC will be long lasting. Previous studies that compared early starters with late starters in instructed settings found that late starting pupils

caught up with early starting pupils, even though the early starters received more hours of exposure than later starters (e.g. Burstall, 1975; Muñoz, 2011; Oller & Nagato, 1974; Pfenninger, 2014). Studies investigating the effects of foreign language teaching in primary schools in European countries also failed to show differences in attainment between pupils who started in primary school and pupils who started in secondary school (Low et al., 1995; Muñoz, 2011). More recently, a study conducted by Goriot (2019) in the Netherlands found mixed results regarding early starters versus late starters in the context of *vroeg vreemdetalenonderwijs* ‘early foreign language education’ in the Netherlands: early foreign language pupils in grade 5 (8-9 years old) did not perform better on English vocabulary tasks than their peers from mainstream schools, whereas pupils in grade 2 (5-6 years old) and grade 3 (6-7) did. With regards to long term effects, a study by Edelenbos (1990) in instructed settings did find an advantage of early starters at first (after three months) but this advantage disappeared after eight months. Similarly, a study by Genelot (1996) conducted in instructed settings in France found an advantage for early starters at first, which vanished after two years.

Thus, these studies conducted in instructed settings suggest that the long term effects of bilingual ECEC in the Netherlands are not self-evident. Whether or not an early start at ECEC actually has advantages in terms of acquisition of the English language over a late start (e.g. early foreign language teaching in primary school) is still disputable. Also, it should be noted that these studies investigated an early versus later start in instructed language settings. DeKeyser (2022) stated that when talking about age effects, one should always take into account the context in which a study is conducted, as age effects could differ between instructed and naturalistic language settings. Whether or not age effects can be found in bilingual ECEC thus remains an open question, as we think that it both has characteristics of a naturalistic setting (language learning

through informal interaction at a very young age) and a instructed setting (language learning in a classroom).

Do we believe then, that the introduction of Dutch-English bilingual ECEC in the Netherlands is desirable and useful? Bringing together the results of Verhagen et al.'s (2022) evaluation study and the results of this dissertation, we can state that bilingual ECEC does indeed have positive effects on children's development of the additional language (English), no negative effects on children's development of the majority language (Dutch) and that the two languages may work together and support each other in terms of form similarity effects. Because of this, we can state with some confidence that even though the long term effects and advantages of bilingual ECEC may well turn out to be limited, there is no harm in offering two languages from a young age.

Bilingual ECEC may also have other positive effects that make it worthwhile. After all, exposure to an additional language in bilingual ECEC does not necessarily only have an effect on language development. It also exposes children to a different culture (that comes along with the additional language) or even that of multiple different cultures: most of the bilingual ECEC organizations participating in the MIND project were visited by an international audience. In these cases, children were exposed to many different cultures, not only because of the additional language, but also because of the international group of children attending bilingual ECEC.

With regards to the links between exposure to different cultures and bilingual ECEC, Gerlich et al. (2010) found that children attending bilingual ECEC were aware of the existence of other languages and cultures around them and developed intercultural communicative competence at a young age. Children showed positive and open attitudes towards other cultures and cultural differences, had knowledge about their own and other cultures and used this knowledge to solve problems that arose in intercultural communication. Other studies showed that bilingual ECEC could also lead to a feeling of acceptance

and recognition of children with other language backgrounds (Alemi & Haeri, 2018; Alstad & Tkachenko, 2018). Thus, even though it is not yet clear whether or not bilingual ECEC actually has long term effects on language development, this does not mean that bilingual ECEC does not offer other possible gains that should be overlooked. However, since we are unable to draw firm conclusions with regards to its long term effects, we do believe that the possible benefits and long term advantages of bilingual ECEC with regards to language development should be approached with caution, especially since we do not know whether in this case the earlier is indeed the better.

6.5 Concluding remarks

All in all, in this dissertation, we provided an in-depth overview of bilingual ECEC in the Netherlands by approaching this matter from various perspectives. In doing so, we aimed to arrive at a broader understanding of the implementation of bilingual ECEC in practice. We showed that there was an interplay between contextual factors and implementation and realization of bilingual ECEC, as the organization of bilingual input often corresponded with the target audience. In addition, we revealed discrepancies on two levels: (1) between the Dutch government's underlying ideologies and those of some of the daycare centers, and (2) between *de jure* and *de facto* management. These results suggest that bilingual ECEC in the Netherlands does not have one specific outcome, but can have different outcomes as contextual factors can all influence each other, leading to different results.

In addition, we showed that the Dutch and English language both seem to fulfill and take on different roles in the classroom: English takes on the role of the foreign language, with input involving L2 strategies. Dutch takes on the role of the majority language, with input where some knowledge of the language is already assumed. Even though the two languages take on different roles, they

do not seem to operate independently as Dutch-speaking teachers sometimes resorted to English and English-speaking teachers to Dutch, if communication breakdowns occurred. With this, we showed that the presence of two languages in one classroom does not necessarily mean that one language comes at the expense of the other. Rather, we showed that the two languages can work instead together, support, and reinforce each other. This also applies to the acquisition of the Dutch plural and in the early lexical development of English: we demonstrated that knowledge of one language might facilitate learning in the other.

However, please note that research for this dissertation was conducted in a particular context, involving two highly prestigious languages and children from highly educated international families. Even though in this particular context we did not find any reason to assume that one language comes at the expense of the other and instead have found that both languages might reinforce one another, we are very aware that outcomes might look different if different languages and children were involved. Similarly, our results regarding crosslinguistic influence might have had different outcomes if we had investigated this in other areas of language acquisition than the acquisition of the Dutch plural and early lexical development. There may also be other advantages and disadvantages that come with bilingual ECEC that we were unable to detect because of the group of children included in our study and because of the language domains that we decided to focus on in this dissertation. Therefore, considerably more work is needed to determine the effects of bilingual ECEC that should include different languages, populations and that should focus on different language domains. We think it might be particularly interesting to see how bilingual ECEC plays out in children from lower educated families or to investigate what would happen if less prestigious languages are included. How would bilingual ECEC be implemented in this case, would bilingual ECEC have

any effects on language development of the less prestigious language, and can signs of crosslinguistic influence be spotted in these situations?

We do however still believe that the results of this dissertation show that the implementation of bilingual Dutch-English ECEC in the Netherlands is not something that needs to be feared, as we have found no evidence for the claim that time spent in bilingual ECEC on one language comes at the expense of the other. Rather, we found that the two languages are able to work together and to support one another. Whether bilingual ECEC has any long term effects on fostering Dutch-English bilingualism is a puzzle that needs further solving, as it is not yet clear whether acquiring a foreign language at ECEC leads to lasting proficiency. This does however not imply that bilingual ECEC does not serve any other use. After all, children get acquainted with other languages, cultures and – just as importantly – bilingual ECEC can be a lot of fun.

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Appendix

Appendix Chapter 4

1. Stimuli elicitation task

Table A1. Stimuli used in the elicitation task

| Type | Condition | Cognate | Target | Item |
|--------|---------------------------|---------|------------|----------------------|
| Filler | Trial item | - | - | Borden |
| Plural | Trial item | - | - | Bord onder de tafel |
| Filler | Preposition | - | <i>op</i> | Televisie op de kast |
| Plural | Same affix predicted | No | <i>-en</i> | Honden |
| Filler | Preposition | - | <i>aan</i> | Spiegel aan de muur |
| Plural | Same affix predicted | Yes | <i>-s</i> | Baby's |
| Filler | Preposition | - | <i>om</i> | Strik om de auto |
| Plural | Different affix predicted | No | <i>-en</i> | Stoelen |
| Filler | Preposition | - | <i>in</i> | Hond in de mand |
| Plural | Different affix predicted | Yes | <i>-s</i> | Robots |
| Filler | Preposition | - | <i>om</i> | Strik om het bedje |
| Plural | Same affix predicted | No | <i>-en</i> | Fietsen |
| Filler | Preposition | - | <i>op</i> | Beker op de tafel |
| Plural | Same affix predicted | Yes | <i>-s</i> | Lolly's |
| Filler | Preposition | - | <i>in</i> | Baby in het bedje |
| Plural | Different affix predicted | No | <i>-en</i> | Truien |
| Filler | Preposition | - | <i>aan</i> | Tas aan de kapstok |
| Plural | Different affix predicted | Yes | <i>-s</i> | T-shirts |
| Filler | Preposition | - | <i>in</i> | Hond in het bad |

Table A1. (Continued)

| Type | Condition | Cognate | Target | Item |
|--------|---------------------------|---------|------------|----------------------|
| Plural | Same affix predicted | Yes | <i>-en</i> | Bedden |
| Filler | Preposition | - | <i>om</i> | Ketting om de nek |
| Plural | Same affix predicted | No | <i>-s</i> | Auto's |
| Filler | Preposition | - | <i>aan</i> | Sjaal aan de kapstok |
| Plural | Different affix predicted | Yes | <i>-en</i> | Ballen |
| Filler | Preposition | - | <i>op</i> | Sticker op de kast |
| Plural | Different affix predicted | No | <i>-s</i> | Cadeau's |
| Filler | Preposition | - | <i>aan</i> | Klok aan de muur |
| Plural | Same affix predicted | Yes | <i>-en</i> | Lampen |
| Filler | Preposition | - | <i>in</i> | Beker in de kast |
| Plural | Same affix predicted | No | <i>-s</i> | Bekers |
| Filler | Preposition | - | <i>op</i> | Pleister op de arm |
| Plural | Different affix predicted | Yes | <i>-en</i> | Wielen |
| Filler | Preposition | - | <i>om</i> | Sjaal om de nek |
| Plural | Different affix predicted | No | <i>-s</i> | Paraplu's |

2. The follow-up measurement

In addition to the first round of testing reported in Chapter 4, we also conducted a follow-up measurement: eight months after the first measurement round, 42 ($F = 22$, $M = 20$, mean age = 3;8 years⁹) out of the 95 children participated in a follow-up measurement in which they completed the same task. Out of these 42

⁹ Even though the follow-up measurement took place eight months later, the mean ages between the first and second round of testing are only two months apart. This is due to the fact that many children that participated in the first round of testing were between three and four years old. By the time the follow-up measurement took place, many of these children left daycare for primary school. Because of this, the mean age during the follow-up measurement is not that different from the first round of testing.

children, 26 grew up hearing only the Dutch language at home, 15 children both Dutch and English and one child grew up hearing only English at home.

Originally, this follow-up measurement was included to investigate the effects of variability and language dominance on the acquisition of the Dutch plural over time. However, since less than half of the children that participated in the first round also participated in the second, it was impossible to run statistical models on the data including the second measurement round due to low statistical power. Because of this, we were unable to draw any conclusions on the basis of this follow-up measurement and give an answer to the question whether the effects of variability or language dominance on the acquisition of the Dutch plural increased or decreased over time. Despite this, we believe that the results from the follow-up measurement may still bring some interesting insights, since it did allow us to analyze changes in preferences in individual children for certain affixes over time. In this appendix we will therefore present the descriptive results with regards to response types in the follow-up measurement, as well as results that describe the overgeneralizations made and the changes over time.

2.1 Response types in the follow-up measurement

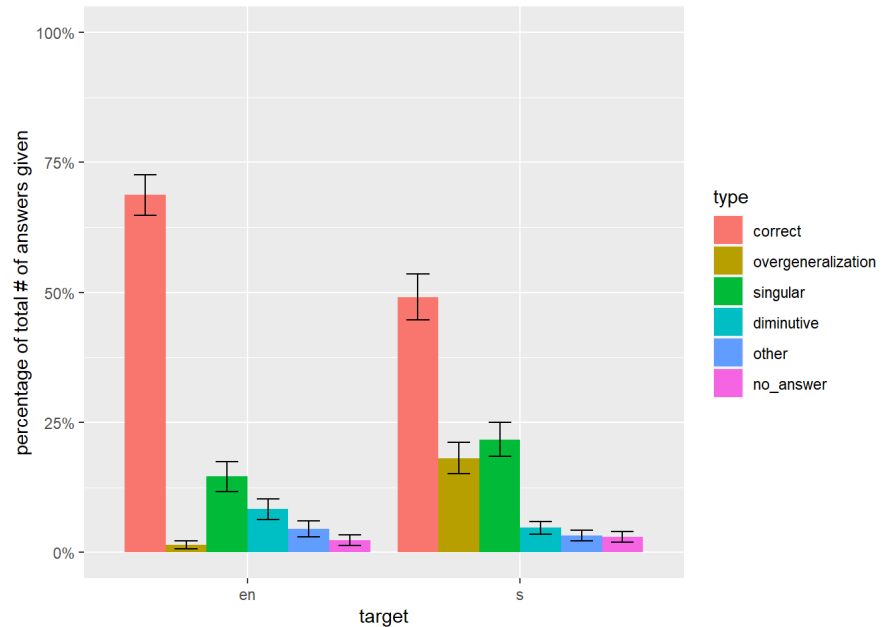


Figure A1. Response types in follow-up measurement

Responses to items in the follow-up measurement are similar to the ones in the first measurement, as depicted in Figure A1. Again on average, overgeneralization of the *-en* affix (18.2%) was much more frequent than overgeneralization of the *-s* affix (1.5%), and a substantial amount of responses consisted of singular forms of the nouns (on average 14.6% in items targeting *-en*, 21.7% in items targeting *-s*).

2.2 Overgeneralizations and changes over time

Also for the follow-up measurement we further investigated, on an individual level, how many children overgeneralized and if so, if they overgeneralized both affixes or just one. Table A2 shows the types of overgeneralizations children

made in the first and second measurement round, and how many children made those types of overgeneralizations.

Table A2. Types of overgeneralizations in the first measurement round

| Type of overgeneralization | # of children first round (N = 95) | # of children second round (N = 42) |
|------------------------------|------------------------------------|-------------------------------------|
| <i>-en only</i> | 44 | 28 |
| <i>-s only</i> | 12 | 1 |
| <i>both affixes</i> | 2 | 1 |
| <i>no overgeneralization</i> | 37 | 12 |

In both measurement rounds, a high number of children only overgeneralized the *-en* affix (44/95 in the first round, 28/42 in the second), and relatively few only overgeneralized the *-s* affix (12/95 in the first round, 1/42 in the second). Only few children overgeneralized both affixes (2/95 in the first round, 1/42 in the second), showing that many children did have a strong preference for one affix. It should be noted that out of the 12 children that only overgeneralized *-s* during the first round of testing, eight children were exposed to the English language at home (four out of eight were exposed to both Dutch and English at home). The same goes for the one child that only overgeneralized *-s* during the second measurement round, this child also was exposed to both Dutch and English at home. Figure A2 depicts changes in overgeneralizations over time.

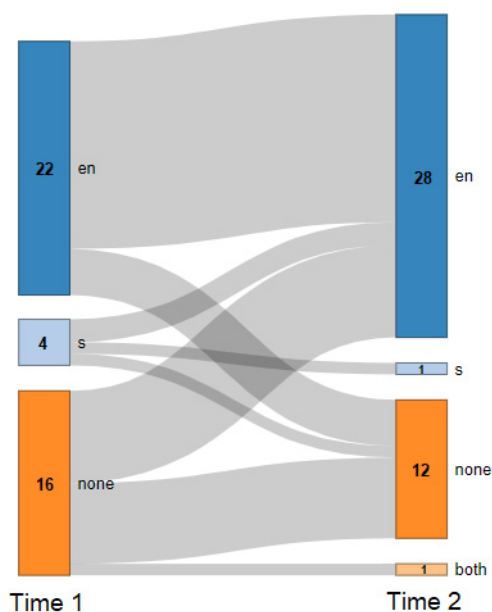


Figure A2. Changes in overgeneralizations over time

With regards to a change of preference for a certain affix over time, 26 out of 42 children that participated in both rounds of testing did not change their preference at all. Four out of 42 children only overgeneralized the *-en* affix during the first round of testing, but did not make any overgeneralizations during the second. Eight children did not overgeneralize at all during the first round of testing, but only made *-en* overgeneralizations during the second. The three children that only overgeneralized the *-s* affix during the first measurement round, did not overgeneralize the *-s* affix anymore during the second: they either only made *-en* overgeneralizations instead (2/42) or did not overgeneralize at all (1/42). Lastly, one child first did not make any overgeneralizations during the first round, but overgeneralized both affixes during the second. All in all, half of the children did not change their preference over time, but if children did change, it mostly was in the direction of the *-en* affix (10/42): during the second round of testing, *-en* overgeneralizations were relatively more frequent than *-s*

overgeneralizations even though there were more target like responses in the second round of testing than in the first round of testing.

Summary

Two languages in daycare: An appraisal of bilingual early childhood education and care in the Netherlands

English is gaining ground in the Dutch educational system. Many secondary schools in the Netherlands offer bilingual programs, and also early foreign language teaching in primary schools is gaining popularity. This also goes for bilingual daycare. The Ministry of Social Affairs and Employment therefore initiated a large-scale study (called Project MIND: Meertaligheid in Dagopvang/Multilingualism in Daycare) to monitor the effects of bilingual daycare on children between the ages of zero and four. Ten different organizations, with nineteen locations, participated in the study. Daycare centers were allowed to use English for a maximum of 50% of the time and teachers were obliged to demonstrate at least B2 language proficiency as formulated by the Common European Framework of Reference for Languages.

As the main aim of project MIND was to determine the effects of bilingual ECEC on children's language development, a longitudinal research design was used to monitor children's language skills over time in both Dutch and English. From September 2018 to December 2020, four measurement rounds were conducted with approximately seven to nine months in between, in which children were tested on their receptive and expressive vocabulary skills in Dutch and English. In these four rounds of testing, children also participated in an elicitation task to elicit Dutch plurals. Simultaneously, classroom observations were recorded and teacher and parental questionnaires were gathered.

We investigated the effects of bilingual early childhood education and care (henceforth: ECEC) on Dutch and English language development in Verhagen et al. (2022). Our results showed that no negative effects from English exposure at daycare could be detected on the development in Dutch language skills, in receptive nor expressive vocabulary. This suggests that the presence of English at ECEC does not slow down or hinder development of the Dutch language. While no negative effects of English exposure at daycare on Dutch language skills could be detected, exposure to English at ECEC did have a positive effect on English language skills, both in receptive and expressive vocabulary. This suggests that the more exposure to English there is at ECEC, the larger the growth in English language skills.

Our models also showed that the effects of ECEC input were relatively limited as no effects for Dutch language exposure at daycare were found. Additionally, effects for home exposure on language development were much larger, indicating that home language input is more crucial to children's language development. However, it is important to note that results of our evaluation study only revealed positive effects for language exposure at bilingual ECEC, suggesting that the exposure to one language did not go at the expense of the other.

While our evaluation study regarding links between bilingual ECEC and children's vocabulary skills reported in Verhagen et al. (2022) offers great insights into the effects of bilingual ECEC on children's language development, a lot of questions remain unanswered, such as to what the sociolinguistic, educational and sociopolitical context is in which bilingual ECEC transpired in the Netherlands, how the implementation of bilingual ECEC comes about in practice in the Netherlands, and what the consequences of the presence of two languages in one classroom are for the two languages involved in terms of crosslinguistic influence on a structural level. Therefore in this dissertation, we

delved further into these topics, and in doing so, we provided an in-depth overview of bilingual ECEC in the Netherlands.

Chapter 2 showed that with regards to the sociolinguistic and sociopolitical context, both Dutch and English can be categorized as highly prestigious languages in the Netherlands. Whereas Dutch is the majority language, English also fulfills a prominent position in Dutch society. The English language is entrenched in Dutch society in various ways. For example, it is often used as a working language or second language and some even claim that it could be considered a national second language. As a result, it is often believed that knowledge of English can be beneficial to one's career, as it is considered essential in Dutch students' (future) work lives, both nationally and internationally. This high prestige of English is also reflected in the Dutch educational system as the introduction of Dutch-English bilingual education into the Dutch ECEC system was only the last step to take to effectively create a fully bilingual track in the Dutch educational system, running from zero to eighteen.

A discrepancy was revealed between the societal and educational aims of this initiative as formulated by the Dutch government on the one hand, and the aims of some of the organizations and the majority of the parents in our questionnaire on the other. These aims corresponded with two different ideologies. The Dutch government's intentions appeared to be in line with the so-called prestigious strong ideology that we outlined: the official request as formulated by the Dutch government to announce a pilot study on bilingual ECEC seemed to be targeted towards Dutch-speaking children, for which the aim is to acquire an additional second language of power (explicitly stated to be English), because it is believed that it will benefit their future.

While the Dutch government appeared to envisage a Dutch-speaking target audience, results from the parental questionnaire reported in chapter 2 showed that, in reality, the audience mainly consisted of multilingual families. The majority of children visiting bilingual ECEC grew up in a multilingual

household (72%). Only 28% of children grew up in a monolingual Dutch-speaking family. Approximately 37% of the children grew up in a household where no Dutch was spoken at all, indicating that these children acquired Dutch as a second language at bilingual ECEC. Still, it should be noted that enrolment rates with regards to home language situations differed per organization and geographical location. Whereas some were mostly visited by Dutch-speaking children (these organizations were mostly located outside of the Randstad), the majority of organizations (that were mostly located in the Randstad) were visited by a multilingual international audience. As a result, the policy plans of the ECEC centers mostly visited by Dutch-speaking children resonated with the prestigious strong motivations of the Dutch government. However, policy documents from ECEC centers visited by an international audience were mainly focused on exposing non-Dutch speaking children to Dutch, revealing two competing underlying ideologies.

Furthermore, results from chapter 2 on parents' reasons for placing their child in bilingual ECEC also highlighted the discrepancy between the Dutch government's aim and ideology and that of bilingual ECEC organizations visited by a multilingual audience. Approximately one-third of the parents indicated that they did not choose this daycare center for its bilingual nature but rather for practical reasons, such as proximity to the home. The parents who did choose the daycare center for its bilingual input gave a wide variety of reasons for doing so, the most common reason being that they wanted to preserve their English heritage (19%). This underlines the contradiction between the governments' main aim (focusing on the acquisition of the English language) and the implementation of this bilingual initiative in practice.

An analysis of the pedagogical policy plans showed that the ten participating daycare center organizations had different ways of implementing bilingual input into their daily routines and that these different ways corresponded with their audiences. According to their policy plans, six out of ten

ECEC organizations implemented the one person, one language principle where at all times during the day two teachers were present, of which one teacher only spoke Dutch and one only spoke English. One organization opted for an approach where two teachers were present, with one speaking only Dutch, the other both Dutch and English, resulting in fewer hours of exposure to English. The other three daycare organizations opted for weaker forms of bilingual education by adopting early English language methods and fewer hours of exposure on fixed times of the day. In these organizations, English was thus not necessarily used as a medium of instruction but rather as a separate subject. Monolingual Dutch children mostly visited these weaker forms of bilingual education whereas the multilingual audience mostly visited organizations that implemented strong forms of bilingual education, revealing an interplay between audience and organization of bilingual input.

Results from chapter 2 further showed a discrepancy between how bilingual input was implemented on paper versus how it took shape in practice. Results from the teacher questionnaire revealed that the majority of the OPOL-teachers indicated to switch between languages, illustrating that some teachers are stricter than others at sticking to the OPOL-principle. The main reason for teachers to switch languages was usually for children to be able to understand them, to comfort children or to correct them. Also results from the classroom observations with teacher-child interactions reported in chapter 3 corroborate the finding that OPOL-teachers sometimes switch languages in conversation.

Apart from exploring the relationships between contextual factors and the realization of bilingual ECEC, this dissertation further investigated what the consequences for bilingual ECEC were for the two languages in question: Dutch and English. More specifically, it investigated how the presence of two languages in one classroom affect each other with regards to: (1) the actual practice of using and navigating two languages in one classroom, and (2) the (cross)linguistic level by investigating the interplay between Dutch and English.

Chapter 3 was concerned with the first aspect and explored how bilingual input took shape and investigated how teachers created language learning opportunities through informal interaction in Dutch and English. Results showed that the type of input in English that is being offered at bilingual ECEC is slightly different than the Dutch input, as Dutch-speaking teachers made more use of teaching techniques than English-speaking teachers. Also, the types of teaching techniques that were employed in the two languages were different: whereas English-speaking teachers made more use of modelling strategies, Dutch-speaking teachers used more eliciting strategies. Additionally, English-speaking teachers produced more utterances that were part of songs and routines than the Dutch-speaking ones. These findings show that English and Dutch both seem to fulfill and take on different roles: English takes on the role of the foreign language, thus requiring input involving L2 strategies such as songs, routines and modelling techniques. Dutch takes on the role of the majority language, thus requiring input where at least some knowledge of the language is already assumed.

Also, results show that the two languages in one classroom do not operate independently as children sometimes used English conversations with Dutch-speaking teachers and the other way around. Similarly, Dutch-speaking teachers sometimes resorted to English and English-speaking teachers to Dutch. Teachers indicated that they sometimes found it necessary to switch languages as they believed it could be beneficial to children's wellbeing and could otherwise be harmful to children if they were unable to comfort them or properly correct them. As we believe that children's wellbeing plays an important part in successful implementation of bilingual ECEC and its effects on language development, we think that switching languages could be a useful tool. This way, the use of one language might reinforce acquisition of the other and both languages can work together to facilitate language learning.

Similarly in chapters 4 and 5, where we investigated how the two languages might affect each other on a (cross)linguistic level, we found that the two languages might facilitate each other. In chapter 4 we investigated the effects of English exposure on the acquisition of the Dutch plural. Whereas we expected crosslinguistic influence to manifest itself in terms of preference for the *-s* affix in the form of *-s* overgeneralizations in contexts where the *-en* affix was required (due to partial overlap between English and Dutch pluralization), we found the opposite: the results showed that children had a clear preference for *-en*, such that they overgeneralized this affix to plurals where *-s* was required. However, we also found that more exposure to the English language seemed to facilitate correct production of the *-s* affix in children below the age of four. We proposed that this could be interpreted as a more limited occurrence of crosslinguistic influence where more exposure to English possibly accelerates the acquisition of the *-s* affix.

In chapter 5 we further explored the interplay between Dutch and English on a linguistic level by unraveling the effects of form similarity on early lexical development. This was done by focusing on word learning in the ‘weaker’ language (English) by two-and-three year old children acquiring English as a foreign language at bilingual ECEC. Results revealed form similarity effects in English receptive and expressive vocabulary, in that children more often scored correctly in English on form similar nouns (e.g. *apple* in English and *appel* in Dutch) than form dissimilar nouns (e.g. *bicycle* in English and *fiets* in Dutch). This suggests that form similarity indeed plays a role in word learning and might have a facilitative effect in children’s early lexical development.

All in all, the results of this dissertation show that there are links between the context, underlying ideologies and the implementation and organization of bilingual input. In addition, we revealed discrepancies on two levels: (1) between the Dutch government’s underlying ideologies and those of some of the daycare centers, and (2) between the organization of bilingual input on paper and in

practice. We believe that the results of this dissertation further indicate that the implementation of bilingual ECEC in the Netherlands is not something that needs to be feared, as time spent in bilingual ECEC on one language does not seem to come at the expense of the other. Rather, the two languages take on different roles in the classroom, and seem to find a way to work together and to support one another. Whether bilingual ECEC has any long term effects on fostering Dutch-English bilingualism is a puzzle that needs further solving, as it is not yet clear whether acquiring a foreign language at ECEC leads to lasting proficiency. This does however not imply that bilingual ECEC does not serve any other use. After all, children get acquainted with other languages, cultures and – just as importantly – bilingual ECEC can be a lot of fun.

Nederlandse samenvatting

Twee talen in de kinderopvang: Een beschrijving van tweetalige kinderdagverblijven in Nederland

Tweetalig onderwijs rukt op in Nederland. Veel scholen voor voortgezet onderwijs bieden tweetalig onderwijs aan en ook in het primair onderwijs neemt vroeg vreemdetalenonderwijs in populariteit toe. Ditzelfde geldt voor de kinderopvang. Een groeiend aantal ouders ziet graag dat hun kind op zeer jonge leeftijd een vreemde taal verwerft, en dan bij voorkeur het Engels. Ze geloven dat dit veel voordelen met zich meebrengt: het zou kinderen voorbereiden op hun verdere schoolloopbaan en carrière, waar het Engels een grote rol speelt.

Reden genoeg voor het Ministerie van Sociale Zaken en Werkgelegenheid om een onderzoek uit te zetten naar het effect van tweetalig taalaanbod in de kinderopvang voor kinderen van nul tot vier jaar. Aan dit onderzoek, genaamd Project MIND (Meertaligheid in Dagopvang/Multilingualism in Daycare) namen tien kinderopvangorganisaties deel, verspreid over 18 locaties door heel Nederland. Voorwaarde voor deelname was dat het taalaanbod in het Engels niet meer dan 50% van de tijd mocht beslaan en dat het taalniveau van de Engelsprekende medewerkers minstens B2 was.

Het hoofddoel van het project was om de effecten van het Nederlandse en Engelse taalaanbod op de kinderdagverblijven te meten op de Nederlandse en Engelse taalontwikkeling van de kinderen. Om dit te onderzoeken, werden tussen 2018 en 2021 gedurende vier meetmomenten kinderen getoetst op hun receptieve en actieve woordenschat in beide talen. Daarnaast namen de kinderen

deel aan een elicitatietaak en werden er vragenlijsten ingevuld door ouders en pedagogisch medewerkers.

De effecten van het tweetalig taalaanbod op de taalontwikkeling van het Engels en het Nederlands van de kinderen staan beschreven in Verhagen et al. (2022). In dit onderzoek hebben we rekening gehouden met de thuistaalsituaties van de kinderen, zodat we de daadwerkelijke effecten van het taalaanbod op de opvang konden monitoren. Over het algemeen vonden we meer effecten van het taalaanbod thuis dan op de opvang, en waar we wel een effect van het taalaanbod op de opvang konden vinden, gold dat alleen voor de ontwikkeling van het Engels. De verdere relaties die we in het onderzoek vonden tussen de hoeveelheid taalaanbod en de groei van woordenschat waren uitsluitend positief: in geen enkel geval hing meer taalaanbod in de ene taal samen met een minder sterke groei in de andere taal. Het aanbieden van Engels op de opvang lijkt dus niet ten koste te gaan van de ontwikkeling van de Nederlandse woordenschat.

Waar we in Verhagen et al. (2022) de effecten van het taalaanbod op de kinderopvang op de taalontwikkeling nauwkeurig uiteen hebben gezet, blijven een aantal kwesties nog onbeantwoord. Want wat is de maatschappelijke context waarin de invoering van tweetalige kinderdagverblijven tot stand is gekomen? En hoe wordt het tweetalig taalaanbod georganiseerd en uitgevoerd in de praktijk in kinderdagverblijven in Nederland? Wat zijn de gevolgen van de aanwezigheid van twee talen op de groep voor beide talen? Hoe worden beide talen aangeboden en hoe beïnvloeden de twee talen elkaar? In deze dissertatie komen deze verschillende kwesties aan bod. Door het fenomeen vanuit verschillende invalshoeken te benaderen, hopen we tot een beter begrip te komen van wat het betekent om tweetalig taalaanbod te introduceren in de Nederlandse kinderopvang.

In hoofdstuk 2 beschreven we de maatschappelijke context waarin dit initiatief tot stand is gekomen, evenals de relaties tussen onderliggende ideologieën en de manieren waarop het taalaanbod op kinderdagverblijven is

vormgegeven. In Nederland genieten zowel het Nederlands als het Engels een hoog aanzien: het Nederlands is de meerderheidstaal en het Engels vervult een belangrijke rol in de Nederlandse maatschappij. Het Engels wordt vaak gebruikt in populaire cultuur en op het werk. Kennis van het Engels wordt dan ook vaak gezien als een groot voordeel op de (internationaal georiënteerde) arbeidsmarkt. De status van het Engels uit zich ook in het Nederlandse onderwijssysteem: Engelstalig onderwijs wint aan terrein in het hoger, voortgezet en primair onderwijs. Tweektalige kinderdagverblijven zijn slechts de laatste stap die genomen moet worden om een geheel tweetalig onderwijssysteem te creëren van nul tot achttien jaar.

Hoofdstuk 2 onthulde een grote discrepantie tussen de maatschappelijke en onderwijskundige doelen van dit initiatief, zoals geformuleerd door de Nederlandse overheid enerzijds en de meerderheid van de deelnemende instellingen en ouders anderzijds. Deze doelen correspondeerden met verschillende onderliggende ideologieën. De Nederlandse overheid leek er een zogeheten *sterke prestigieuze* ideologie op na te houden: in hun officiële aankondiging van het experiment lijken zij zich voornamelijk te richten op eentalige Nederlandse kinderen die een tweede taal met aanzien moeten verwerven (en zij stellen expliciet dat dit het Engels moet zijn), omdat ze geloven dat het voordelig is voor hun toekomst.

Hoewel de Nederlandse overheid een eentalig Nederlandse doelgroep voor zich zag, wezen de resultaten van onze oudervragenlijst gerapporteerd in hoofdstuk 2 uit dat in werkelijkheid de tweetalige kinderdagverblijven voornamelijk werden bezocht door meertalige families. Slechts 22% van de kinderen groeide op in een eentalig Nederlands gezin. Ongeveer 43% van de kinderen groeide op in een gezin waar helemaal geen Nederlands werd gesproken, deze kinderen verwierven het Nederlands als tweede taal op het kinderdagverblijf. Verder lieten de resultaten van hoofdstuk 2 zien dat de taalachtergronden en samenstelling van het publiek verschilden per instelling en

geografische locatie. De instellingen gelegen buiten de Randstad (zij waren in de minderheid) werden voornamelijk door eentalige Nederlandse kinderen bezocht, de instellingen gelegen binnen de Randstad voornamelijk door een meertalig (en anderstalig) publiek. De instellingen die voornamelijk werden bezocht door een eentalig Nederlands publiek kwamen in hun doelstellingen overeen met de sterke prestigieuze ideologie van de Nederlandse overheid. In hun pedagogische beleidsplannen benoemden zij meermaals het belang van het verwerven van het Engels op jonge leeftijd. De instellingen die voornamelijk werden bezocht door een meertalig (en anderstalig) publiek leken echter meer gericht op het verwerven van het Nederlands als tweede taal, zo wees een analyse van hun pedagogische beleidsplannen uit.

De resultaten van de ouder vragenlijsten gerapporteerd in hoofdstuk 2 onthulden dezelfde twee concurrerende ideologieën. Ongeveer een derde van de ouders gaf aan dat zij niet hebben gekozen voor een tweetalig kinderdagverblijf vanwege het tweetalig taalaanbod, maar vanwege andere, praktische overwegingen, zoals de locatie van het kinderdagverblijf ten opzichte van hun huis of werk. De ouders die wel voor de tweetalige kinderdagverblijven kozen vanwege het tweetalig taalaanbod, gaven verschillende redenen. De meest genoemde reden was het behouden van hun Engelse thuistaal. Dit resultaat benadrukt nogmaals het internationale karakter van het publiek dat de tweetalige kinderdagverblijven bezoekt, en de discrepantie tussen de gestelde doelen van de overheid enerzijds, en die van het merendeel van de instellingen en ouders anderzijds.

Een analyse van de pedagogisch beleidsplannen liet verder zien dat de instellingen verschillende manieren hadden gevonden om het tweetalig taalaanbod te implementeren in hun dagelijkse routines, en dat deze verschillende manieren correspondeerden met de verschillende doelgroepen. Zes van de tien deelnemende instellingen kozen voor een zogeheten één persoon, één taal methode. Bij deze methode zijn gedurende de dag altijd twee personen aanwezig,

van wie de één alleen Nederlands spreekt, en de ander alleen Engels. De andere locaties kozen voor methodes waarbij het Engels minder frequent aanwezig was op de groepen, door alleen op bepaalde tijden het Engels te spreken en/of gebruik te maken van Engelse lesmethodes. Eentalige Nederlandse kinderen bezochten voornamelijk deze laatste groep kinderdagverblijven, terwijl de kinderdagverblijven waarbij het Engels meer aanwezig was voornamelijk werden bezocht door een internationaal publiek.

Toch lieten de resultaten van hoofdstuk 2 zien dat de pedagogisch beleidsplannen niet altijd een correcte weergave waren van de werkelijkheid. De meerderheid van de pedagogisch medewerkers die werkten in een organisatie waar de één persoon ,één taal methode werd gehanteerd, gaven in een vragenlijst aan wel eens te wisselen tussen talen, iets wat volgens de pedagogische beleidsplannen onwenselijk werd geacht. Ook de observaties van leidster-kindinteracties in hoofdstuk 3 lieten zien dat pedagogisch medewerkers weleens wisselen tussen talen. Dit toont aan dat de modellen die worden gebruikt om tweetalig taalaanbod vorm te geven dynamisch van aard zijn: pedagogisch medewerkers toonden flexibiliteit in hun aanpak om tegemoet te komen aan de behoefte van de kinderen. Tevens lieten de resultaten van hoofdstuk 3 zien dat de leidsters het gebruik van een andere taal dan de doeltaal toestonden, waardoor op de groepen vaak meertalige gesprekken werden gevoerd.

Wel was er een verschil op te merken tussen het soort taalaanbod dat in het Engels werd verschaft en in het Nederlands. De pedagogisch medewerkers leken in het Engels voornamelijk gebruik te maken van liedjes, routines en modelleerstrategieën. Dit zijn voornamelijk strategieën die worden ingezet bij tweedetaalleerders. In het Nederlands gebruikten de leidsters daarentegen meer gebruik van open vragen, een strategie waarbij al enige kennis van het Nederlands wordt verondersteld. Dit toont aan dat het Nederlands en het Engels verschillende rollen lijken te vervullen op het tweetalig kinderdagverblijf, maar dat ze elkaar ook kunnen ondersteunen waar nodig, aangezien de leidsters

regelmatig wisselen tussen talen om de begrijpelijkheid en het taalleerproces te bevorderen.

Ook in hoofdstukken 4 en 5 zagen we dat de twee talen samen kunnen werken en elkaar kunnen versterken. In hoofdstuk 4 onderzochten we mogelijke crosslinguïstische beïnvloeding van het Engels op het Nederlands in de verwerving van het Nederlandse meervoud. Dit onderzochten we door gebruik te maken van een elicitatietaak waar spelenderwijs meervoudsvormen werden uitgelokt. Waar we hadden verwacht dat de kinderen die de tweetalige kinderdagverblijven bezochten een sterkere voorkeur zouden hebben voor meervoudsvorming met de *-s* (omdat dit de enige manier is waarop in het Engels een meervoud gevormd kan worden), vonden we het tegenovergestelde. Kinderen leken een sterke voorkeur te hebben voor meervoudsvorming met *-en*. We vonden echter wel dat hoe meer Engels de kinderen hoorden, hoe minder zij *-en* overgeneraliseerden (en dus vaker correct meervouden vormden met *-s*). Blootstelling aan het Engels lijkt de verwerving van meervoudsvorming met *-s* dus in enige mate te faciliteren.

Ook in hoofdstuk 5 vonden we aanwijzingen voor een faciliterende werking van de ene taal op de andere. Ditmaal richtten we ons op woordenschatontwikkeling en keken we of vormgelijkheid tussen woorden (bijvoorbeeld *apple* in het Engels en *appel* in het Nederlands) het verwerven van dit woord in de andere taal vergemakkelijkt. Om dit te onderzoeken hebben we ons gericht op een groep kinderen die thuis slechts in zeer beperkte mate aan het Engels werd blootgesteld en dus het Engels als vreemde taal leerde op het kinderdagverblijf. Resultaten lieten zien dat vormgelijkheid inderdaad een rol leek te spelen in zowel de receptieve als de actieve woordenschat: kinderen scoorden in het Engels vaker correct op woorden die qua vorm leken op hun Nederlandstalige tegenhanger dan woorden die dat niet deden.

Kortom, de resultaten van dit proefschrift laten zien dat er een verband is tussen de maatschappelijke context, onderliggende ideologieën en de

organisatie van tweetalig taalaanbod. Daarnaast onthulden we discrepanties op twee verschillende manieren: (1) tussen de gestelde doelen van de Nederlandse overheid en de gestelde doelen van de meerderheid van de deelnemende instellingen, en (2) tussen hoe het taalaanbod op papier wordt georganiseerd en hoe in de praktijk. Ook laten de resultaten zien dat de invoering van tweetalig taalaanbod in de Nederlandse kinderopvang niet per se iets is wat gevreesd moet worden. De ene taal lijkt niet ten koste te gaan van de ander, de twee talen vervullen verschillende rollen en lijken zelfs een manier te vinden om samen te werken en elkaar te versterken. De vraag of tweetalig taalaanbod in de kinderopvang ook daadwerkelijk leidt tot langetermijneffecten zoals blijvende tweetaligheid vereist echter nog verder onderzoek. Dit betekent echter niet dat tweetalige kinderopvang geen ander nut dient: kinderen komen er in aanraking met andere talen en culturen, en het is – minstens net zo belangrijk – heel erg leuk.

About the author

Darlene Keydeniers was born on April 16th 1993 in Vlissingen, The Netherlands. In 2011, she started in the BA program in Literary Studies at the University of Amsterdam. In 2013, she started in a second BA program in Dutch Language and Culture at the same university. It was during her second BA program that she discovered an interest in language acquisition, and in 2015, she decided to pursue a research master's degree in Linguistics at the University of Amsterdam. During her master's program, she was involved in different studies in the area of language acquisition. Following her cum laude graduation from the research master in 2017, she continued to work as a research assistant at the Erasmus University Medical Centre-Sophia's Children's Hospital Rotterdam, in a project on stuttering in toddlers. Simultaneously, she worked as a research assistant at the University of Amsterdam in a project that investigated the relationships between statistical learning and children's language development.

In February 2018, Darlene began her PhD at the University of Amsterdam, working on Project MIND (Meertaligheid in Dagopvang/Multilingualism in Daycare). During her PhD years, she taught multiple courses at the University of Amsterdam on various topics regarding language acquisition and multilingualism. In 2020 and 2021, she also held a position as lecturer in Dutch linguistics at the Open University. In addition to this, she was active as web editor and editor of the news bulletin for the Werkverband Amsterdamse Psycholinguïsten. In October 2022, Darlene started working as a senior researcher at the Koninklijke Auris Groep.