Master Thesis

CROSSLINGUISTIC INFLUENCE ON THE SYNTAX-PRAGMATICS INTERFACE

Connective use by Dutch-Russian bilingual children

Rinsophie Vellinga

Student Nr 3716937

5 July 2016

Dr. E. Tribushinina

Dr. P. Mak

ABSTRACT

The present study is a corpus study on the use of discourse connectives by Dutch-Russian bilingual children. Narratives told by monolingual and bilingual children were analyzed in order to verify the existence of crosslinguistic influence in structures that involve the syntax-pragmatic interface. The structures include the frequency distribution of Dutch and Russian additive and (semi)-adversative connectives across topic-shift and topic-maintenance contexts. The bilingual children were tested in both their languages and compared with age-matched bilinguals. The study aims to establish whether the interface hypothesis can account for crosslinguistic influence or whether language-external factors such as age, quality of the input, or language dominance can be posited as a predictor of crosslinguistic effects in the production of discourse connectives by young bilingual children. The results revealed that the Dutch structures were not vulnerable to influence from the Russian onto the Dutch language. The results demonstrated that dominance in the Dutch language influenced the Russian structures; hence, crosslinguistic influence occurred in the opposite direction than was predicted.

Keywords: Bilingual first language acquisition, crosslinguistic influence, discourse pragmatics, relational coherence.

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1   INTRODUCTION

Today, the general consensus is that children learning a second language from an early age develop separate language systems (Paradis & Genesee, 1996; Genesee, Nicoladis, & Paradis, 1995; de Houwer, 1990). Meanwhile, there is continuous debate as to whether bilingual children go through certain developmental phases wherein the two languages interact with each other and whether these children show a developmental pattern that deviates from that of monolingual children (Genesee, 1989). Key questions concern the directionality of transfer, how the bilingual speaker alternates between languages and how crosslinguistic patterns of interference are reflected in the speaker's production and comprehension of the language (Ortega, 2009, p. 4; Bedore & Peňa, 2008). Evidence from research suggests that bilinguals differ qualitatively and quantitatively from monolinguals in terms of developmental patterns in language production and comprehension.

In this respect, it is important to consider under which circumstances the child introduces features from one language to another, a phenomenon that has been referred to by different terms, such as *transfer*, *interference*, *interdependance* and *crosslinguistic influence* (Serratrice, 2013). Some researchers argue that transfer is based on internal linguistic factors, i.e. structural overlap (Bates & MacWhinney, 1989; Döpke, 1998), language ambiguity (Müller, 1998), the discourse–pragmatics interface (Hulk & Müller, 2000; Serratrice, Sorace, & Paoli, 2004), and the syntax–semantics interface (Argyri & Sorace, 2007). Others claim that crosslinguistic influence originates by way of external factors. According to theorists of the latter view, language dominance, the quality and amount of input from a particular language (Paradis & Navarro, 2003; Argyri & Sorace, 2007; Unsworth, 2012), and language processing (Nicoladis, 2006; Sorace & Serratrice, 2009) are the main predictors of the direction and extent of crosslinguistic influence.

This thesis tries to contribute to the discussion by comparing Dutch–Russian bilingual children and monolingual Russian and Dutch children with respect to maintaining relational coherence, i.e. coordinating clauses and sentences by discourse connectives, in narratives. Many crosslinguistic investigations have focused on referential coherence, i.e. the use of pronouns, null anaphora, definite and indefinite articles etc., since their distribution is constrained by discourse–pragmatics, e.g. new versus old information, joint attention, topic maintenance and topic shift (Aarssen, 1996; Paradis & Navarro, 2003; Müller & Hulk, 2001; Argyry & Sorace, 2007; Gagarina, 2008; Hervé, 2014). There has been relatively little research examining the area of relational coherence, in particular, the use of connectives by bilingual children in their two

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languages (Tribushinina, Mak, Andreiushina, Dubinkina & Sanders, 2015b). This thesis seeks to fill this gap by examining the frequency and quality of connective use by bilingual children of different age groups in both languages. The first aim of the present study is to test whether these structures are vulnerable to crosslinguistic influence and, if so, whether language-internal or language-external factors can account for differences found between monolingual and bilingual children.

The children under investigation are simultaneous bilinguals, living in the Netherlands, who have been exposed to Russian and Dutch from birth and use these languages on a daily basis. However, they are not expected to be perfectly balanced bilinguals, as the dominant language of the community and—in most cases—the native language of one of the parents, is Dutch. This is precisely the property that makes these children suitable for testing structures used for maintaining coherence, i.e. structures that might be vulnerable to crosslinguistic influence. By comparing the use of discourse connectives in the bilinguals' dominant and non-dominant language with that of age-matched Russian and Dutch monolinguals, it is possible to disentangle language-internal and language-external factors affecting crosslinguistic influence.

In relation to unbalanced bilingualism, the amount and quality of the language input the bilingual child is exposed to can be a determining factor (Paradis & Navarro, 2003; Argyri & Sorace, 2007; de Houwer, 2009). Paradis and Navarro (2003) rightly raised questions regarding the potential effect of parental input on apparent crosslinguistic structures in the child's output. Could the input bilingual children receive be qualitatively different from that of monolingual children? Traces of Dutch influence may already exist in the speech of the parent(s), who may "pass them down" to the next generation (Laleko, 2010, p. 29). Therefore, a further aim of this study is to examine the role of the input and the extent to which this factor can be related to deviant connective production among bilingual children.

1.1 BACKGROUND AND MOTIVATION FOR THIS RESEARCH

Research on child bilingualism is not only important in order to increase our understanding of the human language faculty or language acquisition in general, but also in order to apply scientific knowledge for the benefit of raising and educating bilingual children. With the rising number of bilingual and multilingual children, language and education specialists are challenged to provide better ways to assess the language skills of these children. Although more than half of the world's population is bilingual, the monolingual norm often serves as a point of reference for comparing these two types of language acquisition. Consequently, bilingual children are often

misdiagnosed for Specific Language Impairment (SLI), which may result in them being overidentified or underidentified as having a language disorder (Grimm & Schultz, 2013).

The present study is part of the international project, 'Discourse Coherence in Bilingualism and Specific Language Impairment'. The project aimed to provide insights into combined and separate effects of bilingualism and SLI in the domain of referential and relational discourse coherence. The new insights will contribute to the development of adequate assessment and diagnostic tools for multilingual children.[1] The study is a continuation of previous research seeking to determine whether the specific requirements for connective usage in Russian may lead to deviant use when bilingual children speak Dutch (Tribushinina et al., 2015b). The connective use of the 7-year-old Dutch–Russian bilingual children investigated by Tribushinina et al. revealed no indication of crosslinguistic influence from the Russian to the Dutch language. However, non-targetlike distribution of additive connectives was established when they spoke Russian. These results suggest that language dominance, and not interface conditions alone, can provide an explanation for the direction of crosslinguistic interaction.

The present study looked at the connective production of younger bilinguals, aged 4–6. As bilingual children mature linguistically, they develop competence in the two languages spoken. Therefore, different patterns of acquisition may be detected in younger bilinguals, showing that they are more susceptible to crosslinguistic influence. In addition, I have analyzed language data from parents and their children to determine the role of parental input. The input bilingual children receive might not be entirely similar to typical native input, since the parents' first language might already be affected by their L2, the language of the environment (Paradis & Navarro, 2003; Lanza, 1998). Therefore, it is important to look into the quality and nature of the parents' language data in order to determine whether connective production by bilingual children reflects the parents' input.

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[1] http://www.uu.nl/staff/ETribushinina/3. This project was supported by the EU Marie Curie IRSES grant and was carried out by Utrecht University in cooperation with Zentrum für Allgemeine Sprachwissenschaft (Berlin) and Herzen State Pedagogical University of Russia (Saint-Petersburg).

2   THEORETICAL OVERVIEW

2.1 INTRODUCTION

This chapter will provide an overview of some of the studies which have examined bilingual language acquisition, focusing specifically on studies exploring crosslinguistic influence. At present, most researchers support the argument that children learning a second language from an early age possess separate linguistic systems. Supporting evidence comes from studies which are in favour of the Autonomous Development Hypothesis (de Houwer, 1990, 2009). Bilinguals separate the two languages from the very first stages of development and acquire the fundamental linguistic knowledge of both languages at the same pace as their monolingual peers (Paradis & Genesee, 1996; Genesee, Nicoladis & Paradis, 1995). Language separation, however, does not mean, that the systems are permeable. In fact, linguistic behaviours of bilingual children do not exactly match up with those of monolingual children. Bilingual children tend to use target-deviant structures more and for a longer period than their monolingual peers (Hulk & Müller, 2001; Serratrice et al, 2004; Paradis & Navarro, 2003). As a result, the question of whether—and if so, how—acquisition of two languages affects the development of one or both language systems has been a topic of essential investigation.

2.2 WHAT DRIVES CROSSLINGUISTIC INFLUENCE? INTERNAL AND EXTERNAL LINGUISTIC MECHANISMS

Some of the issues that dominate the present research on bilingual first language acquisition are (i) whether the interaction between the two languages is defined by internal or external factors, (ii) how such interaction ultimately constrains or activates crosslinguistic influence, and (iii) in what direction transfer takes place. Researchers have taken two main directions with respect to the different sources of crosslinguistic influence. Some identify language-internal mechanisms as the main determinants of interaction effects, while others argue that language-external factors need to be taken into account.

Proponents of the view that language-internal factors are the main predictors of crosslinguistic influence hypothesize that transfer is most likely to occur in domains where the two languages overlap. In such cases, the bilingual child is confronted with partially overlapping structures and multiple language-specific forms competing with one other. The competition between forms and functions might cause a child to have problems applying the right

construction (Bates & MacWhinney, 1989; Döpke, 1998; MacWhinney, 2005). Transfer is supposed to be unidirectional and is likely to take place in those areas which are also problematic for monolingual children (Hulk & Müller, 2000; Müller & Hulk, 2001).

De Houwer (2009) offers an opposing view. According to her, the separation of the two languages in the bilingual mind implies that there is no interaction between the grammar systems and that monolingual and bilingual children go through the same language development processes. By this view, mixing elements from two languages cannot be attributed to cross-linguistic influence, i.e. there is no systematic transfer of the grammatical properties from a source language into the recipient language. If mixing is present at all, it is the result of external factors or it can be explained as the occasional performance error. Along the same line, studies of Paradis and Genesee (1996) and Paradis and Navarro (2003) point out that crosslinguistic interference in young bilingual children is not caused by language–internal factors. Moving a linguistic property from one language to another originates from external factors, such as the amount of input or the frequency of appearance of a certain feature.

The two views will be discussed in more detail in the following sections.

2.3 LANGUAGE-INTERNAL FACTORS

2.3.1 CROSSLINGUISTIC INFLUENCE AND THE COMPETITION MODEL

The Competition Model claims that children learn grammatical constructions by establishing connections between meaning and form based on structural cues. In language acquisition, there is competition between several cues for the same function or there is one cue for several functions (Bates & MacWhinney, 1989). The competition is stronger in bilingual language acquisition. The Competition Model predicts transfer if forms which bear similarities in the two languages compete crosslinguistically. In that case, children acquiring two languages experience an additional cognitive overload because they have to suppress the stronger cues in their dominant language (MacWhinney, 1997, 2005).

In line with the assumptions of the Competition Model, Döpke (1998) examined the use of word order in the speech of German–English bilingual children. English has only V(erb)O(bject) word order, whereas German displays VO word order in main clauses and O(bject)V(erb) word order in subordinate clauses. The bilingual children in Döpke's (1998) study sometimes used the non–target VO word order in German subordinate clauses, while German monolingual children do not have difficulty with the final placement of verbs in these constructions. Döpke suggested that this phenomenon could be attributed to competing cues in the partially overlapping German and English language structures. The verb + complement word

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order is present in both languages and is therefore a stronger and more salient cue than the cue for OV word order, which has lesser strength: "…we have found direct crosslinguistic influences of English on the word order of German as the concurrent presence of V-XP in English strengthened the V-XP cue which is independently available in German" (Döpke, 1998, p. 580). This also explains why the bilingual children used English word order in German sentences, but they did not use German OV word order in English sentences.

In the same vein, Müller (1998) argues that transfer can be explained as a function of ambiguous input. She discusses to what extent transfer from French is responsible for German-French bilingual children's difficulties with word order in German subordinate clauses. The bilingual children find themselves confronted with two distinct grammatical hypotheses, verb second and verb-final position, both compatible with subordinate clauses. To solve this problem, the children use the unambiguous features of the French language (no difference between the placing of verbal elements in main and subordinate clauses), and, as a 'relief strategy', apply these features in the ambiguous German language (placing finite verbs in second position and non-finite verbs in final position of main clauses and both, finite as well as non-finite, verbs in final position of subordinate clauses). To facilitate such transfer, there has to be positive evidence in the input of the target language. Consequently, transfer is always unidirectional.

2.3.2 CROSSLINGUISTIC INFLUENCE AND THE INTERFACES

Hulk and Van der Linden (1998) agree with Müller (1998) in that bilingual children may use a relief strategy to deal with ambiguous input, but they reject the idea of direct transfer of feature specifications from one language to the other. Instead, they prefer to use the term 'crosslinguistic influence', meaning indirect influence of one language on the other. Especially in those cases where the bilingual child is exposed to ambiguous input or conflicting syntactic possibilities and, at the same time, the input from each of the languages is less than what a monolingual child receives, indirect influence from one language to another is possible.

The concept of overlap of conflicting syntactic structures was further elaborated by Hulk and Müller (2000) and Müller and Hulk (2001) in studies examining Dutch–French, German–French and German–Italian children's object realization. With the interface hypothesis, Müller and Hulk (2001) suggested that crosslinguistic influence is likely to occur when two conditions are met. First, the grammatical structure involved should belong to the so–called C(omplementizer)–domain, where pragmatic and syntactic information is exchanged; this is an area which is also problematic for all young children, monolinguals included, since they are not yet fully aware of the language-specific requirements of the C-domain. Second, syntactic crosslinguistic influence occurs only if language A has a syntactic phenomenon which allows for

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more than one grammatical analysis and language B contains positive evidence for one of these possible analyses. Thus, there has to be partial overlap between the two language systems at the surface level. In that case, crosslinguistic influence is expected to be unidirectional from language B to A. The effects are particularly evidenced in younger children, who have not yet acquired the C-domain in its target form. Furthermore, the effects are of a quantitative nature rather than of a qualitative nature (Serratrice, 2013). This is illustrated in the study of Hulk and Müller (2000), in which crosslinguistic influence leads to a delay in object realization.

The conditions of the interface hypothesis were challenged by Argyri (2003) and Argyri and Sorace (2007). Argyri (2003) pointed to the limitations of the research methodology: Hulk and Müller counted the frequencies of object omission, but ignored the pragmatic contexts in which object omission took place. Besides, they tested only one grammatical domain relevant to the syntax–pragmatics interface, leaving purely syntactic phenomena untested. Argyri and Sorace (2007) examined subject placement in wide-focus contexts in the case of Greek–English bilingual first language acquisition and found that crosslinguistic influence is sensitive to language dominance. They further observed instances of crosslinguistic influence in narrow syntax by examining subject placement in wh-interrogatives. Contrary to Hulk and Müller's hypothesis, both examined structures were found to be vulnerable to crosslinguistic influence from the English to the Greek language, but only with English-dominant children, living in the UK. The Greek-dominant bilinguals did not differ from Greek monolinguals.

Further evidence against the interface hypothesis was offered by Serratrice et al. (2004), who found that an English–Italian bilingual child made pragmatically inappropriate choices with regard to the use of overt subjects in the null-subject Italian language under the influence of the non-null-subject English language. These instances of transfer were observed after instantiation of the C-system in the two languages and can be explained by the complexity of coordinating syntactic and pragmatic information, leading to unidirectional influence from the language with fewer pragmatic constraints onto the language with pragmatically complex constraints.

2.4 LANGUAGE-EXTERNAL FACTORS

Although most studies have focused on language-internal factors, a number of researchers have argued that language-external factors predict the direction and strength of crosslinguistic influence (Paradis & Genesee, 1996; Argyri & Sorace, 2007). Contrary to the view of Hulk and Müller (2001), who argued that language dominance is an irrelevant factor, they emphasize the importance of the external environment, providing the bilingual child with input from different languages. This may result in varying support for either the first or the second language.

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Language dominance and language proficiency require the consideration of different variables, such as the quantity and quality of the input, age and length of exposure, frequency of use, and processing abilities. Measuring and controlling these variables is crucially important in research on bilingualism (Altarriba & Heredia, 2011, p. 111).

2.4.1 THE ROLE OF LANGUAGE DOMINANCE

Studies in the field of bilingual language acquisition demonstrate that bilingual children are seldom equally proficient in both their languages (Gagarina, 2008; Paradis et al., 2003). Besides, children can be variably competent in different domains of their two languages and the balance between the 'weaker' and the 'stronger' language can change over time (Nicoladis, 2016). Language proficiency generally refers to the child's linguistic ability. According to Silva-Corvalán and Treffers-Daller (2016) language dominance refers to the relation between the two languages in terms of exposure and use in the family, community or country of the bilingual child. They describe the dominant language "as that in which a bilingual has attained an overall higher level of proficiency at a given age and/or the languages that s/he uses more frequently, and across a wider range of domains" (p. 4).

Important questions regarding the role of language dominance are whether dominance affects or constrains crosslinguistic influence in the more complex or in the less complex language, and how language fluency is related to the degree of the influence. Dominance in the more complex language would result in influence from the more complex language to the less complex language. Conversely, in balanced bilingualism or dominance in the less complex language, the less complex language may influence the more complex language (Hervé, 2014, p. 119). Argyri and Sorace (2007) explored the role of dominance in a study examining English–Greek bilingual children's placement of overt and preverbal subjects. They tested two groups, Greek-dominant and English-dominant bilingual children. Their original hypothesis was that crosslinguistic influence would occur only at interfaces, regardless of dominance. This language-external variable was, in line with the view of Müller and Hulk (2001), not predicted to be an important factor determining crosslinguistic interference. Yet, the results did not support Müller and Hulk's claim that crosslinguistic influence only occurs at interfaces, regardless of dominance. The data actually revealed a general effect of the language of the environment. The direction of crosslinguistic influence was unidirectional, from the dominant language into the non-dominant language, but was observed only in the Greek data of the English-dominant children living in the UK. It is therefore incorrect to conclude that dominance is the sole factor affecting cross-linguistic influence since there was no influence from Greek to English in the Greek-dominant group.

Müller (1998) argued against the role of language dominance in crosslinguistic influence, claiming that it does not account for the transfer within the domain of the acquisition of subordinate clauses in German. In her study, transfer seemed to take place independently of factors such as the language of the country where the child was raised. Children acquiring German and English simultaneously, with German as a dominant language, nonetheless transferred from English into German as a relief strategy. In addition, Müller & Hulk (2001) investigated German–Italian bilingual children and concluded that dominance cannot explain the crosslinguistic influence observed with respect to object omission. They observed crosslinguistic influence for both languages, regardless of whether it concerned the dominant or the non-dominant language.

In order to draw conclusions about the role of dominance and proficiency, we need to consider a way to determine and measure these concepts (Bedore & Peña, 2012). Many studies have analysed MLU, lexical development, directionality of mixing and production of target-deviant forms to asses language dominance (Genesee et al. 1995). In addition, parental question-naires are applied to gather information on age of first exposure, current language use etc. (Bedore et al., 2012). Argyri and Sorace (2007) define the dominant language of the English–Greek bilingual participants of their study as that in which the child obtains more input on a regular basis. For the purpose of their study, Sorace et al. (2004) defined English–Italian bilinguals living in the UK as English-dominant and bilinguals living in Italy as Italian-dominant.

In the present study, the bilingual children are classified as Dutch dominant because Dutch is the language they are predominantly exposed to. This classification is not based on a systematic analysis; rather, it is an assumption based on the perceived proficiency of the children in the two languages and the dominant language of their country of residence, the Netherlands. Since the age of four, the children have been attending a Dutch primary school where Dutch is the language of instruction. Additionally, the children attend a Russian school once a week.

2.4.2 THE ROLE OF INPUT

Another external factor claimed to predict crosslinguistic influence—at least partially—is the quantity and quality of the input the bilingual child is exposed to (Nicoladis, 2016). The development of the two languages, the bilingual's proficiency in different domains of the languages and the dominance of one language over the other depends strongly on the input and the use of the languages at home and in the environment (Paradis & Navarro, 2003; de Houwer, 2007; Argyri & Sorace, 2007; Paradis, 2011; La Morgia, 2016). The quantity of the input is measured by the length and amount or percentage of exposure. Quality of the input refers to the

type of input, e.g. the nativeness of the input (Paradis, 2011). It is obvious that children exposed to two languages simultaneously receive less input in each language than monolingual children. This may influence their speed of development and level of attainment in one or both languages.

However, more is not always better. This is claimed by Paradis & Genesee (1997) in a study on the emergence of functional categories by two bilingual English–French children, growing up in Montreal, Canada. In the speech of one child, inflection emerged earlier in French than in English, although he was exposed to more English. According to the authors, this demonstrates that the kind of input is more important than the quantity. In another study, Paradis and Navarro (2003) address the issue of whether the input bilingual children receive is qualitatively different from that of monolingual children and how this affects the bilinguals' language production. It may be assumed that the caretaker's language proficiency also affects the children's language use.

From a somewhat different perspective, Müller (1998) argues that a bilingual child uses transfer in those domains of the grammar where the language learner is confronted with ambiguous input, i.e. the input contains evidence for more than one grammatical analysis. The bilingual children in Müller's study faced problems with employing the correct word order in German. This may have been the result of feature transfer from the Italian, Spanish or French languages presenting unambiguous input into the German language, which presents ambiguous input. In a reaction to this study, Lanza (1998) states: "What exactly is the child's input? There is reason to believe that many of the interactions in which the bilingual children in Müller's study were involved were actually bilingual in character" (p. 182). Lanza emphasises the necessity of taking into account the context of the selected language utterances, in order to establish whether the nature of the input is more monolingual or bilingual.

2.4.3 THE ROLE OF AGE

Müller and Hulk's (2001) made a specific claim about the possibility of cross-linguistic influence. According to their original hypothesis, crosslinguistic influence occurs only before the C-domain is in place because the development of the C-domain ensures the anchoring of pragmatic onto syntactic principles. Their conclusion was based on a study of object omissions by young German–French, German–Italian and Dutch–French bilingual speakers, aged between 1;10 and 3;10. In the case of object drop—a structure that belongs to the interface between syntax and pragmatics— the children are exposed to overlapping language-specific rules. The effect was a developmental delay which the authors claim is due to crosslinguistic influence from the Germanic languages to the Romance languages (Müller & Hulk, 2001).

Since then, however, several studies have reported evidence of crosslinguistic influence

occurring after instantiation of the C-domain. A study conducted by Serratrice et al. (2004) found that the use of overt subjects (in contexts where they are not appropriate in Italian) by an English–Italian bilingual child was persistent over time. Likewise, Argyri and Sorace (2007), who examined English–Greek bilingual children with a mean age of 8 years, suggested that crosslinguistic influence can be found after the C-domain is in place. They argue that some areas of grammar continue to be vulnerable to crosslinguistic influence, even at a stage when children have already acquired full knowledge of the syntactic rules of their languages.

Sorace and Serratrice (2009) investigated the performance of English–Italian and Spanish–Italian bilinguals, monolingual English and Italian children and monolingual adults on an acceptability judgment task regarding Italian and English pronominal subject forms. They compared bilinguals living in the UK and bilinguals living in Italy. At first glance, the results seem to support the notion of age-related effects on crosslinguistic influence. In Italian, the younger bilinguals performed significantly less accurately in opting for the pragmatically appropriate null anaphor in no-topic-shift contexts, compared to older bilinguals (8–10 years old), monolinguals and adults. But interestingly, Sorace et al. (2009) observed that 8-year-old Spanish–Italian behaved similarly to English–Italian bilinguals in experiencing difficulties opting for the appropriate null subject in topic maintenance contexts. The authors interpreted this bilingual effect as a processing problem, indicating the influence of a second language regardless of the bilinguals' age and typological relatedness of the languages. They argue that bilingual children have fewer processing resources available and are less efficient than monolinguals at coordinating syntactic and contextual information.

According to the Competition Model, processing factors and issues of cognitive maturity and linguistic complexity are closely related to age. Despite high cue strength in adult speakers, the processing of subject-verb agreement for inverted word orders in Italian is not fully acquired until about eight years old (MacWhinney, 2005). According to Rothman (2009), interface-conditioned properties are more complex and, therefore, harder to acquire. "Cognitive maturity in this regard is needed for the acquisition of some aspects of language and so despite availability to input containing certain structures, some properties of language have their own time course which means that not all input matters, even if clearly available, at all ages" (Long & Rothman, 2014, p. 354).

Contrary to monolinguals, bilingual children are exposed to language-specific syntactic-pragmatic rules from two partially overlapping languages, a situation that is likely to cause delay in their development. So far, research into the use of discourse connectives, a structure belonging to the syntax-pragmatics interface, has been found to cause little difference between 7-year-old Dutch–Russian bilinguals and Dutch age-matched monolinguals (Tribushinina, 2015b). One of

the aims of the present study is to test whether this structure is more vulnerable to crosslinguistic influence in younger Dutch–Russian bilinguals. After all, it is possible that the older bilingual children tested in the previous studies had already developed a full C-domain, whereas deviant usage of connectives may have occurred earlier in their language development.

2.4.4 PROCESSING FACTORS

According to MacWhinney (2005), non-target-like performance could be related to limited processing capacities. The challenge of acquiring interface phenomena lies in the mapping of semantic or pragmatic properties into syntax. For bilingual children, this involves an ongoing competition between conflicting cues from two languages—an additional cognitive requirement that may interfere with the processing of complex phenomena in native-like ways. Likewise, Sorace and Serratrice (2009) argue that difficulties faced by bilinguals at external interfaces are related to processing limitations and that structural overlap between languages plays a less defining role. In a study on grammatical judgements of null and overt pronouns by English–Italian and Spanish–Italian bilingual children and adults, Serratrice et al. (2009) reported that all bilinguals accepted overt pronouns significantly more often than their Italian monolingual peers and adults. Spanish and Italian are pro-drop languages allowing both null and overt pronouns; in reference maintenance contexts null pronouns are preferred to overt pronouns. In the English language, null pronouns are ungrammatical. The similarities between the English–Italian and Spanish–Italian bilinguals suggest that bilingual children might experience more difficulties with processing syntactic–pragmatic function mappings, regardless of the language combination (Serratrice et al., 2009; Serratrice, 2013).

2.5 RUSSIAN AND DUTCH DISCOURSE CONNECTIVES

In this section, a description of the Russian and Dutch discourse connectives, illustrated with examples from the narratives, will be given in order to provide a context for what will be examined in this thesis. Two Dutch and two Russian additives used for clausal coordination were analyzed in each language. In Russian, the positive additive *i* 'and' has as a semantic-pragmatic profile that can be compared with Dutch *en* 'and' and English *and.* The semi-adversative additive *a* 'and/but' is similar to Dutch *en* 'and' and *maar* 'but' and English *and* and *but.*

Discourse connectives are linguistic devices connecting two coherent sentences or phrases. They indicate an implicit relation between the utterances. Languages tend to differ in the way coherence relations are expressed and may use various connectives with different functions or meanings. Basically, the Russian and Dutch languages differ from one another in terms of the functional domain—the expression of topic continuity—and the semantic interpretation of the

additive connectives (*i* 'and' and *a* 'and/but' in Russian and *en* 'and' and *maar* 'but' in Dutch). As markers of relational coherence, these discourse connectives are an ideal testing ground for the interface hypothesis. They meet Hulk and Müller's (2000) conditions for grammatical constructions at the syntax-pragmatics interface since there is structural overlap across two languages at the surface level. This will be further explained in the following sections.

2.5.1 RUSSIAN ADDITIVE AND ADVERSATIVE CONNECTIVES

When telling a story, a speaker can—after the introduction of a character—either go on maintaining this character in topic position (realized as reference maintenance) or switch to another topic than the one in the previous utterance (realized as reference shift). In Russian, as in Dutch, additive connectives are used for the syntactic coordination of clauses, but in Russian the choice of a connective depends on the discourse characteristics of the specific topic situation. In contrast, the Dutch additive connectives are not semantically specified for topic maintenance or shift. In an eye-tracking study among Russian and Dutch speakers, Mak, Tribushinina and Andreiushina (2013) found that in the processing of referential development in discourse, the Russian-speaking participants were guided by the semantic make-up of the Russian connectives. This was not the case for the Dutch participants.

The standard function of Russian *i* 'and' is to coordinate sentences or clauses with one referent, as in (1). The subject in the second clause is identical to the subject in the first clause, thus ensuring topic continuation.

(1) *I tut koška podbežala.* **I** *ona xotela ėto dostat'.* (Kostja 4:08, r_009_cat.rtf)
    And here the cat came running, **and** she wanted to take it.

There are several ways to express topic maintenance, while allowing the use of *i* 'and' after switching referents. One of the possibilities which is often observed in child speech is the use of *i* 'and' in clauses involving a causal relation, as in (2):

(2) *Ptička vzjala rybku.* **I** *lisička pobežala lovit'.* (Islam, 6;08, r_td_6_089_fox)
    The bird took the fish, **and** the fox started running to catch (the fish).

In the second clause, a new referent is introduced, but the events described in the two discourse segments are related: the fox started running to take the fish from the bird. In that case, use of *i* 'and' is felicitous because the causal relation supports the notion of topic continuity.

The application of the Russian connective *a* 'and/but' is preferred for additive relations between two referents. The activities are conducted simultaneously, as in (3), or there is a semantic contrast between the two referents, as in (4):

(3)   *Kot polez k ptenčikam, **a** sobaka smotrit na kota.* (Paulina, 6;02, br6_063_cat)
            The cat climbed up to the nestlings, **and** the dog looked at the cat.

(4)   *Rossijskaja futbol'naja komanda – sil'naja, **a** gollandskaja komanda – slabaja.*
            The Russian football team is strong**, and/but** the Dutch team is weak.

In addition, the connective *a* 'and/but' can be used for reference maintenance, but only when two utterances (with one referent) express a contrast relation, as in (5), or a correction, as in (6):

(5)   *Tam ona stojala na toj kartinke, **a** na ė~toj kartinke – sela.* (Galina, 43, a_014_cat)
            There in that picture she was standing, **and/but** in this picture – she sat down.

(6)   *Kot ispugalsja sobaki, **a** ne materi-pticy.* (Maria, 19, a_025_cat)
            The cat was scared of the dog, **and/but** not of the mother-bird.

In order to apply the correct connective, a speaker of Russian must choose between *i* 'and' and *a* 'and/but', thus coordinating syntactic knowledge with the discourse characteristics of the specific situation. This is a prototypical phenomenon of the syntax-discourse interface. An incorrect form does not result in an ungrammatical sentence, but in a pragmatically inappropriate utterance.

2.5.2 DUTCH ADDITIVE AND ADVERSATIVE CONNECTIVES

The Dutch connectives *en* 'and' and *maar* 'but' are more flexible than their Russian counterparts. They have no semantic restrictions with respect to reference maintenance and reference shift. In additive contexts, the two connectives are interchangeable. However, the results from a corpus study by Mak, Tribushinina and Andreiushina (2013) reveal that *en* 'and' prefers a maintenance above a shift continuation and *maar* 'but' prefers a shift continuation above a maintenance continuation. Examples of *en* 'and' in a maintenance and a shift context are given in (7) and (8).

(7)   *En dan laat de vogel het los **en** die gaat wegvliegen.* (Fem, 6;7, n6_078_fox)
            And then the bird lets go, **and** it flies away.

*(8)   De kraai pakt de vis. **En** de vos pakt ook vis.* (Pia, 5;0, n5_028_fox)

The crow takes the fish. **And** the fox also takes the fish.

Examples of the use of *maar* 'but' in maintenance and shift contexts are give in (9) en (10).

*(9)   En de vos wil op de tak gaan, **maar** dat kon de vos niet.* (Taisa, 5;2, bn5_110_fox)

And the fox wanted to go on the branch, **but** the fox could not do that.

*(10) Toen pakt de vos de vis en wou die opeten. **Maar** die vogel die wou vastpakken.*

(Taisa, 5;2, bn5_110_fox)

Then the fox takes the fish and wanted to eat it. **But** that bird that wanted to grab (it).

In conclusion, the Dutch language is ambiguous in the use of *en* 'and' and *maar* 'but'. In examples (7) and (8), *maar* 'but' would be equally accepted. In examples (9) and (10), *en* 'and' would be equally accepted. The Russian language is unambiguous in these cases, allowing reference maintenance only after the positive connective *i* 'and' and reference shift after the semi-negative connective *a* 'and/but', that is, in the absence of certain conditions. The languages overlap where *i* 'and', and *en* 'and' are used in maintenance contexts and *a* 'and/but' and *maar* 'and/but' in shift contexts, as shown in the white cells of Table 1. These are the areas where— according to Hulk and Müller's (2000) interface hypothesis—crosslinguistic influence is expected – from the Russian (unambiguous) language to the Dutch (ambiguous) language. The hypothesis predicts the overuse of *en* 'and' in maintenance contexts and *maar* 'but' in shift contexts because these options are reinforced by both languages.

Table 1. Connectives and Topic Continuity in Russian and Dutch

	positive additive connective 'and'		(semi) negative additive connective 'but'	
	Dutch	Russian	Dutch	Russian
Maintenance	*en*	*i*	**maar**	*(constrained)*
Shift	**en**	*(constrained)*	*maar*	*a*

If connective use in Russian is influenced by the dominant Dutch language, it can be expected that bilingual children over-use *i* 'and' in reference shift contexts, since *en* 'and' is used for both maintenance and shift. Another logical expectation would be for bilinguals to over-use *a*

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'and/but' in maintenance contexts, since *maar* 'but' is also used for maintenance and shift continuation in Dutch. In previous research, however, this expectation failed to come true (Tribushinina et al., 2015b). Whether this failure can be attributed to the absence of a Dutch counterpart with the same characteristics as the semi-negative Russian connective *a* 'and/but' will be described in section 3.1.

2.6. THE DUTCH–RUSSIAN BILINGUAL CONTEXT

The identification of the defining factors in crosslinguistic transfer has been of great importance. Since Müller and Hulk (2001) first published their influential interface hypothesis, more than a decade's research on the areas susceptible to influence has been done (Serratrice, 2013). In this respect, the use of additive connectives in the Dutch–Russian bilingual context is an interesting subject for several reasons. First, it may shed light on the question of whether the effects of transfer are qualitative (i.e. unattested in monolingual language acquisition) or quantitative in nature (i.e. only quantitative differences between monolinguals and bilinguals are observed). Second, the phenomenon of relational coherence belongs to the interface between syntax and discourse, and there is overlap between the Russian and Dutch language systems in terms of correct usage of connectives. These are the two conditions for transfer, according to the interface hypothesis. However, recent research on relational coherence has found no evidence for crosslinguistic influence in the direction in which it is predicted to occur. Tribushinina et al. (2015b) investigated connective use by 7-year-old children but found that Dutch–Russian bilinguals use Dutch discourse connectives in the same way and with the same frequency as Dutch monolingual children. On the contrary, in comparison with their Russian monolingual peers, significant differences were found in the overuse of the Russian connective *i* 'and', which may be the result of a lack of exposure to the non-dominant language.

In Study 1 of the present thesis, I explore the issue of crosslinguistic influence with respect to age. The study examines bilingual children of younger age groups than those tested by Tribushinina et al. (2015b) and aims to find out whether possible crosslinguistic influence has a potentially greater effect on earlier stages of language acquisition. Following Hulk and Müller's principles of structures within the CP-domain, it is expected that younger bilingual children are more susceptible to crosslinguistic influence, and that the differences between bilingual and monolingual children are more salient in earlier stages of acquisition. If differences are found between younger and older bilinguals, I believe there are at least two explanations. First, the differences are indeed manifestations of crosslinguistic influence at the syntax-pragmatics

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interface. Second, the interaction between the languages of younger bilinguals can be attributed to language-external variables, i.e. input quality or language dominance.

In Study 2 of this thesis, I explore the role of input quality. Several studies have examined the impact of input quantity or input quality on bilingual language acquisition (Paradis & Genesee, 1997; Paradis & Navarro, 2003; Montrul, 2004). Montrul (2004) argues that quite often, bilingual children receive input in their 'weaker' language from speakers who are under the process of attrition. As a result, the input differs from the input that typical monolingual children receive. Study 2 contains a contrastive analysis of narratives told by the Russian-speaking parents of bilingual children, living in the Netherlands, and narratives told by Russian monolingual adults, living in Russia. The analysis aims to find out whether the parents' connective production, i.e. the distribution of connectives across discourse functions, differs from that of the Russian adults. If input quality affects crosslinguistic influence, then the bilingual children's input in their weaker language (Russian) should be qualitatively different from the input monolingual children would receive with regard to the investigated structures. If, however, the parental input is not modified by the language of the (Dutch) environment, then crosslinguistic influence in terms of differences in connective use by monolingual and bilingual children must be attributed to other variables than input quality.

In sum, two types of research have been applied. Study 1 pursued the question of whether the pattern of crosslinguistice influence in younger children was different from the one observed in 7-year-olds (Tribushinina et al., 2015b). Study 2 explored the influence of parental input on connective use by bilingual Dutch–Russian children.

3   STUDY 1

This study compares the use of discourse connectives by 4-, 5- and 6-year-old Dutch–Russian bilinguals with monolinguals in both languages. First, the frequency of use was counted, supplemented by a contrastive analysis of the discourse–pragmatic context. The general research question is concerned with two issues: i) investigating whether the predictions of the interface hypothesis (Hulk & Müller, 2000) apply to younger bilingual children (aged 4–6), and ii) investigating whether the effects of crosslinguistic influence could be attributed to language dominance.

3.1 FREQUENCY – A QUANTITATIVE ANALYSIS

In the Dutch and Russian languages, additive connectives differ in terms of the conceptual space of topic continuity, and in terms of the functional domain – the way the connectives are used in discourse, as explained in section 2.5. It is understandable that bilingual children experience problems with the acquisition of the different semantic profiles of connectives in their two languages, and crosslinguistic influence, in one form or another, can be expected.

Tribushinina et al. (2015b) studied types and frequencies of errors in connective use by 7-year-old Dutch-Russian simultaneous bilingual children. The findings revealed crosslinguistic influence, although not from the language with two options onto the language with one option. In Dutch, bilinguals did not over-use *en* 'and' for reference maintenance and *maar* 'but' for reference shift, as would be expected from the interface hypothesis. Due to influence from the dominant Dutch language, the Dutch–Russian bilinguals over-used Russian *i* 'and' and under-used *a* 'and/but' in cases of clausal coordination with reference shift. They did not, however, use *a* 'and/but' for maintenance more than monolinguals. The connective *a* 'and/but' does not have a one-to-one counterpart in Dutch and is therefore less affected by crosslinguistic influence (Tribushinina et al., 2015b). An explanation for this can be found in the Activation Threshold Hypothesis (Paradis, 2004). When an L1 linguistic element has no equivalent form in the L2, the L1 is not in competition with the L2 and is therefore not inhibited by the dominant language. In such situations, interference or attrition does not occur. In a study among Turkish-English bilinguals, Gürel (2004) found that Turkish attritors under the influence of L2 English treated the Turkish pronoun *o* 'he/she' as identical to the English overt pronoun. However, they maintained the binding properties of the overt nominative reflexive *kendisi* 'oneself' in the absence of an

analogous English counterpart. Polinsky (1997) found similar non-random influence in attrited speakers of Russian who gradually lost verbal reflexes, but retained those which did not have an non-reflexive counterpart in English.

In view of the findings of Tribushinina (2015b), which do not corroborate the interface hypothesis, the present study seeks to investigate whether younger simultaneous bilinguals differ from older bilingual children with respect to crosslinguistic susceptibility. By examining the connective frequencies across discourse functions among Dutch–Russian bilingual children of younger age groups and comparing them to the connective frequencies of their Dutch monolingual peers, I can make predictions about the bilingual acquisition of connectives in the Dutch language, in line with Hulk and Müller's (2000) interface hypothesis. The predictions are:

1) The Dutch–Russian bilinguals in the younger age groups (aged 4–6) will use Dutch *en* 'and' more often for reference maintenance compared to age-matched monolinguals.
2) The Dutch-Russian bilinguals in the younger age groups (age 4–6) will use Dutch *maar* 'but' more often for reference shift compared to age-matched monolinguals.

These predictions are based on the assumption that crosslinguistic influence is likely to occur when there is partial structural overlap between the two languages. The influence will be uni-directional from the unambiguous Russian language, where the particular structure lends itself to one analysis (*i* 'and' for reference maintenance and *a* 'and/but' for reference shift), to the ambiguous Dutch language, where the structure lends itself to more than one analysis (in maintaining and switching referent situations both *en* 'and' and *maar* 'but' are allowed). The second assumption is that crosslinguistic influence is expected to be found especially in earlier stages of language acquisition (Hulk & Müller, 2000; Müller & Hulk, 2001).

If, in contrast, language dominance in terms of quantity and quality of input were an explanatory factor for the directionality of crosslinguistic interaction, no influence from the Russian language would be predicted. In that case, no differences between bilingual and monolingual Dutch children will be established.

Assuming that input and exposure to the Dutch language is more likely to affect cross-linguistic interaction, it is expected that differences between younger bilingual and monolingual children's use of connectives can be attributed to influence from the dominant Dutch language on the weaker Russian language. By examining the frequencies of Russian additive connectives among Dutch–Russian bilingual children and comparing them to those of their Russian monolingual peers, I can make predictions about the bilingual acquisition of connectives in the Russian language. The prediction is:

3) The Dutch–Russian bilinguals in the younger age groups (age 4–6) will use Russian *i* 'and' more often for reference shift compared to age-matched monolinguals.

This prediction is based on the assumption that young bilingual children are less able to inhibit the language of the dominant Dutch environment when they speak Russian, resulting in the activation of the Dutch morphosyntactic structure *en* 'and' for reference shift. No such effect is expected for the referential preference of *a* 'and/but' by bilinguals; this connective does not seem to be affected by crosslinguistic influence, as reported by Tribushinina (2015b). The task of connective choice may be further challenged by the fact that the activation of syntactic and pragmatic knowledge in the 'weaker' Russian language requires a high processing load (Mac-Whinney, 2005).

According to Hulk and Müller's hypothesis, only interface phenomena lend themselves to crosslinguistic influence, and only from the unambiguous to the ambiguous language, which means no influence from Dutch to Russian would be expected to occur among bilingual Russian–Dutch children in their acquisition of additive connectives.

The three hypotheses will be tested by analyzing narratives, told by monolingual and bilingual children, in terms of frequency and distribution of connectives across discourse functions.

3.2 QUALITY – A CONTRASTIVE ANALYSIS

Besides reporting on overall frequency rates, I will look at the quality of connective production by analyzing the contexts in which connectives are used by bilingual children, compared to monolingual children.

In Dutch, the connectives *en* 'and' and *maar* 'but' are interchangeable in contexts of both reference maintenance and reference shift. Differences in the quality of connective production among bilingual and monolingual children should not be considered here because variation in the use of *en* 'and' and *maar* 'but' across the two contexts rarely leads to infelicitous sentences. In the Russian language, however, the connectives *i* 'and' and *a* 'and/but' are not equally acceptable. The Russian connective *i* 'and' is used for reference maintenance, unless there is an obligatory causal relation between the clauses. A causal relation ensures that topic continuity is preserved. The Russian connective *a* 'and/but' is used for reference shift, unless there is a contrast relation involved. Previous research has shown that bilingual children have difficulties with the production of these discourse connectives in Russian (Tribushinina et al., 2015b; Tribushinina et al., forthcoming). I predict that the Dutch–Russian bilinguals linguisti-

cally mark *i* 'and' more often than age-matched monolinguals when there is no causal relation involved and *a* 'and/but' would be more appropriate. This prediction is based on the supposition that bilingual children reveal influence from the dominant or strong language in their weak language (Argyri & Sorace, 2007).

3.3 METHOD AND DATA

The use of connectives is investigated by means of picture story retelling, a semi-spontaneous elicitation technique suitable for the purpose of this study because it requires the children to express relational coherence through applying various discourse connectives.

3.3.1 RESEARCH DATA

The data for this corpus-based study are derived from CHILDES, Bilingual Corpora: Discourse BiSLI[2] (Tribushinina, 2015b). The data incorporate a selection of stories told by children in the presence of an experimenter and are based on pictures that were shown to the children by the experimenter. The pictures of the story are shown in Appendix 1. The stories in the CHILDES database were audio taped and then transcribed and coded with CLAN.

Two narratives, with three animate characters in each story, were elicited. In the Fox Story (Gülzow & Gagarina, 2007), a bird and a fox fight for a fish and try to take away the fish from each other. In the Cat Story (Hickmann, 2003), a cat tries to catch some chicks while the mother-bird has left the nest to look for food, but a dog drives the cat away. The different characters and the sequence of events make the stories suitable for research on the use of additional connectives because children have to choose between the appropriate forms for reference maintenance and reference shift in order to tell a cohesive story.

3.3.2 SUBJECTS

For the purpose of this study, I selected the stories of 56 Dutch–Russian bilinguals, 67 Dutch monolingual children and 65 Russian monolingual children from the database. The monolingual data were collected from monolingual children in the Netherlands and Russia, who told either the Cat or the Fox story. The bilingual data were collected from children who were born in the Netherlands and were raised bilingual from birth. They told the Cat or Fox story in one language and, after a period of at least two weeks, they told the Fox or Cat story in the other language.

Based on the operationalization of dominance as explained in section 2.4.1, the bilinguals were classified as Dutch dominant. In most of the cases, the mother of the bilinguals is a native speaker of Russian. An overview of the subjects is presented in Table 2.

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[2] childes.psy.cmu.edu/access/Biling

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Table 2. Overview all subjects in Study 1

N	Group	Male	Fe-male	Age range in year; months	Avg age months	Fox Story Russian	Cat Story Russian	Fox Story Dutch	Cat Story Dutch
24	Monolingual Dutch 4 years	14	10	4;00 – 4;08	52	---	---	11	13
15	Bilinguals Dutch-Russian 4 years	8	7	4;00 – 5;01	54	4	11	11	4
22	Monolingual Russian 4 years	8	14	4;01 – 4;11	56	11	11	---	---
23	Monolingual Dutch 5 years	13	10	5;00 – 5;11	66	---	---	11	12
21	Bilinguals Dutch-Russian 5 years	11	10	5;00 – 5;11	65	13	8	8	13
22	Monolingual Russian 5 years	12	10	5;04 – 5;11	66	11	11	---	---
20	Monolingual Dutch 6 years	12	8	6;00 – 6;10	78	---	---	10	10
20	Bilinguals Dutch-Russian 6 years	13	7	6;00 – 6;11	78	7	13	13	7
21	Monolingual Russian 6 years	11	10	6;00 – 6;11	77	10	11	---	---

3.3.3 PROCEDURE AND CODING

The following functions were assigned to the Dutch connectives *en* 'and' and *maar* 'but': clausal coordination with reference maintenance or clausal coordination with reference shift. The same functions were assigned to the Russian connectives *i* 'and' and *a* 'and/but'.

The connective *en* 'and' was sometimes used for VP and NP coordination, as in examples (1) and (2) respectively. These functions were not considered in this study because they do not serve a discourse-pragmatic purpose.

(1) *De vogelmoeder komt terug **en** legt de wormen in het nest* (Sam, 6;04, n6_093_cat)

   The mother bird returns **and** puts the worms in the nest.

(2) *Nu is er een nest **en** een poes **en** een hond.* (Gust, 6;04, n6_099_cat)

    Now there is a nest **and** a cat **and** a dog.

      Instances of *en* 'and', *i* 'and' and *a* 'and' in sequential connectives such as the Dutch *en toen, en dan* 'and then' and the Russian *a potom* 'and then' were widely applied by all children (see examples (3) en (4), but were also not considered in this study. They seem to be proto-typically used by young children to organize the story chronologically or as a filler to start an utterance (Aarssen, 1996, p. 133).

(3) ***En dan** laat die vogel de vis vallen **en dan** neemt de vos hem mee.* (Kyra, 6;05,
    n6_067_fox)

    And then that bird drops the fish **and then** the fox takes it.

(4) ***A potom** koška ubegaet, a sobaka dogonjaet košku.* (Karina, 6;0, r—048.rtf)

    And then the cat runs away, and the dog chases the cat.

      For the frequency analysis, the coding method produced four possible structures in each language: reference maintenance and reference shift with both *en* 'and' and *maar* 'but' in Dutch and reference maintenance and reference shift with both *i* 'and' and *a* 'and' in Russian.

      As the number of participants varied among the groups and the length of stories was not equal, the number of occurrences of a particular structure varied as well. In order to make a valid comparison between monolinguals and bilinguals, I have related the number of occurrences of a structure to the number of utterances per story. CLAN functions were used to calculate the number of utterances and mean length of utterance per story. The fixed and proportional occurrences of the connectives were represented in Excel. The final analyses of the data were performed using SPSS Statistics.

3.4 RESULTS FROM THE DUTCH NARRATIVES

The results obtained from the analysis of the Dutch narratives distinguish for Reference (maintenance-shift), Connective (*en* 'and'-*maar* 'but') and Group (monolingual- bilingual). The connective frequencies per utterance by group and by discourse continuation are presented in Figure 1.
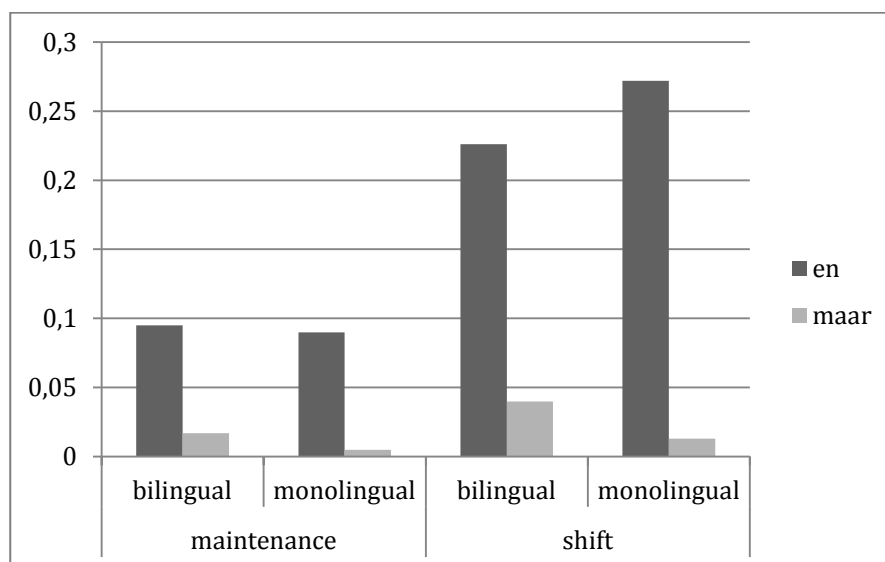
Figure 1. Frequency per utterance of the Dutch connectives *en* 'and' and *maar* 'but'
             by group and discourse continuation

A Repeated Measures Anova was conducted to compare the monolinguals and bilinguals on the use of connectives in shift and maintenance contexts, with two within subjects factors: Connective (*en* 'and' versus *maar* 'but') and Reference (maintenance versus shift) and two between subjects factors: Group (mono-lingual versus bilingual) and Age Group (4-, 5-, and 6-years-old) . P-values smaller than .05 were considered to be statistically significant.

There was a main effect of Reference $(F(1,117) = 46.26, p < .001)$: more shift continuations (M = .139, SE = 0.12) than maintenance continuations (M = .052, SE = .006) were produced. There was also a main effect of Connective $(F(1,117) = 101.23, p < .001)$. The connective *en* 'and' (M = .173, SE = .015) was used more often than *maar* 'but' (M = .018, SE = .004). While only 24 out of 123 children have deployed the connective *maar* 'but', the number of instances was found to be so small as to be negligible for further statistical analysis. There was a main effect of Age Group $(F(F1,117) = 13.365, p < .001)$. A post hoc test showed that the 6-year-olds used more *en* 'and' (M = .279, SE = .036) than 5-year-olds (M = .113, SE = .009) and 4-year-olds (M = .125, SE = .020).

Finally, the analysis revealed no main effect of Group $(F(1,117) = .13, p =.723)$, nor any interaction effects with Group, confirming that there was no significant difference between the monolinguals and bilinguals in the distribution of connectives realized in different functions. As a result, the two groups can be considered on par in their realization of the additive connectives.

3.5 RESULTS FROM THE RUSSIAN NARRATIVES

The results obtained from the analysis of the Russian narratives distinguish for Reference (maintenance versus shift), Connective (*i* 'and' versus *a* 'but') and Group (monolingual versus bilingual). The connective frequencies per utterance by group and by discourse continuation are presented in Figure 2.
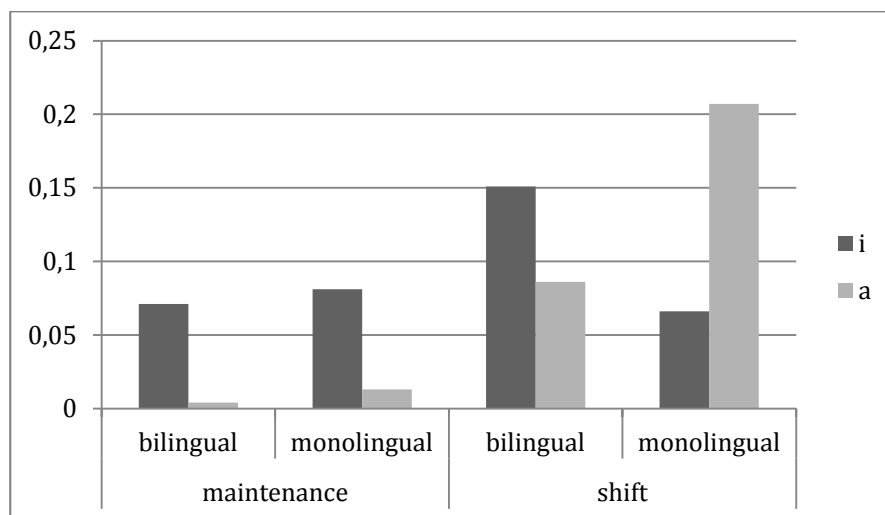

Figure 2. Frequency per utterance of the Russian connectives *i* 'and' and *a* 'but' by
         group and discourse continuation

As in the case of the Dutch data, a Repeated Measures Anova with four factors was conducted to compare the Russian monolinguals and Dutch-Russian bilinguals on the use of connectives in shift and maintenance contexts. The analysis was performed with two within subjects factors: Connective (*i* 'and' versus *a* 'but') and Reference (maintenance versus shift) and two between subjects factors: Group (monolingual versus bilingual) and Age Group (4-, 5-, 6-years-old).

There was no main effect of Age Group (F(2,115) = .98, p = .379), and no interactions with Age Groups, meaning that the age of the children, 4, 5, or 6 years old, did not have an effect on the way they assigned connectives to functions. The main effect of Reference was significant (F(1,115) = 121.07, p < .001), showing that overall, participants were more likely to use reference shift (M = .127, SE = .008) than reference maintenance (M = .043, SE = .005).

There was a highly significant 3-way interaction effect of Group, Connective and Reference (F(1,115) = 36.25, p = < .001), suggesting that the monolinguals and bilinguals differed in the extent to which they chose *i* 'and' or *a* 'and/but' depending on referential development. Bilinguals used *i* 'and' in shift contexts more often (M = .151, SE = .05 than monolinguals (M = .066, SE = .014). Monolinguals used use *a* 'and/but' more often (M = .207,

SE = .016) in shift contexts than bilinguals (M = .086, SE = .017). There was no significant difference in the use of *a* 'and/but' in maintenance contexts between bilinguals (M = .004, SE = .004) and monolinguals (M = .013, SE = .004). In order to identify the exact source of the difference, a post hoc analysis was conducted on the data of monolingual and bilingual children.

The data of the monolinguals revealed a main effect of Connective ($F(1,64) = 9.70$, p = .003). Monolinguals used *a* 'but' more often (M = .110, SE = .009) than *i* 'and' (M = .074, SE = .008). A main effect of Reference ($F(1,64) = 88.80$, p < .01) showed that the monolinguals applied shift continuations more often (M = .136, SE = .009) than maintenance continuations (M = .047, SE = .006). The monolingual data showed a 2-way interaction of Connective and Reference ($F(1,64) = 98.59$, p < .001). Monolinguals used *a* 'but' more often for reference shift and *i* 'and' for reference maintenance.

As in the case of the monolinguals, the data of the bilinguals revealed a main effect of Connective ($F(1,55) = 17.20$, p < .001). But unlike the monolinguals, they used *i* 'and' more often (M = .111, SE = .013) than *a* 'but' (M = .045, SE = .009). There was also a main effect of Reference ($F(1,55) = 39.58$, p < .001), meaning more shift continuations (M = .119, SE = .013) than maintenance continuations (M = .038, SE = .007) were detected. In contrast to the findings in the monolingual data there was no 2-way interaction effect of Connective and Reference ($F(1,55) = .004$. p = .950). In maintenance as well as shift continuations, bilinguals chose *i* 'and' more often than *a* 'but'.

The outcomes of the monolinguals and bilinguals are shown in Figure 3.
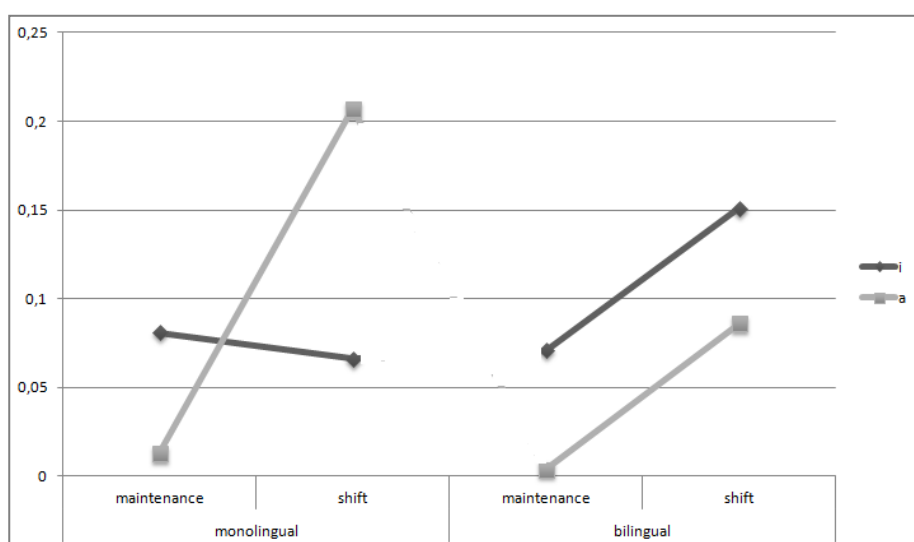

Figure 3. Frequency per utterance of the Russian connectives *i* 'and' and *a* 'but' by group and discourse continuation

3.6 RESULTS FROM THE CONTRASTIVE ANALYSIS

The previous section has shown that bilingual children used *i* 'and' considerably more for reference shift than monolingual children, who used *a* 'and/but' more for this function. These quantitative data indicate that bilingual children overuse *i* 'and' suggest that bilingual children have difficulties applying *i* 'and' appropriately.

In the Russian language, the connective *i* 'and' is by default used for reference maintenance. The use of *i* 'and' is also appropriate for clausal coordination in reference shift contexts, implying a causal relation between the clauses, as in example (5), where the cat leaped off the tree because the dog appeared and then the dog started chasing the cat:

(5) *I potom sobaka pobežala, **i** koška sprygnula **i** sobaka pobežala za nej. (*Daniil,6;01, r_td_6_069_cat.cha)

And then the dog came running, **and** the cat leaped off **and** the dog ran after her.

An example of a pragmatically inappropriate use of *i* 'and' is given in example (6):

(6) *Koška na derevo počti uže zalezla**, i** sobaka vsë bliže i bliže podchodila.*(Sofia, 5;11, br5_167_cat)

The cat had nearly reached the top of the tree, **and** the dog came closer and closer.

There is no causal relationship between the two events, so *a* 'and/but' would be appropriate here.

The Russian connective *a* 'and/but' is by default used for reference shift, unless there is a contrast relation involved. In contrast with *i* 'and', shift-contexts with *a* 'and/but' caused few difficulties. An example of an incorrect use of *a* 'and/but' for reference shift is found in (3):

(7) *Sdelala jajca, **a** iz jaic=jajcev@err vylupilis' cypljata.* (Kostja, 4;08,r_td_4_009_cat.cha)

She laid eggs **and** the chicks hatched.

The referent in the first clause is the bird, and the referent in the second clause is the chicks. In this case, there is a clear causal relation between the clauses, and Russian would require *i* 'and'. There were only a few reported cases of this type.

Finally, some deviant uses of *a* 'and/but' in maintenance-contexts were found. The connective *a* 'and/but' is used for reference maintenance when two clauses with one referent express a

contrast relation or a correction. An example of this inappropriate use of *a* 'and/but' is found in (8). There is no topic shift between the first two clauses, and *i* 'and' should have been used instead of *a* 'and'.

(8) *Koška chotela s'est' cypljat.* **A** *koška polezla na derevo, čtob s'est' cypljat.* (Ul'jana, 4;08, r--021--cat.rtf)

The cat wanted to eat the chicks. **And** the cat climbed up the tree to eat the chicks.

The contrastive analysis looked into the way the monolingual and bilingual children used additive connectives in topic maintenance and topic shift contexts and how they related *i* 'and' and *a* 'and/but' to functions. The coding for the contrastive analysis of the Russian data produced seven possible structures: *i* 'and' in maintenance context, *i* 'and' in shift contexts as topic maintenance with and without causal relation, *a* 'and/but' in shift contexts with and without causal relation, and *a* 'and/but' as topic maintenance with and without semantic contrast. The results of the analysis for *i* 'and' are shown in Table 3. The grey cells give an indication of non-default usage.

Table 3. Use of additive connective *i*'and' related to discourse contination, monolinguals and bilinguals

Connective	Discourse continuation	Monolinguals	Bilinguals
i'and'	topic maintenance	81 (100%)	52 (100%)
total use of *i* 'and' in maintenance contexts		**81**	**51**
i'and'	topic maintenance with causal relation	31 (53%)	78 (50%)
	topic maintenance without causal relation	27 (47%)	77 (50%)
total use of *i* 'and' in shift contexts		**58**	**155**

Reference shift without a causal relation was frequently applied by all children, and the monolinguals used the non-default option only slightly less than the bilinguals: 47% (monolinguals) versus 50% (bilinguals) of the total usage of *i* 'and' occurred in shift contexts without a causal relation. A Pearson Chi Square test confirmed that this was not significant χ^2 (1, N = 213), = .165, p = .685.

The results of the analysis for *a* 'and' are shown in Table 4. The grey cells give an indication of non-default usage.

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Table 4. Use of additive connective *a* 'and/but' related to discourse continuation, monolinguals and bilinguals

Connective	Discourse continuation	Monolinguals	Bilinguals
a 'and/but'	topic shift without causal relation	187 (95%)	52 (95%)
	topic shift with causal relation	9 (5%)	3 (5%)
total use of *a* 'and/but' in shift contexts		**196**	**55**
a 'and/but'	topic maintenance with semantic contrast	5 (33%)	2 (50%)
	topic maintenance without semantic contrast	10 (67%)	2 (50%)
total use of *a* 'and/but' in maintenance contexts		**15**	**4**

Only 10 out of 65 monolinguals and 4 out of 56 bilinguals applied *a* 'and/but' in maintenance contexts. The frequency of usage was too low to make a valid conclusion about the quality of usage.

3.7 DISCUSSION

This study investigated the use of additive connectives by simultaneous bilingual children acquiring Dutch and Russian, across three age groups. For Dutch, the results of the narrative production task of the 4-, 5- and 6-year-old children are consistent with those of Tribushinina (2015b), who studied the connective use among 7-year-olds. The younger bilinguals were not different from their monolingual peers in their use of additive connectives.

For Russian, the results of this study indicate that the bilingual children deviate from their monolingual peers. Bilinguals in all three age groups used *i* 'and' more in shift contexts and monolinguals used *a* 'and/but' more in reference shift contexts. These results are also consonant with the earlier findings of Tribushinina (2015b) on 7-year-old children. An explanation for the deviant connective use of bilinguals can be found in the semantic properties of the connectives. Dutch additive connectives are not specified for reference maintenance or reference shift; they are interchangeable in both situations. In Russian, however, *i* 'and' is, by default, specified for maintenance continuations and *a* 'and/but' for shift continuations. The bilingual children seem to extend the use of *i* 'and' from maintenance to shift continuations under the influence of their dominant Dutch language, in which *en* 'and' is acceptable in both maintenance and shift contexts (Tribushinina, 2015b).

Also concordant with the results of the 7-year-old bilinguals is that the 4-, 5-, and 6-year-old bilingual children did not use *a* 'and/but' for maintenance more than monolinguals. Apparently, the semi-negative connective *a* 'and/but' is not sensitive to crosslinguistic influence because it does not have a direct counterpart in Dutch. Similar findings were reported by

Polinsky (1997) with respect to the use of verbal reflexes by Russian attrited speakers. Such linguistic elements do not seem to be affected by cross-linguistic interference because they do not have a counter element in the other language to compete with (Gürel, 2004; Polinsky, 1997; Tribushinina, 2015b).

The core of the differences in connective use between the bilingual and monolingual children does not lie in the production rates of connectives alone, but rather in the distribution of connectives over functions. The monolingual Russian children in the investigated age groups clearly differentiate for *i* 'and' and *a* 'and/but' in maintenance and shift contexts, while the bilinguals do not seem to make this distinction.

Turning now to my predictions, the interface hypothesis (Hulk & Müller, 2000) predicted that the Dutch–Russian bilinguals aged 4–6 would use Dutch *en* 'and' more often for reference maintenance compared to age-matched monolinguals. The second prediction was that these bilinguals would use Dutch *maar* 'but' more often for reference shift compared to age-matched monolinguals. These predictions were not borne out in the sense that there were no differences between bilinguals and monolinguals in the three age groups overall. Also, the use of *maar* 'but' was too low to make reliable comparisons.

With respect to the Russian data, I predicted that there might be crosslinguistic influence in the other direction i.e. the Dutch–Russian bilinguals would use Russian *i* 'and' more often for reference shift compared to age-matched monolinguals. This prediction was confirmed for all age groups. Apparently, bilingual children have difficulties inhibiting the language of the dominant Dutch environment, which leads to an increased use of *i* 'and', beyond what we found among Russian monolinguals (Argyri & Sorace, 2007; Meisel, 2007). Or, according to MacWhinney (2005), the phenomenon can be explained by the fact that bilinguals have less capacity available to process the competing information from two languages—processing capacity which is needed to produce the complex structures at the syntax–pragmatics interface. The kind of input in the non-dominant language could also play a role in the over-use of *i* 'and'. This will be explored in Study 2. First I will discuss the results of the contrastive analysis.

The final prediction concerned the quality of use, i.e. the expectation that bilingual children would mark *i* 'and' for reference shift when no causal relation is involved more often than monolinguals. The data did not confirm these predictions. Bilinguals over-used *i* 'and' in reference shift contexts compared to monolinguals, but the difference between cases with and without causal relation was not significant and constitutes merely a quantitative variation. Monolinguals chose *i* 'and' in shift contexts without causal interpretation in 47% and bilinguals in 50% of all cases where *i* 'and' was used for reference shift. These results are, to say the least, surprising. In the error analysis of Tribushinina (2015a), Russian monolingual children (mean

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age 7;04) were reported to choose *i* 'and' in the absence of a causal relationship in only 10% of the cases where *i* 'and' was used for reference shift. One possible explanation for the unexpected finding in the present study is the younger age of the children investigated in this study. Younger children may need more time to acquire these complex language phenomena. The finding could also be attributed to the assumption that crosslinguistic influence reinforces phenomena that are also attested in monolingual development (Serratrice, 2013), a view that finds its source in the Autonomous Development Hypothesis, according to which the language development of a bilingual is not qualitatively different from that of a monolingual (Meisel, 2001). Subsequently, the effects of the Dutch language on the Russian language manifest themselves mainly as quantitative differences.

In conclusion, the data of Study 1 do not support the main principle of the interface hypothesis, namely that crosslinguistic influence occurs in cases of partial structural overlap between two languages, and that dominance is irrelevant, nor do they corroborate the assumption that crosslinguistic influence is more likely to occur in earlier stages of language acquisition. The framework of language dominance—as it predicts no influence from the weaker Russian language onto the stronger Dutch language, but rather in the reverse direction—is a more plausible explanatory factor for the Dutch and Russian results.

4   STUDY 2

The results of Paradis and Navarro's (2003) study on the use of overt subjects by a Spanish–English bilingual child suggest that the output of the child may be affected by identical variables in the speech of the child's parents. In the same vein, Sorace (2004) argued that native speakers who live in a foreign country will exhibit grammatical variation in their first language due to influence from the dominant language in the environment. These observations are to a certain extent related to research on language attrition. The bilingual child's parent(s) is/are likely a speaker/speakers of a minority language and is/are therefore inevitably an L2 speaker/L2 speakers of the language of the country of residence. As a consequence, language attrition is likely to affect their L1 (Paradis & Navarro, 2003; Laleko, 2010). The input bilingual children receive may therefore be qualitatively different from that received by monolingual children. These theoretical assumptions predict a relationship between the speech of bilingual children's mothers and the children's output.

Study 2 explores the role of parental input in connective use by bilingual Dutch–Russian children, particularly from attriters. Based on the background information of the bilingual children examined, I assume that one of their parents (mostly the mother) is the main source of language input for the Russian language. The general research question is whether variation in connective use by the parents of bilinguals is reflected in the output of their children.

4.1 METHOD AND DATA

The data for this corpus-based study were derived from the database Discourse BiSLI, Marie Curie Irses Project Discourse Coherence in Bilingualism and Specific Language Impairment of the Utrecht Institute of Linguistics OTS. The data incorporate 48 narratives told by 24 monolingual Russian adults (living in Russia), 36 narratives told by 27 parents—all mothers—of the bilingual children (living in the Netherlands) and 37 narratives told by their children. All Russian adults told a Fox and a Cat story. Nine parents told both stories, seven parents told the Cat story and eleven parents told the Fox story. Nine bilingual children told the Cat story and twelve children told the Fox story, eight children told both stories. An overview and relevant details of the participants is presented in Table 5.

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Table 5. Overview all subjects in Study 2

N	Group	Male	Female	Age range	Avg. age	Fox Story	Cat Story	Total Stories
24	Russian adults	2	22	18-52 (y)	23 (y)	24	24	48
27	Parents Netherlands	0	27	34-47 (y)	40 (y)	20	16	36
29	Bilingual children	12	17	4;0-7;0 (y;m)	65 (m)	20	17	37

The relevant variables in all adults', parents' and children's stories were calculated, coded and analyzed using the same method as in Study 1. First, I compared the use of additive connectives by parents of Dutch–Russian bilinguals living in the Netherlands with that of Russian adults living in Russia, in order to estimate possible traces of attrition. Second, I compared the connective production in the stories of the mothers and the matching stories of their children. A correlation analysis of the parents' and children's stories was conducted in order to establish whether variance in connective usage by the parents may have contributed to divergent use of additive connectives by the Dutch–Russian bilingual children.

4.2 RESULTS OF THE RUSSIAN ADULTS AND PARENTS

The results obtained from the analysis of the narratives of Russian adults and Dutch-Russian parents distinguish for Reference (maintenance versus shift), Connective (*i* 'and' versus *a* 'but') and Group (adults versus parents). The connective frequencies per utterance by group and by discourse continuation are presented in Figure 4.
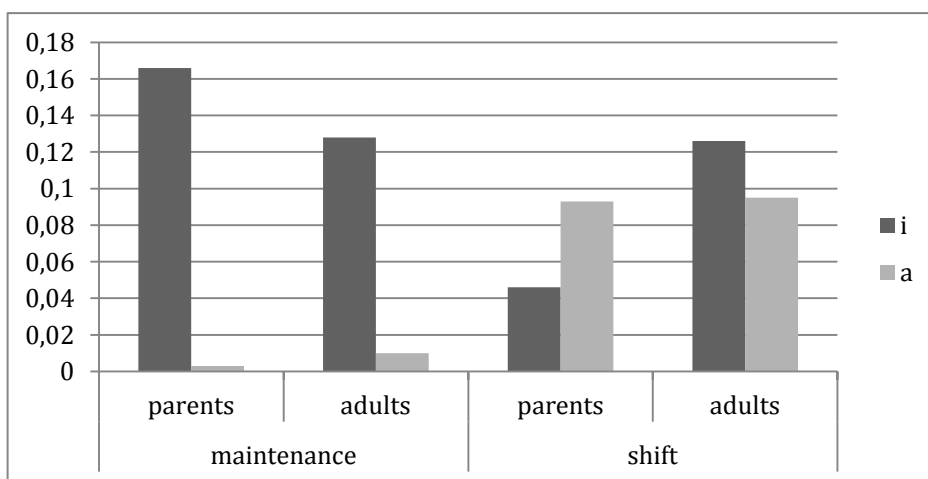

Figure 4. Frequency per utterance of the Russian connectives *i* 'and' and *a* 'but' by group (parents and adults) and discourse continuation

A Repeated Measures Anova was conducted to compare the adults and the parents on the

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use of connectives in shift and maintenance contexts. The analysis was performed with two within subjects factors: Connective (*i* 'and' versus *a* 'but') and Reference (maintenance versus shift) and one between subjects factor: Group (adult versus parent). There was a main effect of Connective ($F(1,49) = 43.543$, $p < .001$), resulting in more occurrences of *i* 'and' (M = .116, SE = .009) than *a* 'and/but' (M = .050, SE = .007). There was no main effect of Group ($F(1,49) = 1.068$, $p = .306$) and no main effect of Reference ($F(1,49) = 1.187$, $p = .281$).

The analysis revealed an interaction effect of Group, Connective and Reference ($F(1,49) = 5.589$, $p = .022$), showing that in shift contexts adult speakers of Russian chose *i* 'and' more often (M = .126, SE = .019) than the parents (M = .046, SE = .018). In order to identify the exact source of the difference, a post hoc analysis was conducted on the data of adults and parents.

The data of the adults revealed a main effect of Connective ($F(1,23) = 18.362$, $p < .001$). They used *i* 'and' more often (M = .127, SE = .013) than *a* 'and/but' (M = .052, SE = .010). There was no main effect of Reference ($F(1,23) = 3.515$, $p = .074$). The data showed a 2-way interaction effect of Connective and Reference ($F(1,23) = 4.563$, $p = .044$). Adults used *a* 'but' more often for reference shift and *i* 'and' more for reference maintenance.

As in the case of the adults, the data of the parents revealed a main effect of Connective ($F(1,26) = 28.124$, $p < .001$). Similar to the adults, they used *i* 'and' more often (M = .106, SE = .012) than *a* 'but' (M = .048, SE = .009). There was no main effect of Reference ($F(1,26) = 1.352$, $p = .256$). In addition to the findings in the data of the adults there was a highly significant 2-way interaction effect of Connective and Reference ($F(1,26) = 38.866$. $p < .001$). Parents used *a* 'but' more often for reference shift and *i* 'and' more for reference maintenance.

A contrastive analysis on the use of *i* 'and' and *a* 'and/but' was conducted to explore differences in the quality of connective production. The use of *a* 'and/but' in maintenance contexts was excluded from the analysis because only seven instances were found in the data of the adults and two in the data of the parents. The production of *i* 'and' in maintenance contexts and *a* 'and/but' in shift contexts did not reveal any irregular uses, *i* 'and' was used in shift contexts with and without causal relationship.

The results are displayed in Table 6. A Pearson Chi Square test revealed that the difference between adults and parents in the use of *i* 'and' with and without causal relationship was not significant $\chi^2(1, N = 94), = 1.101$), $p = .294$.

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Table 6. Use of additive connective *i* 'and' related to discourse continuation, adults and parents

Connective *i* 'and' related to function	Discourse continuation	Adults	Parents
reference shift	topic shift with causal relation	49 (70%)	14 (58%)
	topic shift without causal relation	21 (30%)	10 (42%)
total use of *i* 'and' in shift contexts		**70**	**24**

4.3 RESULTS OF THE PARENTS AND CHILDREN

The results obtained from the analysis of the narratives of the children and their parents distinguish for Reference (maintenance versus shift), Connective (*i* 'and' versus *a* 'but') and Group (parents versus children). The connective frequencies per utterance by group and by discourse continuation are presented in Figure 5.
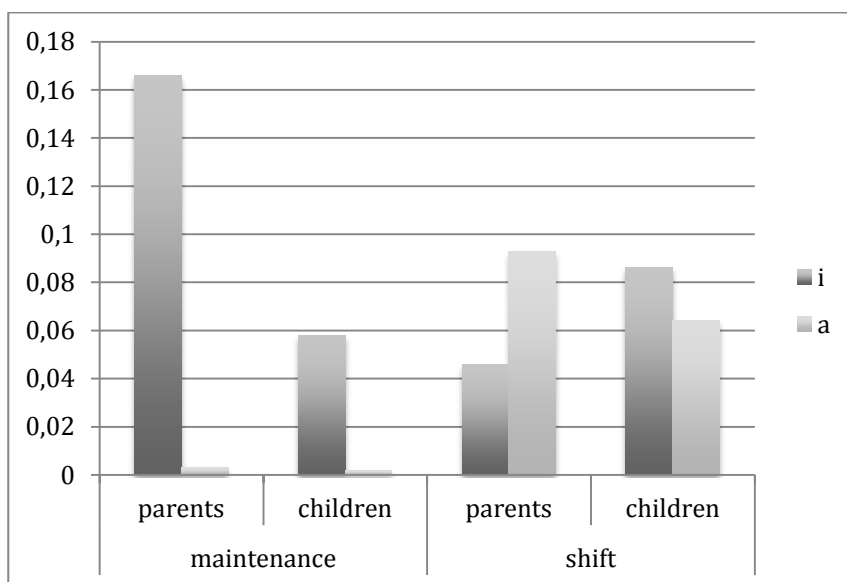

Figure 5. Frequency per utterance of the Russian connectives *i* 'and' and *a* 'but' by group (parents and children) and discourse continuation

A contrastive analysis on the use of *i* 'and' and *a* 'and/but' was conducted to explore differences in the quality of connective production. The use of *a* 'and/but' in maintenance contexts was excluded from the analysis because only four instances were found in the data of the children and two in the data of the parents. The production of *i* 'and' in maintenance contexts and *a* 'and/but' in shift contexts did not reveal any irregular uses; *i* 'and' was used in shift contexts with and without a causal relationship. The results of the analysis are presented in Table

7. A Pearson Chi Square test revealed that the difference between children and parents in the use of *i* 'and' with and without causal relationship was not significant χ^2(1, N = 59), = .166), p = .131.

Table 7 Use of additive connective *i* 'and' related to discourse continuation, parents and and children

Connective *i* 'and' related to function	Discourse Continuation	Parents	Children
reference shift	topic shift with causal relation	14 (58%)	14 (40%)
	topic shift without causal relation	10 (42%)	21 (60%)
total use of *i* 'and' in shift contexts		**24**	**35**

Finally, The data on the frequencies of use of the parents (all of them mothers) was compared with the data of their children. Each mother and her child told the same story, the Cat or the Fox story. They were then matched by file numbers, and a Pearson correlation coefficient was computed to assess the relationship between the connective use of the mothers and the children. None of the relevant variable pairs (connective–reference) showed a significant relation. Overall, there was no correlation between the parents' usage of connectives and their children's.

4.4 DISCUSSION

In this study, we looked for evidence indicating whether the connective production of the Russian-speaking parents may have influenced their children's production of connectives, in particular the generally and higher frequencies of i 'and' in topic shift contexts and more frequent uses of i 'and' in topic shift contexts without causal relation. This assumption is based on the view that the bilingual children's divergent production may be due to qualitative differences in the parental input they receive, compared to the input received by monolingual children (Paradis & Navarro, 2003; Rothman, 2007, 2008; Montrul, 2004). To that end, I have analyzed the narrative productions of the parents on frequency of use and the contexts in which connectives were used. The results were compared with the narratives of adult native speakers in Russia.

Surprisingly, the results showed that the adult native Russian speakers used *i* 'and' for reference shift almost three times more frequently than the Russian-speaking parents, a phenomenon which was observed in Study 1 among the bilingual children. If the parent group was under the process of attrition, we would expect the opposite: a higher frequency among the parents than among the monolingual adults. Existence of equivalent forms in competition such as

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en 'and' and *i* 'and' is one of the crucial conditions for transfer under attrition, according to Laleko (2010). Although the data of the parents from the Netherlands displayed a strongly reduced frequency of *i* 'and' compared to the adults from Russia, this does not imply the loss of this particular form by the parent group. Additive connectives are acquired first by young children and are used for an extended period of time to express a positive relation between sentences. Adult speakers, in general, replace them by using connectives expressing a more complex (temporal, causal or negative) relation. Thus, they may be compensating for the lower frequency of *i* 'and' by using other connectives.

Another possible explanation for the differences between adults and parents may be found in their narrative discourse strategies. The adults from Russia, all students, display a rather epistemic style, characterized by an evaluative, somewhat distant description of the events. They seem to offer the listener various interpretations using phrases like: *"And the mother-bird took a quite dynamic posture, ready to go somewhere, apparently to find food for her children. On the third picture we suppose that mama has gone, in any case she is not visible in the composition of the image. She returned with a worm in her beak. Accordingly, our assumption that she flew away to get food, was correct"* (Kirill, 21, a_016_cat). In contrast, the parents apply a style which resembles the way adults would tell a story to children. They bring the illustrations to life by focusing on the actions of the protagonists, in short sentences without using abstract terms. These different narrative styles may have had an effect on the use of connectives by the two groups.

Another unexpected outcome of the analysis was the rather high rate of *i* 'and' in shift contexts without causal relation. This is observed in the data of the parents and the monolingual adults and therefore cannot be explained as a feature of attrition in the sense that semantic properties of *en* 'and' in the second language are extended to the counter element *i* 'and' in the first language. Rather, the non-default use of *i* 'and' in reference shift contexts is due to the adults' more mature linguistic development. Topic maintenance between clauses can be established by other means than by referent maintenance or referent shift with an obligatory causal reading. Young children who have not fully acquired more complex language devices (e.g. temporal, causal, adversative connectives) mainly use *i* 'and' (in Russian) for clausal coordination in topic maintenance contexts. I also observed *tože* 'too' in the data, which is used to refer to similar activities of the two referents, as shown in (1).

(1) *Tut kiska polezla i prišla sobaka. A potom sobaka chotela **tože** zalezt'.*(Kostja, 4;08,
   r--009-cat.rtf)
   Here the cat climbed up and the dog came. And then the dog wanted to climb up, **too**.

If there is no causal relation in a shift context and topic maintenance is not ensured by other means, then the use of *i* 'and' can be marked as pragmatically inappropriate. Adults make use of more sophisticated ways to secure topic maintenance, such as temporal connectives that link clauses or utterances. This is illustrated with an example from the Russian adult speakers' data:

(2) **A v èto vremja** *vozvraščaetsja mama-ptica*. **I** *sobaka gonitsja za koškoj. (Lena, 18,*
  a--008--cat.rtf)
  Meanwhile, the mother bird returned. **And** the dog chased after the cat.

In this case, the referent shift without causal relation is perfectly appropriate. The simultaneity between the events in the two clauses is indicated by 'meanwhile'.

Finally, a relation between the parents and the children was not confirmed in the sense that no correlation was observed between the parents' and the children's frequency and distribution of connectives over functions.

It can be concluded that the children under investigation are not exposed to input which is affected by the dominant language of the environment. The input of the parents is qualitatively perfect insofar as it concerns the usage of additive connectives. They use *i* 'and' more in maintenance contexts and *a* 'and/but' more in shift contexts. Besides, there does not seem to be a positive or negative relation between the connective usage of the children and the parents. If input quality cannot account for crosslinguistic influence, then other variables must be driving the interaction between the Dutch and the Russian language, e.g. language dominance.

5   GENERAL DISCUSSION

This thesis had two main goals: to determine, first, whether additive connectives, being complex linguistic structures at the interface of syntax and pragmatics, are vulnerable to crosslinguistic influence, and second, whether language-internal or language-external linguistic factors can account for non-targetlike production of connectives by bilingual children. For these purposes, data on the use of connectives by bilinguals in their two languages were collected, analyzed and compared with the use of connectives by monolingual children. Previous research (Tribushinina, 2015b) on this subject among 7-year-old bilinguals has found no supporting evidence for the interface hypothesis (Hulk & Müller, 2000; Müller & Hulk, 2001), which predicts influence from the language with one possible pragmatic context to the language with two possible contexts, but found evidence for the language dominance view.

5.1 LANGUAGE-INTERNAL FACTORS AFFECTING CROSSLINGUISTIC INFLUENCE

Hulk and Müller (2000, 2001) claimed that crosslinguistic influence is due to language-internal factors and is likely to occur under the condition that the two languages overlap and the structures considered are syntactic phenomena that interplay with pragmatics. The interface hypothesis would predict unidirectional influence from the Russian to the Dutch language, resulting in bilinguals over-using *en* 'and' for maintenance contexts and *maar* 'but' for shift contexts, because this analysis is reinforced by both the Dutch and the Russian language. In particular, this theory would apply to younger children.

In order to explore the effect of age, the target group in the present study existed of younger bilingual children, aged 4-6. The results did, however, show that Dutch-Russian bilingual children used the additive connectives in the same way as age-matched Dutch monolinguals. There was no age effect in the sense that the children in the present study did not show different patterns of connective use compared to the 7-year-olds studied by Tribushinina (2015b).

5.2 LANGUAGE-EXTERNAL FACTORS AFFECTING CROSSLINGUISTIC INFLUENCE

The observed results are more compatible with the hypothesis that language dominance influences the directionality of crosslinguistic influence (Genesee, Nicoladis, & Paradis, 1995; Lanza, 1992, 1997). Under the influence of the dominant Dutch language, the bilingual children

overused the Russian connective *i* 'and' in contexts of reference shift, driven by the fact that the Dutch connectives are not specified for reference maintenance/shift and thus affect the narrower semantics of the Russian *i* 'and'. This feature was observed in the connective production of children in all age groups.

Since in most cases the frequencies of use between monolinguals and bilinguals did not diverge substantially, the quality of connective use was investigated as well, by performing a contrastive analysis on the data. The analysis revealed that all children often failed to apply *i* 'and/but' where it is most appropriate: in topic shift contexts with a plausible causal relation, and that the bilinguals did not differ from the monolinguals in this respect.

Examining the input received by the bilingual children in their non-dominant language could contribute to an explanation for their deviant connective frequencies over functions. It is feasible that the bilingual children received qualitatively reduced input in the Russian language from speakers (parents) who are under the process of attrition. The contrastive analysis revealed, however, that the connective use of the Russian-speaking parents did not include more instances of *i* 'and' and did not include a higher proportion of *i* 'and' in shift contexts without causal relation, when compared to the monolingual adults from Russia. Thus, in the parental input received by the children, traces of possible attrition concerning additive connectives were not detected. The input quality could not have had a negative impact on the children's connective usage. Moreover, the results from the correlation test did not provide evidence that the connective use of the parents was in one way or another related to their children's connective use.

I suggest that these findings do not imply the unimportance of language input for bilingual language acquisition. Even if the quality of the input is high, the lower amount of exposure to the Russian language by the bilingual children may have resulted in its development as the weaker language. Perhaps syntax-pragmatics interface constructions need a 'minimum threshold' of input quality (Gagarina, 2008). Other language properties may require very little input and are early acquired by both monolingual and bilingual children (Long & Rothman, 2014). Another aspect not to be neglected with regard to the research method is that the parents told the narratives in the presence of an adult investigator. The data on frequency and quality retrieved from the tests is adult language and may lack certain properties present in child-directed speech.

6   CONCLUSION

Returning now to the main research questions, it can be concluded that the structures used to examine the connective production of the bilingual children are vulnerable to crosslinguistic influence, but only in their weaker language. The findings of Study 1 revealed that, even though the structures examined satisfied the two conditions for crosslinguistic influence, they were perfectly realized in the language where crosslinguistic influence was expected to happen, i.e. in the dominant language of the children, thus contrary to the hypothesis of Hulk and Müller (2000, 2001). The effects of crosslinguistic influence were manifested in the opposite direction, from the Dutch language with ambiguous input to the Russian language with unambiguous input. Also, no evidence was found that younger bilinguals are more susceptible to crosslinguistic influence at the interplay between the domain of syntax and pragmatics than older bilinguals. The analysis in Study 2 showed that the quality of parental input cannot account for crosslinguistic influence in the examined context. First, no evidence was found that the parents' connective use in the first language (Russian) was affected by their second language (Dutch). Second, no correlation between connective usage of the parents and their children, in the sense of a positive or negative relation, was detected.

The findings from the present study support previous research on crosslinguistic influence in the area of relational coherence (Tribushinina, 2015b). The specific patterns found in this study cannot be explained by the interface hypothesis alone (as a language-internal factor) or by input quality alone (as a language-external factor). The data of the bilingual children revealed a different pattern of connective usage in their weaker language, compared to monolingual children, suggesting that other variables must be taken into account, such as linguistic dominance. The study of Argyri and Sorace (2007) has shown that language dominance cannot be the sole factor for crosslinguistic influence either, but the level at which transfer occurred in the present thesis indicates that the examined interface phenomena are especially vulnerable to influence from the dominant language. Examining connective usage by children who are dominant in Russian could make an interesting contribution to this area of research. Further, it is recommended to look more closely into the characteristics of input quality, in particular the quality of child-directed speech.

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APPENDIX 1
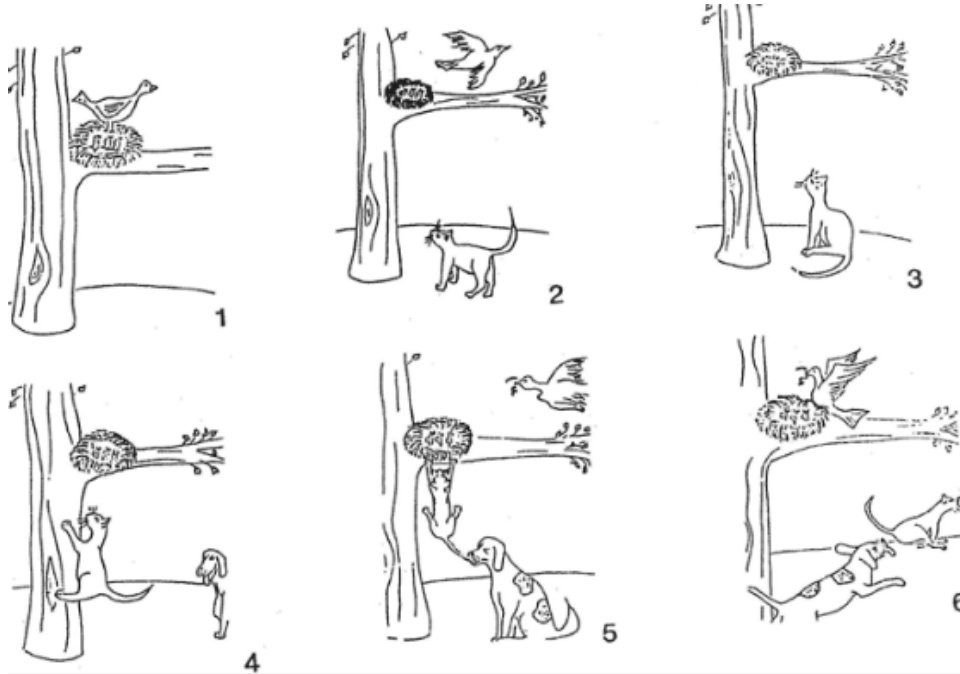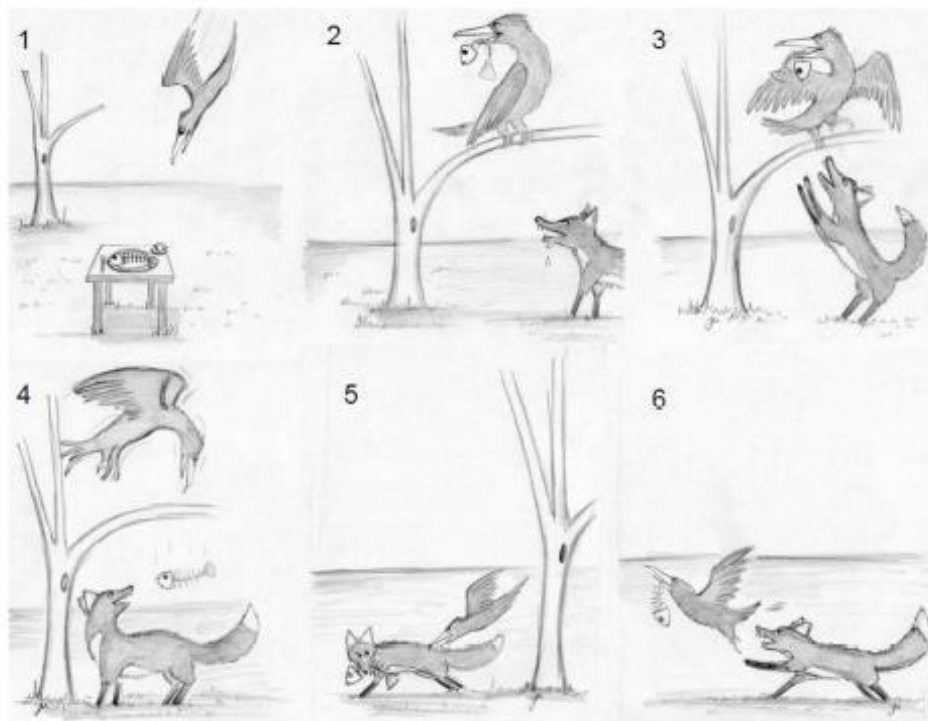
Pictures of the two stories

Figure 6. Cat story (Hickman, 2003)

Figure 7. Fox story (Gülzow & Gagarina, 2007)