Crosslinguistic Influence in Scope Ambiguity: Evidence for Acceleration
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Abstract
Crosslinguistic influence of interface-conditioned properties in bilingual language acquisition has been reported in a large number of studies and in various linguistic domains. While many of these studies have found that crosslinguistic influence can occur in the form of delay, few have shown evidence for acceleration (a.o., Kupisch, 2007; Meisel, 2007; Schwartz, Nir, Leikin, Levie and Ravid, 2014). In this paper we investigate the interpretation of indefinites in sentences containing negation by simultaneous bilingual (2L1) English-Dutch and Italian-Dutch children. Our results provide evidence for crosslinguistic influence from Italian to Dutch in the form of acceleration, only. We conclude that in cases of partial overlap between a bilingual child’s two languages, the direction of crosslinguistic influence can also depend on language-internal properties.

1. Introduction
Bilingual acquisition has been shown to be affected by many factors, both child-internal and child-external, including age of onset, chronological age, general cognitive abilities, knowledge of another language, language aptitude, amount and type of exposure. The present study focuses on one of these, namely, knowledge of another language, investigating how knowledge of another language leads to crosslinguistic influence at the syntax-semantics interface.

Since the seminal study of Hulk and Müller (2000), a large body of research has shown that bilingual children’s acquisition of interface properties may be affected by crosslinguistic influence. Crosslinguistic influence may result in ‘delay’, that is, when a particular property emerges later in bilingual children relative to monolingual peers, or it may lead to ‘acceleration’, that is, when a property emerges earlier in bilingual children relative to their monolingual peers (Paradis and Genesee, 1996). While
various studies have demonstrated the existence of delay, the evidence for acceleration is still rather limited (cf. Gawlitzek-Maiwald, 1996; Kupisch, 2007; Lléo, Kuchenbrandt, Kehoe and Trujillo, 2003; Meisel, 2007; Schwartz et al., 2014).

Most studies on crosslinguistic influence have focused on the acquisition of morphosyntax and syntax-pragmatics. There are relatively few studies examining crosslinguistic influence in the area of syntax-semantics and these give rise to a conflicting picture. Mykhalyk and Ko (2010), for example, investigated the acquisition of scrambling in English-Ukrainian bilinguals and found that bilinguals do not develop differently from their monolingual peers. On the other hand, in a study on scope preferences in Korean-English bilingual children, Lee et al. (2010) and O’Grady et al. (2011) did find evidence for crosslinguistic evidence.

This paper aims to further expand this line of research by exploring the interpretation of indefinites in sentences containing negation by bilingual (2L1) English-Dutch children and Italian-Dutch children. The interpretation of indefinite objects in negative sentences is an interesting case to consider in the context of English-Dutch and Italian-Dutch bilingual acquisition as English and Italian are comparable in how they differ from Dutch, but at the same time, these two languages differ from each other in a crucially relevant way. That is, while Italian and Dutch share the same syntactic structure for sentences containing an indefinite object and a negator (with the negator c-commanding the indefinite object), in Italian the indefinite has different lexical properties and these may lead to a radically different interpretation of the structurally equivalent sentence in English.

The goal of this study is twofold. First, we explore whether the acquisition of scrambled indefinite objects\(^1\) in the Dutch of Dutch-English and Dutch-Italian simultaneous bilingual children is affected by knowledge of the other language, namely either English or Italian. In doing so, we extend Hulk and Müller’s original proposal to examine whether crosslinguistic influence is attested in the syntax-semantic interface and if

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\(^1\) We are aware of alternative accounts (i.e., Neeleman, 1994) that challenge the term ‘scrambled’ for the grammatical structures at hand. For the purposes of this paper, we will simply use the term ‘scrambled indefinites’ due to the fact that it is the most common description.
so, whether this manifests itself in the form of delay or acceleration. Second, by varying one of the languages involved in the two bilingual groups (i.e., English versus Italian), we investigate crosslinguistic influence across different language combinations in order to shed light on the role played by the language-internal features of the 'other' language (Sorace and Serratrice, 2009).

The organization of the paper is as follows. Section 2 includes a brief review of selected studies on bilingual acquisition at the syntax-semantics interface. Subsequently, section 3 illustrates how the interpretation of sentences containing an indefinite and negation differs in English and Dutch and it reports the most salient findings on how this interpretative differences are acquired by monolingual children. In the remainder of the paper, we report on two studies. Study 1 (section 4) concerns the acquisition of scrambled indefinite objects in Dutch by bilingual Dutch-English children, Study 2 involves a different crosslinguistic comparison, namely between Dutch and Italian. We first report on data on Italian from monolingual Italian adults and children (Study 2a; section 5) and subsequently we present data on Dutch from bilingual Dutch-Italian children (Study 2b; section 6). The main findings of both studies are compared in section 7.

2. Crosslinguistic influence in the area of syntax-semantics

Previous research focusing on a wide range of linguistic phenomena in bilingual acquisition has provided evidence for the existence of crosslinguistic influence. Many of these studies have been carried out in the context of the two conditions on crosslinguistic influence put forward by Hulk and Müller (2000; Müller and Hulk, 2001). We will refer to their proposal as MULK.

The first of these two conditions is that the two languages in question need to exhibit structural overlap at the surface level. More specifically, if language A offers evidence for more than one grammatical analysis of a particular structure, and language B reinforces one of these analyses, crosslinguistic influence is predicted from language B to language A. By
and large, the available evidence is consistent with this condition (e.g., Foroodi-Nejad and Paradis, 2009). Second, according to the original version of MULK, crosslinguistic influence should occur at the interface between pragmatics and syntax, i.e., in the C-domain. The available evidence is not always in line with this condition. Crosslinguistic influence in bilingual acquisition has been shown to occur at the interface of syntax-morphology and syntax-pragmatics as well as in narrow syntax (e.g., Paradis and Navarro, 2003; Serratrice et al., 2004; Sorace, 2007; Haznedar, 2010).

Whilst the original MULK proposal considered crosslinguistic influence in terms of structural overlap only, a number of recent studies have investigated whether there is crosslinguistic influence at the level of interpretation. For example, in one study on the syntax-semantics interface, O’Grady, Kwak, Lee and Lee (2011) investigate bilingual children’s scope resolution in sentences containing negation and a universal quantifier. They observed crosslinguistic influence from English to Korean in the form of delay. In contrast, Mykhalyk and Ko (2013) showed that in the acquisition of direct object scrambling in Ukrainian, monolingual and bilingual English-Ukrainian children follow a similar developmental pattern. In other words, when it has occurred, the crosslinguistic influence observed at the syntax-semantics interface thus far has taken the form of delay relative to monolingual peers.

As noted above, crosslinguistic influence may also manifest itself as acceleration. One example of a study finding acceleration is Kupisch (2007): in the acquisition of the German determiner system, Kupisch reported that Italian-German bilingual children acquire German determiners faster than monolingual German-speaking children. She argued that the determiner system is less complex in Italian than German and that this facilitated bilingual Italian-German children’s acquisition of the determiner system in the more complex system, German (see Kupisch, 2012, for further discussion of crosslinguistic influence in determiner semantics but then with adult bilinguals). In a similar vein, Gawlitzek-Maiwald and Tracy (1996) proposed that bilingual children are able to make use of syntactic structures from one language to expedite the acquisition of the other when the syntactic structure in the first language is apparently easier to acquire than
its equivalent in the other language. Instances of crosslinguistic influence taking the form of acceleration have also been observed in the phonological domain (e.g., Lléo et al., 2003).

More recently, Piruvulescu, Pérez-Leroux, Roberge, Strik and Thomas (2014) failed to find a predicted acceleration effect in the acquisition of pronouns in bilingual English-French children. Contrary to their expectations, the earlier acquisition of the English pronominal system did not result in the bilingual children converging on the target system in French earlier than their monolingual peers.

To summarise, while there is a considerable amount of evidence for crosslinguistic influence in bilingual acquisition, the number of investigations examining this question for phenomena at the syntax-semantics interface is rather limited. Furthermore, the available studies observe crosslinguistic influence in the form of delay, rather than acceleration. A number of studies have found acceleration effects for other interfaces, though not always where predicted.

The current study will contribute to this body of research by presenting evidence for crosslinguistic influence at the syntax-semantics interface in the form of acceleration. One of the factors claimed to modulate the magnitude of crosslinguistic influence is amount of exposure (e.g., Austin, 2009; Sorace and Serratrice, 2009). In this paper, we provide evidence that rather than amount of input, language-internal properties are a crucial factor in predicting the occurrence of crosslinguistic influence, at least with regard to the linguistic property under investigation here. In what follows we will present two studies on bilingual acquisition at the syntax-semantics interface by testing the interpretation of (specific) indefinites in sentences with negation by 2L1 English-Dutch children (Study 1) and 2L1 Italian-Dutch children (Study 2).² In other words, we will investigate bilingual children’s acquisition of the same linguistic phenomenon in Dutch by varying the other language. Crucially, the two languages under investigation, Italian and English, differ from each other relative to the

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² These data are a subset of those published as BUCLD proceedings in Unsworth (2012) (Study 1) and Meroni et al., (2013) (Study 2). The dataset in Study 2 also contains one additional child. In this paper, we conduct additional analyses and make a direct comparison between the two datasets.
property in question, and both studies use the same methodology, namely truth value judgement.

3. **Indefinites and negation in Dutch and English monolingual development**

Dutch-speaking children's interpretation of sentences containing negation and an indefinite, such as (1), have been studied since Krämer (2000).

(1) De jongen heeft een vis niet gevangen
    the boy has a fish not caught

a. There is a fish the boy didn't catch a > not
b. The boy did not catch a(ny) fish not > a

While for adults the indefinite in (1) can only be interpreted as having scope over negation, leading to the specific reading given in (1)-a, (de Hoop 1992; Van Geenhoven, 1998; Ruys, 2001), research has shown that monolingual Dutch children behave differently. In particular, in the earlier stages of development monolingual Dutch-speaking children interpret the indefinite in (1) non-specifically, as in (1)-b (Krämer, 2000; Schaeffer, 2000); subsequently, they pass through a stage (around age four to six) in which sentences like (1) are ambiguous between the specific and the non-specific interpretations (Unsworth et al., 2008) and only around the age of six/seven do they converge on the correct adult interpretation (Unsworth et al., 2008).

Let us now turn to English. In adult English, negative sentences containing indefinites, as in (2), are ambiguous; that is, the object can be interpreted either specifically or non-specifically. When the indefinite is interpreted outside the scope of negation, it receives a specific interpretation, as paraphrased in (2)-a. In contrast, when the indefinite is
interpreted within the scope of negation, it gets the non-specific reading as shown in (2)-b.

(2) The boy didn’t catch a fish

a. There is a fish the boy didn’t catch    a > not
b. The boy did not catch a(ny) fish      not > a

Studies investigating the interpretation of sentences such as (2) by L1 English children give a conflicting picture as to whether children are able to access both interpretations from early on. In particular, while some researchers (a.o., Gualmini, 2003; Lidz and Musolino, 2002; Musolino, Crain and Thornton, 2000; Su, 2001) have observed that children show an initial preference for the non-specific interpretation and have claimed that the specific interpretation is acquired around age four to five, others (Gualmini, 2004; Miller and Schmitt, 2004; Gualmini et al., 2008) have showed that children can access both readings from early on.

To sum up, in English, a sentence containing an indefinite object and a negator can be interpreted specifically or non-specifically, depending on the context. The results from previous research suggest that although L1 English children might go through a stage in which their preferred interpretation is the non-specific one, they are able to access both interpretations from the age of five. In contrast, L1 Dutch children aged between four and seven regularly (and sometimes exclusively) interpret sentences containing an indefinite object scrambled across negation in a non-adult-like way, allowing a non-specific interpretation. In other words, the specific interpretation of the indefinite develops later for monolingual Dutch children than for their English-speaking peers.

4. Study 1: Indefinites and negation in English-Dutch bilinguals
The goal of the present study is to evaluate whether there is evidence for crosslinguistic influence at the syntax-semantics interface in English-Dutch bilinguals by taking the interpretation of indefinite objects in negative sentences, i.e., (1) and (2) above, as a case study. In doing so, we test whether the structural overlap condition proposed by MULK also holds at the level of interpretation. Given that the grammar of monolingual Dutch-speaking children in the developmental stage between 4 and 6 years old allows either a non-specific or both a non-specific and a specific interpretation of indefinites in (2), and monolingual English-speaking children can interpret indefinites in (1) non-specifically and/or specifically, we predict crosslinguistic influence from English to Dutch. In other words, the fact that the non-specific reading is always available in English may reinforce the same reading in the Dutch of the bilinguals, thus delaying the convergence on the target (specific) interpretation when compared to their monolingual peers.

4.1 Participants and Method

The participants were 21 simultaneous bilinguals children (age: 4-6 mean: 5.5) who were exposed to both languages from birth. All were being raised using the ‘one parent, one language’ principle and for 17 of them, it was the mother who spoke English (all or most of the time i.e., > 75%). All participants were living in the Netherlands at the time of testing and attended primary schools where Dutch was the language of instruction. In order to determine the amount of language exposure, a parental questionnaire was used (partly based on Unsworth, 2013). Parents were asked to indicate which language English or Dutch each person used when addressing the child. They were also asked to indicate the amount of time spent at daycare or school and the amount of time spent weekly on other activities (i.e., including sports, watching TV, time spent with friends) and

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3 The participants in this study were taken from a larger sample with bilingual English-Dutch children aged 3 to 17 years old. For present purposes, we selected only the 4- to 6-year-old children for two reasons. First, this is the relevant age group for the predicted crosslinguistic influence from English to Dutch in English-Dutch bilinguals. Second, it makes the ages comparable to the Italian-Dutch bilinguals reported on the second study.
which of the two languages was used. In addition, a group of 26 Dutch monolingual children (age range 4;3-6;8, mean: 5;5), was also tested. There was no significant age difference between the monolinguals and bilinguals ($W=258, p=0.74$).

To investigate children's interpretation of indefinites, a Truth Value Judgment task (TVJt) was conducted (Crain and Thornton, 1998). The materials used in the experiment were as the ones used in Miller and Schmitt, 2004 for English and Unsworth et al., 2008 for Dutch. In every trial a story was presented on a computer screen where the main character was asked to accomplish a task (e.g., to catch all the fish), but in the end he or she did not succeed (e.g. he/she caught only two out of three fish). Thereafter, a puppet described what happened by uttering the target sentence, which was previously recorded, and the subject was asked to provide a truth judgment. Since we predict crosslinguistic influence from English to Dutch, the TVJt was conducted only in Dutch.

To illustrate, in a typical trial, which corresponds to the sentence in (3), the participant is told that Peter needs to catch all the fish in the pond. He is doing very well and catches two fish. Then Peter’s father calls him and thus Peter goes away, leaving one fish in the pond. In the context depicted in Figure 1, sentence (3) is true when the indefinite is interpreted specifically as in (3)-a, i.e. there is a fish that has not been caught which is also made prominent by a red arrow, but it is false when interpreted with a non-specific reading as in (3)-b, i.e., the boy did catch a fish, in fact, he caught two. Each participant was presented with five test items, and eight fillers.

(3) De jongen heeft een vis niet gevangen

*The boy has a fish not caught*

a. There is a fish the boy didn’t catch a > not

b. The boy did not catch a(ny) fish not > a
4.2 Results

Children’s responses were analyzed as the percentage of yes-responses, i.e., indefinites which were correctly interpreted specifically. The bilingual children accessed the specific interpretation 75 times out of 105 trials (71.4%). Monolingual children accepted the specific reading 101 times out of 130 trials (77.6%). We used logistic regression analyses using the lmer package in R (Bates, 2005) to compare the chance of probability of accepting rather than rejecting the target items. The model outcome revealed no main effect of group in the model comparing Dutch monolinguals to Dutch-English bilinguals, suggesting that the English-Dutch bilinguals did not perform significantly different from their monolingual peers ($\beta = -0.95$, se($\beta$)= 1.62 , $z=-0.59$, $p= 0.56$).
Following Krämer (2000), children’s individual response patterns were categorised as specific (if 4/5 or 5/5 items accepted), non-specific (4/5 or 5/5 items rejected) or mixed (2/5 or 3/5 accepted). This analysis, given in Figure 2, revealed that while the bilinguals and the monolinguals exhibited the specific pattern to more or less the same extent (77% and 67% of the time, respectively), there were slightly more bilinguals with a non-specific pattern (23% vs. 4%). The relative distribution of individual response patterns across the two groups was not significantly different, however ($p=0.72$, Fisher’s exact test).

**Figure 2.** Proportion of indefinite objects interpreted specifically by monolingual and bilingual (English-Dutch) children.
4.4 Discussion

In this first study we investigated the acquisition of the specific reading of scrambled indefinite objects in Dutch by simultaneous English-Dutch bilinguals compared to their Dutch monolingual peers. We predicted a delay in the acquisitional pattern of bilinguals due to crosslinguistic influence from English. Our prediction was not borne out, however. Despite the fact that English allows both the specific and non-specific interpretation for one and the same form, and that this may reinforce the availability of the non-specific reading in Dutch, there does not appear to be any difference in performance between the monolingual and the bilingual children.

There are a number of possible reasons for this finding. First, the bilingual children may perform similarly to their monolingual peers because they are dominant in Dutch, possibly due to the fact that they grow up in the Netherlands. We will return to this possibility in section 6.

An alternative explanation has to do with the contextual setting. As illustrated in Figure 1, the experimental setting was designed to make the
specific reading somehow prominent (i.e., the arrow in the bottom-right picture). This maneuver however makes it impossible to determine whether children were accessing that reading because that was the preferred option available in their grammar or because that was the option most immediately supported by the context (out of more possibilities available in their grammar). The possibility that English-speaking children readily access the specific reading in particular contexts, thereby behaving the same way as their Dutch peers, is further supported by the high acceptance rate shown by the English monolingual subjects in previous studies (Miller and Schmitt, 2004), compared to other studies where no experimental maneuver of this type was ever used (Musolino, 1998). The argument goes as follows: we wanted to investigate whether the non-specific reading, always available in English, would reinforce the corresponding reading, available to Dutch-speaking children at this age, but not to Dutch-speaking adults. However, by using an experimental maneuver that makes one reading – the specific one – more salient, the likelihood of reinforcing the other one – the non-specific reading – is diminished. Thus, making the specific reading too prominent might have masked the extent to which the non-specific one is available. This seems all the more likely given that the interpretation of the indefinite under negation in the two chosen languages, English and Dutch, heavily depends on contextual factors (e.g. Gualmini et al., 2008). In other words, at this developmental stage, the interpretation of sentences containing an indefinite object under negation in this particular context in English and Dutch might be too similar to allow us to determine whether crosslinguistic influence occurs.

This line of reasoning is in fact completely in line with MULK’s original proposal: MULK note that overlap (albeit structural in their proposal) refers to overlap between the child’s two (developing) grammars and this may or may not be the same as the corresponding adult grammars. At the developmental stage and in the experimental setting in which the bilingual English-Dutch children were tested, their two languages exhibited complete overlap in that they each allowed both the specific and non-specific interpretation of indefinite objects in negative sentences (irrespective of any word order differences in Dutch). As pointed out in
Unsworth (2003), when MULK refer to overlap between a bilingual child’s two languages, what is really intended is partial overlap. When there is complete overlap, there is essentially little scope for crosslinguistic influence to take place.⁴

In order to evaluate whether crosslinguistic influence occurs at the syntax-semantic interface in indefinites in negative sentences, we need to conduct an experiment in which two conditions are satisfied. First, the role of the contextual setting in the resolution of ambiguity is controlled. Second, the two languages do not exhibit complete overlap in that experimental setting. This is what we do in the next section, where we present a second study investigating Dutch bilingual children exposed to a different language than English, namely Italian.

5. Specific indefinites in Italian

In Italian, like in English, a sentence like (4) containing negation and an indefinite object is ambiguous and can be interpreted specifically, as in (4)-a, or non-specifically, as in (4)-b:

(4) Marco non ha pescato un pesce
Marco not has caught a fish
Marco didn't catch a fish

a. It is not the case that Marco caught a fish not > a
b. There is a specific fish Marco didn't catch a > not

Despite this structural similarity in the availability of possible interpretations, Italian differs from English in that in Italian the indefinite, _un_ (or _una/uno_ depending on gender/number of the noun), is homophonous

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⁴ Logically speaking, this is not entirely true: when a bilingual child’s two languages are identical with respect to the linguistic property in question, one might expect that this ‘double helping’ of language input would facilitate the child’s acquisition in both languages. If this were true, however, widespread acceleration effects would be expected and bilingual children (with completing overlapping structures in their two languages) would regularly outpace their monolingual peers. This does not appear to be the case, however (Unsworth, 2003).
with the numeral, *uno* (or *un/una* = one). This lexical difference may be crucial in determining how sentences containing an indefinite object and a negator are interpreted in the two languages. In fact, if, following Fodor and Sag (1982), we assume that the exact meaning of numerals is normally associated with a wide-scope reading (which corresponds to the specific reading), we might speculate that in Italian, the specific reading would be the preferred one for both children and adults. Many studies have in fact shown that children access the exact meaning of numerals from the earliest stage of development and that both children and adults, when provided with the right kind of context, prefer the exact reading (Carey 2004; Huang, Spelke and Snedeker, 2013).

Further evidence for this idea comes from studies involving Mandarin Chinese and Spanish, two other languages where the same homophony between the indefinite, *yi-ge* in Chinese and *un* in Spanish, and the numeral *one* holds. Interestingly, Dutch and English behave differently from the three languages mentioned above and this difference turns out to be influential for children's interpretation of sentences containing indefinites under negation, as illustrated by Su (2001) for Chinese and by Miller and Schmitt (2005) for Spanish. The results of a series of experiments by these authors revealed that Chinese- and Spanish-speaking children (aged 3-6 years old) accepted the specific interpretation of the indefinite consistently more often than English- or Dutch-speaking children of the same age, and that they furthermore did not differ from adult speakers of the same language.

To explain the behaviour of L1 Chinese children with respect to the interpretation of indefinites, Su (2001) proposes *The Number Reading Hypothesis* and argues that children who acquire a language in which the indefinite and the numeral are homophonous, exclusively interpret the indefinite as a *quantity-denoting number expression*. According to this reading, which we will refer to as *quantity-denoting reading*, a sentence like (4) will be interpreted as “It is not the case that the number of fish that Marco caught is exactly one”. Although we believe that the *quantity-denoting reading* does not hold for Italian, as we explain in more detail in section 6, we agree with Su (2001) that the lexical nature of the Italian
indefinite article may be affecting the interpretation of the type of sentences under investigation here. We contend that the availability of the exact numeral reading may favour the specific interpretation of the indefinite in sentences such as (4) in Italian monolinguals. In other words, the presence of the numeral reading makes the specific interpretation of the indefinite more prominent and thus more easily accessible by both L1 Italian children and adults. To our knowledge, the interpretation of specific indefinites with Italian monolingual children has not yet been explored. We start in Study 2a by filling this gap.

5.1 Study 2a: Indefinites and negation in monolingual Italian children and adults

5.2 Participants and Method

For this study, ten monolingual Italian adults (mean age: 40) and eleven monolingual Italian children (age: 4;6-5;11, mean: 5;1) were tested. The method and procedures were the same as the English-Dutch bilinguals, with the exception of one small change: the final picture of the experiment was slightly modified by removing the arrow pointing to the object left behind by the character of the story (i.e., the fish that was not caught or the egg that was not coloured). This maneuver was implemented in order to make the specific reading less prominent. As discussed in the previous section, the relatively successful performance in Dutch, both by the monolinguals and bilinguals, could have been driven by the experimental setting. That is, in a stage in which sentences like (3) in Dutch are likely ambiguous between a specific and a non-specific reading, the presence of an arrow pointing at the object, which is relevant for the specific interpretation only, could have influenced children’s responses, and thus, in the case of bilinguals, concealed the effect of crosslinguistic influence. We believe that despite this change, Italian monolinguals will still predominantly access the specific reading of the indefinite. This is because, as argued above, in Italian the accessibility of the specific reading is mainly determined by the homophony between the numeral and the indefinite, a lexical property of the language.
All Italian monolinguals were presented with five target trials, four practice trials, five unrelated filler trials and three control trials. An example of a typical trial would be the sentence in (4) with the picture in Figure 1, with one crucial difference, namely that the arrow in the bottom-right picture was removed.

The control items serve to determine whether the Italian monolinguals access the specific indefinite reading of un (a/one) or whether they resort to the quantity-denoting reading as proposed by Su (2001). It is important to notice that these two readings in fact have the same truth values for the target trials. To be more precise, the specific interpretation in (4) relative to Figure 1 is true because there is indeed a specific fish that Marco did not catch. The quantity-denoting reading is also true since Marco caught two fish not only one. What Su (2001) therefore assumes is that, in interpreting the sentence in (4), children reason as follows “yes, it is true because Marco did not catch one fish but he caught two of them”. If we want to be sure that the reading children (and adults) are accessing in interpreting (4) is the specific one, thus making these sentences comparable to their English or Dutch translations, we need to keep the quantity-denoting reading and the specific reading apart. The control items, illustrated in (5), serve this purpose. Controls kept the same structure of the target but were presented in a slightly different context, namely, the one in which the character succeeds in accomplishing the task as shown in Figure 4.

(5) Maria non ha colorato un clown
Maria not has colored a clown
Maria didn't paint a clown
This means that while in the target trials the specific and the quantity-denoting reading are indistinguishable in terms of truth value, in the control trials the two readings have different truth values (cf. Figure 5). Specifically, the quantity-denoting reading remains true but the specific interpretation becomes false as there is no clown that has not been coloured. It will therefore be possible to ascertain which reading children access in interpreting (5) by simply looking at the answers they provided.

5.2 Results

Monolingual Italian adults accepted the target sentences 96% (48/50) of the time and Italian monolingual children did so 89% (48/54) of the time. Adults' acceptance of the target sentences was not significantly higher than the one of monolingual children ($\beta = -1.42$, $se(\beta) = 0.82$, $z = -0.75$, $p = 0.08$). Italian monolingual children rejected the control sentences at a rate of 90% (30/33), while adults always rejected them. Again, no significant differences were found between monolingual children and adults on the controls ($U = 52.0$, $p = 0.082$). Results are given in Figure 5. All the children and all the adults showed a specific response pattern, accepting the target sentence at least four out of the five items.
5.3 Discussion

Children's behaviour on the control sentences clearly shows that, contra Su (2001), monolingual Italian children access the specific reading of the indefinite/numeral. Together with the results on the test items, these data provide evidence that both children and adults consistently access the specific reading of an indefinite under negation in contexts that favour this reading. The adult-like performance of monolingual Italian children, as already suggested by Su (2001), is likely the result of the fact that the numeral and the indefinite determiner in Italian are expressed by means of the same lexical item *un/un*. We have thus found a language in which the scope ambiguity between the indefinite object and the negator is resolved by means of language internal/lexical properties, namely the homophony between the indefinite and the numeral, rather than relying mainly on contextual factors. This feature of Italian allows us to investigate whether crosslinguistic influence occurs at the syntax-semantic interface in Italian-Dutch bilinguals. In other words, while English and Dutch present complete overlap in the particular context and developmental stage under investigation, Italian and Dutch exhibit a partial overlap, and it is this latter
case which, in line with MULK, constitutes the optimal (and possibly only) situation for crosslinguistic influence to occur.

6. Study 2b: Indefinites and negation in Italian-Dutch bilinguals

The aim of this study is to evaluate whether there is evidence for crosslinguistic influence in Dutch-Italian bilinguals' interpretation of indefinite objects in negative sentences, i.e., (6) below. Given that the grammar of monolingual Dutch children in the developmental stage between 4 and 6 years old incorrectly allows both a specific and a non-specific interpretation of sentences such as (6), and monolingual Italian children almost always interpret indefinites in (5), repeated here as (7), specifically, we predict that the preferred specific interpretation in Italian will reinforce the specific interpretation in Dutch, thus leading to an accelerated process for the bilingual children compared to their monolingual peers. In other words, following e.g., Kupisch (2007), we expect to find evidence of crosslinguistic influence in the form of acceleration.

(6) De jongen heeft een vis niet gevangen

The boy has a fish not caught

The boy didn't catch a fish

(7) Marco non ha pescato un pesce

Marco not has caught a fish

Marco didn't catch a fish

6.1 Participants and Method

We presented the same TVJt as used in the previous experiment with Italian monolinguals presented above. The participants were thirteen Italian-Dutch simultaneous bilingual children (age: 4;1 to 6;1, mean age = 5;5) and fifteen Dutch monolingual children (age: 4;1-6;5, mean age = 5;4). There
was no significant effect of age ($W=121$, $p=0.1441$). All bilingual children were raised according to the ‘one parent, one language’ approach and for 12 of them, the mother was the Italian-speaking parent. All the participants were living in the Netherlands at the time of testing and attended primary school where Dutch was the main language of instruction. Parents were asked to indicate which language English or Dutch each person used when addressing the child. They were also asked to indicate the amount of time spent at daycare or school and the amount of time spent weekly on other activities (i.e., including sports, watching TV, time spent with friends) and which of the two languages was used (Unsworth, 2013).

The bilingual children were tested in both languages. To avoid any carryover effect from Italian, bilinguals were tested first in Dutch and then in Italian with a two-week minimal interval.

### 6.2 Results

For all groups, and for both languages, the dependent measure used was the percentage of correct yes-responses, which is the adult response in the experimental context provided. For Italian, the bilingual and monolingual children accepted the target sentences, as in (7), relative to the scenario in Figure 1, at a rate of respectively 95% (62/65 trials) and 88% (48/54 trials). We found no significant differences between these two groups ($\beta=0.95$, $se(\beta)=0.64$, $z=1.49$, $p=0.14$). For Dutch, a comparison between the bilingual and monolingual children showed that while only 54% (41/75) of the indefinites were interpreted specifically by the monolinguals, the bilinguals accepted the target sentence 95% of the time (62/65 trials). This difference was significant ($\beta=-5.56$, $se(\beta)=2.24$, $z=-2.49$, $p<0.02$). Moreover, for the bilinguals, no significant difference was detected between the two languages ($\beta=-0.73$, $se(\beta)=0.885$, $z=-0.820$, $p<0.41$): bilingual children accepted the test sentences 95% of the time both in Italian and in Dutch. Furthermore, the reasons children provided for accepting or rejecting the test sentences (when available) were all of the type: "Yes, because she
forgot to paint one" or "No, she painted these eggs" (pointing at the two colored eggs). The results are presented in Figure 6.

Figure 6. Proportion of indefinite objects interpreted specifically by monolingual and Italian-Dutch bilingual children in Dutch (two leftmost columns) and Italian (two rightmost columns)

As in Study 1, children’s individual response patterns in Dutch were categorised as specific (if 4/5 or 5/5 items accepted), non-specific (4/5 or 5/5 items rejected) or mixed (2/5 or 3/5 accepted). This analysis, given in Figure 7, revealed that while all the bilingual children showed a specific/adult response pattern, the monolinguals exhibited this same pattern in only 40% of the trials. In the remaining trials, Dutch monolingual children were either at chance (25%), or performed non-adult like (35%). The acceptance observed for the monolingual Dutch children is in line with previous findings (Krämer 2000; Unsworth, 2005), but lower than the rate found in Study 1 (Fig. 3), a point to which we will return in Section 7.2.
Figure 7. Proportion of monolingual and bilingual (Italian-Dutch) children with given response pattern when tested in Dutch.

6.3 Discussion

Study 1 examined whether there was crosslinguistic influence in English-Dutch simultaneous bilingual children. Study 2 replicated Study 1 with Italian-Dutch simultaneous bilingual children. We predicted that, given the early availability of the specific reading in Italian, as demonstrated in Study 2a, there would be influence from Italian to Dutch. In other words, we hypothesised that when tested in Dutch, the bilingual children would be able to access the specific reading earlier than their monolingual peers. The results (Study 2b) confirmed our prediction: they revealed that while only 40% of the monolingual children in Dutch interpreted the scrambled sentence specifically, all bilingual children showed an adult-like preference for the specific interpretation. In other words, the results showed crosslinguistic influence in the form of acceleration, which is in line with e.g., Kupisch (2007) and Liceras, Fernández Fuertes and Alba de la Fuente (2011).

We believe two factors are responsible for the observed interaction between Italian and Dutch in bilingual children. First, in the interpretation of
the indefinite there is *partial overlap*, which is one of the conditions (indirectly) posed by MULK for the occurrence of crosslinguistic influence. Second, such *partial overlap* is determined by a language-internal property of Italian, namely the fact that in Italian the indefinite *un* is homophonous with the number *one*, in a similar way as Su (2000) observed for Chinese. It is this property which accounts for why Italian monolinguals and bilinguals tested in Italian overwhelmingly access the specific interpretation, and why Italian-Dutch bilinguals are facilitated in restricting the interpretation of scrambled indefinites to the specific one.

7. Comparison of Study 1 and Study 2

In this section we make a direct comparison between the datasets in Study 1 and Study 2.

7.1 Results

Before we can compare the English-Dutch and English-Italian children’s behaviour on the specific indefinite task, we first need to ensure that there are no obvious differences between the two groups in terms of a number of background variables. Indeed, the two groups did not differ in age at testing \((U= 188, p= 0.07)\), nor did they differ in terms of amount of exposure to Dutch, either in terms of parental input \((U=121, p= 0.60)\) or input from other sources such as TV and media, reading or being read to, friends and extra-curricular activities \((U= 96, p= 0.15)\). All children were resident in the Netherlands at the time of testing and they all attended primary schools where Dutch was the medium of instruction. Taken together, these facts suggest that the two groups of bilingual children are appropriate candidates to investigate the effect of crosslinguistic influence. Statistical analyses confirm the cross-study observation that the Italian-Dutch bilinguals outperform their English-Dutch peers \((\beta = 3.80, se(\beta)= 1.81, \ z= 2.10, p <0.05)\).
7.2 Discussion

In Study 1 we found no evidence of crosslinguistic influence from English to Dutch in the acceptance of specific indefinites in Dutch-English bilingual children. In contrast, in Study 2, we found evidence of crosslinguistic influence in the acceptance of specific indefinites in Dutch-Italian bilingual children. At first glance, the results from Study 1 and Study 2 lead to a conflicting picture. In order to explain these apparently conflicting findings we will focus on two variables, namely the extent to which experimental setting affects the availability of overlap between the bilingual children’s two languages, and the properties of the languages under consideration.

As we saw above, MULK assumes that crosslinguistic influence is expected to take place when two languages show structural overlap. In this paper we extended this proposal to overlap at the level of interpretation. Although not explicitly stated as such, what appears to be intended by MULK is that the two languages exhibit partial overlap (Unsworth, 2003). However, for any pair of languages that are in such a partial overlap configuration, it may be possible to find contexts which alter the extent to which such overlap exists such that rather than partial overlap, complete overlap ensues. In such cases, it becomes impossible to tell the two languages apart. We would like to argue that this is what happened in Study 1. The possibility that overlap between a bilingual child’s two languages may depend on a given context has thus far remained unnoticed because most of the studies dealing with crosslinguistic influence in bilingual acquisition have been concerned with syntactic phenomena for which the extent of any surface overlap has perhaps been somewhat easier to establish. Context becomes crucial, however, when one deals with phenomena at the syntax-semantics interface, as in the present case.

The question is thus whether the experimental context in our Study 1 was indeed the right context to discover crosslinguistic interference to begin with. Based on our analysis of previous literature we cannot exclude the
possibility that the experimental context of Study 1 might have obscured the differences between Dutch and English (as shown by the fact that monolingual and bilingual children in that context behave similarly and access the specific reading of the indefinite more or less 70% of the time), thereby making it impossible to detect any crosslinguistic influence.

To illustrate, we first need to explain why the monolingual Dutch children in Study 1 accessed the specific interpretation of the target sentence at a higher rate than in Study 2b. To address this issue, we turn to previous research on the monolingual L1 acquisition of scope. In this literature there are many studies showing that children’s resolution of scope ambiguity can be heavily influenced by the experimental or contextual settings. For instance, Gualmini et al. (2008) presented both experimental evidence and theoretical arguments challenging the up-to-then widely accepted view about ambiguity resolution in children. In particular, Gualmini et al. (2008) showed that when children’s grammar makes more than one interpretation available for a given structure, children’s judgement is guided by contextual factors more readily than by considerations of truth. The authors carefully reviewed earlier studies (e.g., Su (2001), Gualmini (2003), and Musolino and Lidz (2006) and found that children were consistently able to access both scope assignments of scopally ambiguous sentences depending on the contextual settings.

Based on these findings, we can thus hypothesize that the experimental context chosen in Study 1 could be characterized as a context that facilitates the specific reading of the target sentence. In particular, the pictures used in the experiment reported in Study 1 might have drawn the participants’ attention to the objects to which the main character failed to carry out the relevant action (e.g., the candle that had not blown out), due to the presence of an arrow pointing to those objects. This might have the effect of making the specific reading more prominent. Since the difference between adult Dutch and adult English boils down to the unavailability of the non-specific reading in Dutch, a more suitable context would have been one making this non-specific reading more prominent. An alternative solution, and indeed the one adopted in Study 2a and 2b, was to remove the arrow, in order to decrease the prominence of the specific reading. In our view, this maneuver
is responsible for the lower acceptance rate of the specific reading of the target sentence in the Dutch monolinguals in the experiment in Study 2a in comparison with the Dutch monolinguals in Study 1. Crucially, however, the experimental setting used in our Study 2b was the same for Dutch monolinguals and Dutch-Italian speaking children, which means that the experimental context cannot be responsible for the observed differences between these two groups. Our account for this difference draws on the internal properties of the different input languages, Dutch and Italian.

As we mentioned above, Gualmini et al. (2008) focused on the role of context in children’s resolution of scopally ambiguous sentences. Although they explicitly argue that context takes precedence over truth conditions, this leaves open the possibility that within the very same experimental setting, other factors might play a role. In our view, the results obtained in Study 2 suggest that lexical factors also play a role. In other words, the fact that the indefinite un/uno in Italian is homophonous with the numeral uno (one), coupled with the fact that numerals tend to have specific readings more freely than genuine indefinites, led Italian monolingual and Italian-Dutch bilingual children to consistently access the specific readings of the target sentences. What is more, the ease of accessing the specific interpretation of the target sentence by Italian-Dutch bilinguals also surfaced when these children were tested in Dutch, thereby showing an effect of crosslinguistic influence, which we might describe as acceleration in contrast with their Dutch monolingual peers.

Our findings also indirectly speak to the question of whether language dominance is a predictor of crosslinguistic influence. The two groups of bilinguals did not differ on a number of background variables, namely age at testing and amount of exposure to Dutch. This latter variable is often used as a proxy for language dominance (in its narrow sense; Unsworth, 2015), and as such, these results (indirectly) suggest that dominance is unlikely to play a role in explaining the difference between the Italian-Dutch and English-Dutch bilinguals (as argued by MULK, but cf. Argyri and Sorace, 2007). Needless to say, some independent, objective and crosslinguistically comparable measure of the children’s relative proficiency in their two languages would be necessary to confirm this.
8. Conclusion

The findings presented in this paper shed light on some of the factors that may predict crosslinguistic influence in bilingual acquisition. First, they provide further evidence for crosslinguistic influence at the level of syntax-semantics, in line with the studies by Lee et al. (2010) and O’Grady et al. (2011). Second, our results suggest that amount of exposure (and by extension, language dominance) is not always a reliable predictor of crosslinguistic influence, in line with MULK, amongst others. Finally, our findings show that when contextual factors are controlled for, and in cases of partial overlap between a bilingual child’s two languages, crosslinguistic influence may obtain as result of language-internal properties of one of the two languages. In the present case, this crosslinguistic influence manifested itself in the form of acceleration.

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