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## Cross-linguistic influence in bilingualism

Festschrift for Aafke Hulk

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# **Cross-linguistic influence in bilingualism** Festschrift for Aafke Hulk

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### Introduction

This volume provides an overview of the current state in theorizing about crosslinguistic influence in bilingualism and presents a collection of studies that reflects the breadth and depth of research on cross-linguistic influence in bilingualism. The primary reason of this volume, however, is to honour Aafke Hulk who, throughout her career, has inspired many colleagues – juniors as well as seniors and has been in the forefront of new theoretical insights regarding cross-linguistic influence. The contributions in this volume arose from invitations we sent to previous co-authors and befriended colleagues of Aafke Hulk, most of whom were present at the workshop on *Cross-linguistic influence in bilingualism* organised in January 2017 at the University of Amsterdam. This workshop was organized to honour and congratulate Aafke in person with her 65th birthday.

During the past decades, research into bilingual child language acquisition has received an increasing amount of attention. Aafke Hulk's work, among others, has been invaluable in the progress made since the seminal study by Volterra and Taeschner (1978). Volterra and Taeschner were the first to argue that bilingual children follow a specific developmental path and argued that the first phase of development involves 'the mixing of' both lexicon and syntax. They concluded that in the phases to follow, bilingual children first separate their two lexicons and then their two grammars. Subsequent research (Meisel, 1989; Paradis & Genesee, 1996; de Houwer, 1994), however, has convincingly shown that children being brought up bilingually from birth (2L1) are perfectly capable of separating their two grammars from very early on and pass through the same developmental stages as their monolingual age-mates with respect to both their grammars. Whereas some claimed that the two grammars of such children develop autonomously, i.e., completely independent of each other (Meisel, 1989), others argued that cross-linguistic influence not only occurs in the lexicon of bilingual children but also in syntax (Gawlitzek-Maiwald & Tracy, 1996; Muysken, 2000).

It is within this context that Hulk and Müller (2000) and Müller and Hulk (2001) proposed that cross-linguistic influence is restricted and to be expected only under certain conditions, an insight that brings together the seemingly contradictory observations that the two languages develop autonomously but that there is also cross-linguistic influence. Two conditions for cross-linguistic influence were formulated: (i) the linguistic phenomenon belongs to the interface between syntax and pragmatics and (ii) the languages concerned present overlap on the surface. Precisely under those two conditions, one of the grammars of the bilingual child may show a delay (or an acceleration) in the development of the specific phenomenon, under the influence of the other language, keeping the child in the so-called default stage for a longer (or shorter) period of time. Thus, the emerging grammar of the bilingual child may show quantitative, but not qualitative differences in comparison to the emerging grammar of the monolingual child. Since the publication of these two influential papers, theorizing about cross-linguistic influence and empirical research on bilingualism has taken a flight.

#### Changes in bilingualism research

At the same time other shifts took place in the field of bilingualism research, which we see reflected in Aafke Hulk's own publications throughout her career in various ways. First, the methodology of research has changed considerably. The focus on a few individuals whose development is followed over a period of time has shifted to a focus on cross-sectional studies involving many children. In the beginning of the 20th century, diary studies presented descriptive analyses of language data produced by bilingual children (Leopold, 1949 [1970]) to be continued within generative research in which only a 'handful' of children were either observed or experimentally tested. More recently, large-scale experimental studies with quantitative techniques have become the norm. For example, in their 1996 publication on language mixing, Hulk and Van der Linden describe longitudinal, spontaneous production data from 'only' two young French/Dutch bilingual girls i.e., Anouk and Annick in the Amsterdam corpus. In a 2014 co-authored publication investigating the acquisition of grammatical gender, the number of children involved is 253 (175 Dutch and English/Dutch and 78 Greek and English/Greek children) and besides descriptive data, quantitative techniques are used to disentangle effects of age of onset from effects of length of exposure (Unsworth, Argyri, Cornips, Hulk, Sorace, & Tsimpli, 2014). In addition, new techniques such as eye-tracking (Brouwer, Özkan, & Küntay, this volume) and, for example, online crowdsourcing platforms (Lebruyn & Dong, this volume) have emerged.

Second, many early studies on child bilingualism focused on the acquisition of English and another language and investigated children in bilingual families who are exposed to two separate languages in use, stemming from the "one parent - one language" scenario (cf. Meisel (ed.), 1994, among many others). In the last decades, this hegemonic position of English has been broken. Moreover, children from migrant families whose home language is different from the nation's dominant language are studied and bidialectal children are now considered an important source of information (Cornips & Hulk, 2006, 2008). Bidialectal children have one or both parents who are native speakers of the dominant language, and they have been raised bilingually within a family in which language choice "rules" do not reflect a "one parent - one language" setting at all, in contrast to many of the bilingual children studied in earlier research. Consequently, children growing up in bidialectal families and, hence, bidialectal communities acquire an active and/ or passive proficiency in dialect. For example, in this new (bidialectal) context, the old question as to whether or not there are two separate systems, re-emerges. As Kupisch and Klaschik (this volume) point out, the notion of cross-linguistic influence in the bilingual context presupposes the existence of separate systems. However, many bidialectal communities reveal sociolinguistic repertoires that are intermediate between the standard and the dialect, casting doubt on the two-separate-systems hypothesis (Auer, 2015; Cornips, 2017 (in press); Cornips, 2014; Francot et al., 2017).

Similar to bidialectal children, migrant children are often raised in bilingual communities where languages are naturally mixed. Unlike many of the expatriate children investigated in the earlier studies on child bilingualism, migrant children do not necessarily belong to middle or higher-class families, but often have lower socio-economic status, dependent on a country's immigration policies. Moreover, they may be 2L1 learners, who learn both languages from birth, but they are often better characterized as early successive bilinguals (ESB), sequential learners (child L2) or, if they are second or third generation migrants, as heritage language learners. Differences between these different types of bilinguals allow investigating the effects of age and exposure during childhood, as well as interactions between age and exposure, on the one hand, and cross-linguistic influence, on the other. The understanding that bilingual children present a 'perfect natural experiment' (Schwartz, 2004) has furthermore led to comparisons with children with specific language impairment (SLI), as the effects of less input due to later exposure as in, for instance child L2 acquisition, may resemble those of incomplete input processing, which is one of the hypotheses entertained to explain the language problems of children with SLI. In her collaborative research, Aafke Hulk worked on the acquisition of Dutch by Turkish migrant children (van Koert, Koeneman, Weerman, & Hulk, 2015), on heritage language learners (van Osch, Aalberse, Hulk, & Sleeman,

2017; Aalberse & Hulk, 2016), comparisons between different groups of bilingual children and SLI (Keij, Cornips, van Hout, Hulk, & van Emmerik, 2012) and even on bimodal acquisition (Hulk & van den Bogaerde, 2016). That said, the study of the Dutch-French language pair remained a recurring theme throughout the years (Hulk & van der Linden, 1996; Hulk & Müller, 2000; Müller & Hulk, 2001; Berends, Hulk, & Sleeman, 2016).

#### The current volume

Many of the studies in this volume build on the hypothesis proposed by Hulk and Müller (2000) and Müller and Hulk (2001) in which interface phenomena play a crucial role. Reflecting changes in the field of child bilingualism research, they often use different, more quantitative methods, include new language pairs, and also take into account external factors that may influence bilingual language acquisition. Other studies connect to Aafke Hulk's more recent line of research on the bilingual acquisition of grammatical gender, in which she, besides cross-linguistic influence, examines the role of external factors such as amount and quality of input, and length of exposure. Finally, the volume contains some studies that go beyond linguistics and investigate how and to what extent cognitive and social factors influence bilingual acquisition.

Starting with interface phenomena, Rispens and de Bree investigate the acquisition of Dutch past tense morphology in monolingual children with typical development (TD) (n = 22), bilingual children (n = 16) and children with SLI (n = 31) between the ages of 7 and 9 years. The bilingual children in this study are 2L1 and L2 children with mixed language backgrounds. Being a phenomenon at the interface of several linguistic components (syntax, morphology and phonology), Dutch past tense morphology renders difficulties for bilingual children, as Rispens and De Bree show. In addition, low vocabulary predicts past tense performance for existing verbs, but not for pseudo verbs. The observation that bilingual children have difficulties with Dutch past tense is interesting in light of a previous study by the authors in which they administered the same task to a group of Hebrew-Dutch bilinguals who performed at the same level as monolinguals. The relatively accurate performance of the Hebrew-Dutch bilingual children may suggest positive transfer effects from Hebrew.

Framing their study within Lardiere's (2009) Feature Reassembly Hypothesis, Miller, DeLuca, Berndt, Iverson and Rothman examine a phenomenon at the syntax-semantics interface, namely the acquisition of progressivity in the German simple present tense and related constructions by English learners of L2 German. Because of the marked differences with English, the authors want to establish whether the L2 German learners are able to acquire present tense and "pseudo-progressive" constructions (AM + infinitive and BEIM + infinitive) in German, and if certain constructions are more difficult than others. Results from three experiments, testing both syntactic and semantic knowledge, administered to adult L2 learners (n = 20) and German monolingual controls (n = 25) show that the L2 learners are able to remap L1 features to L2 German forms, in line with the Feature Reassembly Hypothesis. The BEIM + infinitive constructions posed most difficulties. Miller and colleagues suggest that this might be related to the presence of an additional, [+locative], feature, complicating the process of feature mapping.

Other phenomena that are typically regarded as interface phenomena include definiteness and specificity: both rely on semantic, pragmatic, and (morpho)syntactic knowledge. For example, definite articles are used for reference, i.e., to a unique object or person in the world (semantics), but they are also linked to a common ground between speaker and hearer (pragmatics). The notions of speaker and hearer knowledge are also relevant to the notion of specificity. Furthermore, definiteness and specificity are often expressed by a certain morpheme or by word order (syntax). As such, definiteness and specificity lend themselves well as test grounds for the hypotheses proposed by Hulk and Müller (2000) and Müller and Hulk (2001) for bilingualism, as witnessed by the current volume. Four contributions investigate the acquisition of definiteness and specificity as expressed by articles by bilingual children and adults in different languages. A fifth contribution investigates the acquisition of a pronominal clitic used in indefinite object phrases to signal the ellipsis of a noun.

Schaeffer, Horselenberg and van Koert investigate the acquisition of the choice between a definite and an indefinite article in the English of 104 Dutch adolescents (age 12–16) who learn English in high-school. Although not about (early) bilingualism, this study witnesses the influence of Hulk and Müller's (2000) and Müller and Hulk's (2001) focus on interface phenomena and its spread to the study of L2 acquisition (cf. Sorace 2011). The vulnerability of interface phenomena that is also observed in L2 acquisition has been attributed to different factors, namely, to cross-linguistic influence from the L1 and to extra-linguistic factors such as processing/computational overload, making it difficult to take the perspective of the hearer into account (in addition to the speaker's own perspective). Schaeffer et al. used the written article elicitation task developed by Ionin and colleagues to test these two hypotheses (Ionin, Ko, & Wexler, 2004; Ionin, Zubizarreta, & Maldonado, 2008). Their experimental results support the cross-linguistic influence hypothesis: once the teenagers are sufficiently proficient in English (but still only have elementary-intermediate proficiency), they are native-like in their English article choice (which is similar to Dutch), despite the processing pressure they may experience because of the use of a non-native language. According to the latter, they would still be expected to make errors in article choice, regardless of their L1.

LeBruyn and Dong introduce a new test paradigm, and an alternative for the original test paradigm designed by Ionin (2003), to assess the influence of specificity on the L2 acquisition of definite articles. An extensive part of the chapter is dedicated to demonstrating the validity of the new test, which is also the main goal of the chapter. Two validation studies with native speakers of English (n = 24) indicate that the new paradigm has no definiteness bias and can be considered a test of specificity. Testing 30 undergraduate students who were L1 Mandarin – an articleless language – learning English as their L2, LeBruyn and Dong observe overproduction of the English definite article. In order to account for this observation, they propose a new hypothesis that explains the overproduction from an ambiguity in the domain of definiteness between a presuppositional and a non-presuppositional variant and a lack of the native knowledge that the presuppositional variant is the preferred one leading to the use of definite articles in contexts in which the existence of their referent is not presupposed.

The study by Meroni, Smeets and Unsworth sheds light on the role of languageinternal properties in relation to cross-linguistic influence, building on Hulk and Müller (2000) and Müller and Hulk (2001). Meroni and colleagues report the outcomes of a series of experiments, which test the interpretation of scrambled indefinite objects in Dutch by simultaneous bilingual 4-to 6-year old Dutch-English children (n = 21) to investigate if the conditions on cross-linguistic influence also hold for interpretation. Interestingly, no evidence of cross-linguistic influence from English to Dutch was observed. The second study, conducted with monolingual Italian adults (n = 10), monolingual 4-and 5-year old Italian children (n = 11), bilingual 4-to 6-year old Dutch-Italian children (n = 13) and monolingual Dutch children (n = 15), revealed seemingly contrasting results which pointed to cross-linguistic influence in the acceptance of specific indefinites in Dutch-Italian bilingual children which had the form of acceleration. These findings confirm influence at the level of the syntax-semantics interface and, moreover, suggest that in cases of partial overlap between the two languages, the direction of cross-linguistic influence can also depend on language-internal properties.

A fourth contribution that involves article acquisition is from Tsimpli, Peristeri and Andreou who tested seventeen simultaneous bilingual Russian-Greek children diagnosed with SLI and seventeen bilingual TD children matched on age (between ages 6 and 9). The study focused on the children's choice of articles and clitics in a story-telling task, which is an ecologically valid tool to evaluate children's sensitivity to the accessibility of discourse information through definiteness in an implicit way. The results show that the bilingual SLI group is both quantitatively and qualitatively different from the bilingual TD group. Not only do the bilingual children with SLI omit more articles and clitics but they also show more inappropriate use of clitics than the bilingual TD children. Performance in both groups of children is affected by syntactic factors as errors were more frequent in subject than object position. In the bilingual SLI group, animacy (in interaction with gender) affected the outcomes. Tsimpli and colleagues conclude that in bilingual SLI both grammar and discourse integration constitute vulnerable areas.

In French, if a noun is omitted in an indefinite object phrase, the pronominal clitic *en* has to be used to signal the ellipsis of the noun. In their contribution to this volume, Sleeman and Ihsane investigate the L2 acquisition of *en*. In order to determine if external interface phenomena that involve the syntactic-pragmatic interface are most vulnerable, followed by internal interface phenomena at the syntax-semantic interface (cf. Sorace & Serratrice, 2009), Sleeman and Ihsane designed a grammaticality judgment task that they administered to 23 native Dutch participants studying French. The L2 learners were assigned to two proficiency levels and, additionally, a native French control group was tested (n = 8). It turns out that, in general, the L2 acquisition of *en* proceeds very slowly. The results provide some evidence for the interface effects, though differential findings occur for correct and incorrect items and across groups. Sleeman and Ihsane do observe effects of proficiency level and conclude that the more advanced learners are able to overcome difficulties with *en* arising from cross-linguistic interference from Dutch.

We now turn to a description of the papers on the acquisition of grammatical gender, a more recent line in Aafke Hulk's research, in which she explores the role of child-external factors such as amount and quality of input, and length of exposure as potential causes for different acquisition patterns in bilinguals (see also Hulk's commentary in this volume). Two contributions concentrate on the question of morphophonological cues in the input that facilitate the acquisition of grammatical gender, and whether these cues are sufficient: the study by Marinis, Chondrogianni, Vasić, Weerman, and Blom and the study by Kupisch and Klaschik. The study by Cornips and Gregersen investigates the (constraints on the) variation of grammatical gender among adolescents.

Marinis and colleagues compare gender assignment in Greek and Dutch in six groups of children between ages 5 and 10: 25 L1 Greek TD children, 14 L1 Greek children with SLI, 26 Turkish-Greek TD L2 children, 20 L1 Dutch TD children, 26 L1 Dutch children with SLI, and 20 Turkish-Dutch TD L2 children. For the two studies, comparable elicitation tasks are used testing masculine, feminine and neuter gender in Greek. In Dutch, which has a relatively opaque gender system, common and neuter nouns were tested and, in addition, lexicalized diminutives, which provide a morphophonological cue for neuter gender assignment. The overall higher accuracy in Greek than in Dutch indicate that a transparent gender system with ample morphophonological cues, such as in Greek, accelerates the acquisition of grammatical gender. All groups were sensitive to morphophonological cues when these were present, showing that even children with SLI can benefit from such cues despite their language learning deficits. Marinis et al.'s study highlights the importance of cross-linguistic comparisons in research on both language acquisition and language impairment.

Kupisch and Klaschik study dialectal influence and gender marking in 25 bilectal children (between 5 and 11 years old) and 11 adults speaking Italian and Venetan, based on an elicited production task (EPT) in each of the two varieties. Kupisch and Klaschik point out that whereas in the bilingual context, the notion of cross-linguistic influence presupposes the existence of separate systems, the question of whether or not we can presuppose separate systems in bidialectal (bilectal in their terms) context is somewhat more controversial here, because many bidialectal communities reveal sociolinguistic repertoires that are intermediate between the standard and the dialect (Auer 2015). They note that the two varieties are not always kept separate, due to the different social functions of the two varieties and the power dynamics between them. The results of the EPT show that the children produce only Italian DPs in the Italian experiment, while producing Italian, Venetan and mixed DPs in the Venetan experiment. Interestingly, regardless of the amount of dialect use, children follow the gender assignment rules of Italian and Venetan in both monolingual and mixed DPs.

Cornips and Gregersen carry out a comparative study of the use of grammatical gender in Dutch and Danish. Dutch (n = 26) and Danish (n = 30, 40 hours of recorded speech) bilingual teenagers overuse common gender at the expense of neuter in their speech, a phenomenon that has often been attributed to contact with other languages showing no gender distinctions, resulting in a loss of gender distinctions and language change. However, Danish bilingual teenagers do this to a lesser extent than Dutch bilingual youngsters. Cornips and Gregersen argue that this is due to the input: Danish provides more morphological cues in the input for gender distinction than Dutch. Moreover, their findings show that the overuse of common gender is restricted to free morphemes. As Dutch definite articles are free morphemes, overuse of common gender is allowed. In contrast, Danish definite articles are bound morphemes, preventing overuse of common gender. Overuse of common gender in Danish bilinguals is found in indefinite contexts though, as the Danish indefinite article is a free morpheme. As such, sociolinguistic factors such as bilingualism among teenagers are shown to induce variation, while specific linguistic properties restrict the extent of this variation.

Another example of the interaction of linguistic and social factors in bilingual language development is illustrated in the study by Aalberse, Zou and Andringa. Aalberse and colleagues investigate the evolution of definiteness in the spontaneous speech of two generations (12 families) of heritage Mandarin Chinese speakers in the Netherlands. They show that in such special situations of language contact, languages tend to converge. In this case, the language without articles, i.e., Mandarin Chinese, develops a morpheme to express definiteness: demonstrative pronouns are reinterpreted as definite articles, because of the input of Dutch, a language that does have a definite article. This effect is stronger in the second generation than in the first generation of Mandarin Chinese speakers in The Netherlands, suggesting that speakers using both languages frequently, and in similar sociolinguistic situations, render most convergence. The authors conclude that this convergence, i.e., high rates of demonstratives is probably caused by co-activation of the two languages within the same speaker.

Although investigating a different phenomenon, namely French Wh-questions, Prevost and Tuller also examine the influence of different factors on bilingual language acquisition, specifically cross-linguistic influence, computational complexity, and exposure. In addition, they bridge linguistic sub-disciplines by comparing L2 acquisition and impaired acquisition. Prevost and Tuller administered an elicited production task and a comprehension task to 29 L1 English children acquiring L2 French and 27 monolingual French children with SLI between the ages of 6 and 12. Their results show that, despite the fact that English hardly exhibits Wh-insitu, this is the preferred option for L2 children and children with SLI in French. This result cannot be explained by cross-linguistic influence or by input factors. Therefore, Prevost and Tuller argue that computational complexity, defined by the number of required movements in the derivation of a certain construction, adds to the processing load. In populations in which processing is more vulnerable, such as L2 learners or children with SLI impaired learners, computational complexity may affect language acquisition.

Childhood bilingualism is affected by various factors but can also exert influence on children's cognitive development. Some novel cognitive effects of bilingualism are described in Brouwer, Özkan and Küntay, who show that 4-year-old bilingual children are faster at predicting the upcoming noun based on the lexical semantics of the verb. They investigated 52 children whose languages were Dutch and another language (16 different language backgrounds) with an eye-tracking experiment, including measuring reaction time. Parallel to researchers who claim that bilingual children have enhanced inhibition skills (Adesope et al., 2010), Brouwer and colleagues argue that bilinguals practice the prediction of upcoming linguistic elements in two languages that each have their own specific linguistic rules. Thus, despite a lower amount of input in each language, and in this case, Dutch, the bilinguals have twice as much experience encountering and processing semantic information because of the two linguistic systems in which they do this.

### Future directions

In her commentary, Aafke Hulk points out that in the '90s of the previous century, there was hardly any collaboration between various linguistic sub-disciplines investigating the phenomenon of bilingualism and that this continued to be the case until very recently The current volume demonstrates that the time is ripe for a more integrated approach from different disciplines such as theoretical linguistics, psycholinguistics and sociolinguistics in order to get more grip on bilingual child acquisition.

With the shift from syntax proper to interfaces and discourse phenomena the step to include non-linguistic cognitive factors in the picture appeared inevitable. Child-internal domain-general cognitive factors such as Theory of Mind and executive control processes, including working memory, may play an important role in the acquisition of interface phenomena. For instance, in order to use (in)definite articles correctly, knowledge of both speaker and hearer assumptions is required which, in turn, is related to notions such as perspective-taking and Theory of Mind, which develop around age four or later (Perner & Ruffman, 2005). Interestingly, various studies have shown that childhood bilingualism not only influences children's language abilities, but also their cognitive development, including a faster development of Theory of Mind and perspective taking (Goetz, 2003), as well as executive functioning (Adesope et al., 2010). In terms of executive control, Sorace (workshop lecture 2017) argues that the syntax-pragmatics interface constitutes a vulnerable domain for bilinguals because of inefficient integration of contextual cues. Furthermore, cross-linguistic influence raises intriguing questions regarding language control, which has been linked to domain-general executive control processes (Green & Abutalebi, 2013): Is cross-linguistic influence determined by individual differences between bilinguals' abilities to manage the two languages in their minds?

In addition to child-internal factors, child-external social factors such as socio-economic status, amount of input, length of exposure, language status/prestige and identity construction (Cornips & Hulk, 2013) have been shown to be important variables both in monolingual and bilingual language acquisition. Instead of working with languages, sociolinguistic enquiry has demonstrated that it may be more useful to investigate how groups of speakers organize '(sets of) linguistic resources [....] in ways that make sense under specific social conditions' (Heller, 2007: 1; Jørgensen, 2008: 167) such as the concept of the *feature pool* (Aboh, 2015; Mufwene, 2001; Wiese, 2013) which is analogous to a biological gene pool. The feature pool consists of all the variants coming from all kinds of sources the child is exposed to. The learner can identify which variants are in (some) complementary

distribution and which ones are not and select appropriate alternative variants, as she is likely to interact in different networks and/or settings committed to differing variants. Since exposure takes place throughout someone's life, such a feature pool is inherently fluid and flexible. This sociolinguistic perspective is critical on the view whether contemporary children can be considered to be 'true' monolinguals. Even so-called monolingual children and youngsters have frequent access to input, which neither stems from the national standard language nor necessarily the societally dominant one. Children in Europe, for example, have frequent access to English and they often grow up with peers having different home languages.

Taken together, the inclusion of sociolinguistic perspectives further enriches the study of bilingualism. Linguistic and psycholinguistic research can benefit from sociolinguistic theory in acquiring knowledge of language (in) use in different sociolinguistic repertoires and the assumed fluidity of language. Vice versa, (psycho) linguistic theory enhances sociolinguistic theory in deciding whether the selection process is informed linguistically and/or cognitively in situated interaction between speaker(s)/children. In our view, only an integrated approach has the potential of formulating a comprehensive model of the acquisition of more than one language. Such an integrated approach would fulfil Sorace's call (see also Hulk's commentary) for more research across language(s), other cognitive domains and social situations, in the attempt to understand (the development of) bilingualism and its underlying processes.

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