Bilingual first language acquisition at the interface between syntax and pragmatics*

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This paper has as its starting point the assumption that in acquiring two languages from birth, bilingual children separate their grammars from very early on. This does not, however, exclude cross-linguistic influence – the possible influence of one language on the other. The main focus of the paper is on the acquisition of syntax in a generative framework. We argue that cross-linguistic influence can occur if (1) an interface level between two modules of grammar is involved, and (2) the two languages overlap at the surface level. We show that both conditions hold for object drop, but not for root infinitives. Root infinitives satisfy the first condition: they involve the interface between syntax and pragmatics. However, they do not satisfy the second condition. Therefore, we expect cross-linguistic influence to occur only in the domain of object drop and not in the domain of root infinitives. Comparing the development of the two phenomena in a bilingual Dutch–French and a German–Italian child to the development in monolingual children, we show that this prediction is borne out by our data. Moreover, this confirms the hypothesis that cross-linguistic influence is due to language internal factors and not to language external factors such as language dominance: the periods during which we observe influence in the domain of object drop and non-influence in the domain of root infinitives are identical.

In the last decade, most studies of bilingual language acquisition have shown that bilingual children are able to differentiate between their two languages from early on (Genesee, 1989; Meisel, 1989; De Houwer, 1990; Müller, 1993; Gawlitzek-Maiwald and Tracy, 1996; Hulk, 1997). These studies criticized an earlier view of bilingual acquisition, namely that children who are exposed to two languages from birth necessarily start out with one unitary language system (Volterra and Taeschner, 1978; Taeschner, 1983, for example). The hypothesis of an initial unitary language system was based on the occurrence of words or constructions of one language in the other: it was claimed that such mixed utterances show that children do not always separate their two languages. However, Lanza (1992), and others, showed that formal aspects of language mixing by bilingual two-year-olds do not indicate the child's lack of language differentiation, but are a sign of the way in which the children differentiate their language use in a contextually sensitive way.

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Recently, the separate language hypothesis has been further refined (Gawlitzek-Maiwald and Tracy, 1996; Hulk, 1997; Döpke, 1998; Müller, 1998; Müller, Hulk and Jakubowicz, 1999). The development of two languages in a bilingual child may be largely autonomous, but this does not exclude the possibility that there can be influence from one language on the other. In such cases we will speak of "cross-linguistic influence". Cross-linguistic influence then is not to be taken as mixing or fusion, but it could show up as facilitation/acceleration, delay, or transfer (Paradis and Genesee, 1995; Genesee and Paradis, 1997). In studying bilingual language acquisition, we observe the emergence of grammars of two languages at the moment of creation, when they are in close contact with each other. As suggested by MacWhinney (1987), the bilingual child may attempt to make short cuts and allow strategies from one language into the other. Plausibly, such "short cuts" are taken when the child has to cope with problematic input. The interesting question is to find out what this problematic input is, i.e. which parts of the grammar are sensitive to such cross-linguistic influence and why this should be so.

In this article our starting point will be that

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bilingual children separate their grammars from very early on, but that acquiring two languages simultaneously is not exactly the same as acquiring each language separately. Our main focus will be on the acquisition of syntax in a generative framework. Assuming that with bilingual children as with monolingual children language acquisition is constrained by the principles of Universal Grammar, we explore the hypothesis that cross-linguistic influence is more likely to occur in exactly those areas which are also problematic – albeit to a lesser extent – for monolingual children. Recently, Platzack (1999) has proposed that it may be possible to single out a particular domain of the clause, i.e., the C-domain, causing problems in different types of language acquisition. As is well known, very early first language (L1) learners, children with Specific Language Impairment (SLI), adult second language (L2) learners, and patients with Broca's aphasia use non-target-like syntax. With respect to clausal structure, these learners share a non-automatized, non-target-like syntax at the highest structural level, the C-domain. Grammatical properties like verb second, complementizers, and topicalization are typical examples of syntactic phenomena related to the C-domain, the left-periphery of the sentence, whereas pre/postposition, the order between main verb and object, between object and adverbials are accounted for in other domains. Moreover, there is a clear connection between the composition of a domain and the type of information expressed: in the C-domain the information exchanged concerns pragmatic, discourse-related information and information regarding sentence types. Typically, the C-domain is also seen as an interface level connecting internal grammar and other cognitive systems. We would like to hypothesize that it is in this "vulnerable" CP-domain, at the interface between syntax and pragmatics, that we expect that the two languages in bilingual acquisition may interact, that cross-linguistic syntactic influence may manifest itself.

However, for a bilingual child the input may be problematic in another way. The bilingual child is exposed to a much wider range of syntactic possibilities than the monolingual child and s/he is offered structural possibilities not available to monolinguals. Plausibly, the two languages in a bilingual context are not processed in isolation from each other,[1] but children compare and contrast them and may use the "short cuts" mentioned above. The extent to which this happens, will depend not only on the "vulnerability" of the domain, but also on the structural overlap between the two languages. It may be the case that language A has a construction which may seem to the child to have more than one structural analysis (one of which is not correct) and that language B reinforces one of these two structural analyses (the "wrong" one – leading to problems – or the "right" one – leading to facilitation). Döpke (1997, 1998), working in the framework of the Competition Model of Bates and McWhinney (1989) has suggested something very similar: she observed that the bilingually raised children she studied acquired their languages incrementally on the basis of cue strength and cue cost, where partially overlapping structures in the input from German and English created structural saliencies for the children, leading them to produce non-target structures for an extended period of time. We want to go one step further, and try to propose an approach predicting which (syntactic) phenomena in a given language will experience cross-linguistic influence.

We have shown elsewhere (Hulk and van der Linden, 1996; Müller and Hulk, 1999; Müller et al., 1999; Hulk, 2000) that for the syntactic phenomena studied, i.e., object drop and object preposing, the Germanic language influences the Romance language and not vice versa and this influence is indirect. Indirect syntactic influence is likely to occur if (i) one of the languages opens the possibility for two grammatical analyses of a particular construction, and (ii) the other language seems (to the child) to support one of these two possible analyses. This presents the bilingual children with conflicting evidence. As a consequence, s/he can be confused and may pursue the "wrong" syntactic analysis (the one supported by both languages) for some time. Crucially, it takes the bilinguals longer than monolinguals to figure out the language-specific analysis for the phenomenon in question.

Our hypothesis is that (syntactic) cross-linguistic influence occurs in bilingual children and that it is possible only if the two following conditions are both met:

1 Cross-linguistic influence occurs at the interface between two modules of grammar, and more particularly at the interface between pragmatics and syntax in the so-called C-domain, since this is an area which has been claimed to create problems in L1 acquisition also.
2 Syntactic cross-linguistic influence occurs only if language A has a syntactic construction which may seem to allow more than one syntactic

[1] Interestingly, for bilingual adults there is a large corpus of experimental, psycholinguistic research which shows that both languages remain active even in a monolingual context. De Groot (1993) and Kroll and Sholl (1992), among others, have observed that in different tasks, such as word associations, lexical decision-making, priming tasks, bilingual adults are not able to inhibit completely one of their languages.

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> analysis and, at the same time, language B contains evidence for one of these two possible analyses. In other words, there has to be a certain overlap of the two systems at the surface level.

In other words, the assumption is that cross-linguistic influence is due to language internal reasons and not to factors such as language dominance, which are determined by factors external to the languages involved. Müller and Hulk (1999) exclude language dominance as an explanation for the observed influence/non-influence for several reasons. First, if language dominance was at work, we would expect that the respective Germanic language was the dominant language in the children studied during the period of investigation. This is not supported by the data (language dominance being measured in terms of MLU values in the different languages) in either child. Second, if language dominance was the reason for cross-linguistic influence, we would not expect cross-linguistic influence to occur in reverse directions during the same developmental phase. This prediction is not borne out by the data, since there are other grammatical phenomena which show influence of the Romance language on the Germanic language.

The two conditions being investigated in the present study are meant to represent necessary although not sufficient conditions for cross-linguistic influence since one can observe that some bilinguals do not show any influence during the acquisition process, not even for those grammatical phenomena which display cross-linguistic influence for a period of more than a year in other bilinguals. In this article, we do not address the question of individual differences.

Cross-linguistic influence in bilinguals may create delay in the acquisition process: we then expect a quantitative, but not necessarily a qualitative difference, between monolingual and bilingual children. In this article, we examine data from two bilingual children, Anouk and Carlotta, and compare the results of our study on object drop in bilingual acquisition (Müller and Hulk, 1999; Müller et al., 1999) where both conditions are met and cross-linguistic influence occurs, with the phenomenon of Root Infinitives (RIs). At an early age, (monolingual) children know the processes of verb movement, but at the same time they optionally use both forms with finite and with non-finite verbs (cf. Wexler, 1994) in matrix sentences, where adults only use finite forms. This stage is often called the Root or Optional Infinitive stage. We will show that although RIs meet condition (1) they do not meet condition (2) and, therefore, no cross-linguistic influence is expected, contrary to what happens with object-omissions.

The article is organized as follows. After a brief methodological section, we summarize the findings of our object-drop study and show how the two conditions are met and to what extent cross-linguistic influence is found. The next section considers the acquisition of root infinitives, in general, in monolingual children and we will show that this is an area which meets our condition (1): root infinitives cause problems in (monolingual L1) acquisition; they are grammatically unanchored structures whose interpretation depends on discourse and other contextual information. We then take a closer look at the root infinitives in the Germanic and Romance languages under discussion and we will show that, contrary to what we found for object drop, condition (2) is not met: there is no structural overlap and it is not the case that one of the two languages (wrongly) reinforces one (seemingly) possible structural analysis in the other language. Since we are claiming that both conditions have to be satisfied in order for cross-linguistic influence to be possible, we predict that no such influence will manifest itself with respect to the phenomenon of RIs. In the following section, we will examine the production and development of Root Infinitives in our two bilingual children. In this article, which represents the first step of a larger study on RIs, we will focus on aspects of a (global) quantitative comparison with monolingual children. We will show that the rate and the range of such infinitives in the spontaneous production data of Anouk and of Carlotta fall within the limits mentioned in the literature on monolinguals for all four languages. We will also briefly consider some of the qualitative properties of their RIs. We will show that although a more elaborate study of these aspects is left for further research, the data we consider do not lead us to expect a substantial difference from monolingual children in this respect.

Methodology

In this article we discuss data from two bilingual children, Anouk and Carlotta, which have been collected at the University of Amsterdam and the University of Hamburg respectively.

Anouk has been living in Amsterdam from birth and is being brought up bilingually by her French mother who speaks only French to her and her Dutch father, who speaks only Dutch to her, following the strategy of "one person – one language". Anouk's mother understands Dutch and speaks it reasonably well. Anouk's father understands French but speaks it poorly. From about six months of age

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onwards Anouk attended a Dutch kindergarten for three days a week. The corpus was collected by making audio recordings of both languages. The recordings were made by the mother for French, and by the father – and a native Dutch student – for Dutch, at approximately three-week intervals, starting at age 2;3;13, when Anouk first produced intelligible utterances of more than one word, until the age of 3;10;7. Unfortunately, the Dutch data were not collected as frequently as planned, and therefore we have fewer data on Dutch than on French. All data were transcribed by a native Dutch student of French in the CHAT-format. No phonetic transcription was made. The MLU is counted with respect to the number of words, not morphemes (cf. Wijnen, 1995; Hulk and van der Linden, 1996; Genesee and Paradis, 1997; Jakubowicz and Rigaut, 1997; Lasser, 1997, among others).

Carlotta has been raised in Hamburg from birth and is being brought up bilingually by her Italian mother and her German father. Both speak their respective mother tongues to Carlotta. Both parents know each other's language well, but decided to speak Italian with one another. The data were collected twice a month for about 45 minutes in each language. The child has been video-recorded starting at the age of 1;8;28. During the recording sessions the two languages were separated. The data were transcribed by native speakers of Italian and German respectively. The MLU is counted with respect to the number of words, not morphemes.

Object drop

In recent work (Müller and Hulk, 1999; Müller et al., 1999) we have shown that early object drop in the two bilingual children we consider here shows the influence of the Germanic topic-drop language (Dutch/German) on the Romance non-topic-drop language (French/Italian). Monolingual Dutch and German children omit objects frequently, not only in constructions where this is allowed in the adult language, in sentence-initial position as in (1), but also in target deviant constructions, in sentence-internal position as in (2)[2]:

(1) Heeft mevrouw de Wachter gemaakt (Joost 2;08;19)
[THAT] has Mrs. de W made

(2) Ik heef gevonden (Hein 2;6)
I have [THAT] found

Monolingual French and Italian children also omit objects, but less frequently (Jakubowicz et al., 1997):

(3) il met dans le bain (Lou)
he puts [HER] in the bath

We assume that in the early stages of language acquisition children universally license empty objects as empty topics via a (default) discourse licensing strategy. Adult German and Dutch allow empty object topics in clause-initial position, under certain contextual conditions. Therefore the Dutch/German input presents the child with evidence for the validity of a discourse licensing strategy for empty objects. A child acquiring French or Italian, however, gets input which may be confusing as to the validity of this strategy. On the one hand French/Italian input contains constructions in which the canonical object position, following the lexical verb, is empty (indicated by EC in the examples), either because the object is topicalized, as in (4), or because the object remains implicit, as in (5). These constructions are contextually and lexically constrained in French.

(4) ça j'ai vu EC
that I have seen

(5) je sais EC
I know

Constructions with a preverbal object clitic, however, are very frequent and there also the canonical object position, following the lexical verb, is empty (EC):

(6) Jean le voit EC
John him sees

(7) Marie le sait EC
Marie it knows

Such constructions might (incorrectly) give the child the idea that, in French, the canonical object position may be (optionally) empty and that discourse licensing is also at work in adult language, explaining the occurrence of object omissions in monolingual children. French and Italian are clearly different from the Germanic languages, however, in that in most cases the empty object is licensed by a (preverbal) object clitic. Therefore, the monolingual child will soon abandon the (default) discourse licensing strategy in this case and adopt the (language-specific) morphological licensing of the empty object position by a preverbal clitic. Moreover, in both Germanic and Romance monolingual children the decrease of target deviant object omissions corresponds to an increase of C-related constructions (see Müller, Crysman and Kaiser, 1996; Müller and Hulk, 1999; Müller et al., 1999, for details).

The phenomenon of object drop constitutes an example of what is characterized under condition (1)

[2] The interpretation of the examples has been done in context. In isolation other interpretations are alsopossible.

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above: a default discourse-based strategy interacts with a language specific, morpho-syntactic licensing mechanism crucially involving the C-domain. Moreover, it is a phenomenon creating problems for monolingual children.

The question now is: does it also meet the second condition? We argued (op.cit.) that the answer is positive: the input the bilingual child gets from French/Italian may present only limited evidence in favour of the default discourse licensing strategy, the Dutch/German input, however, contains a lot of positive evidence for such a strategy. Therefore, a situation arises corresponding to what we characterized in the second condition mentioned above: the (non-target-like) discourse licensing of empty objects in French/Italian is reinforced by the input of the topic-drop Germanic languages.[3] We found that indeed the bilingual children use object drop in their Romance language in a way similar to monolinguals but to a much higher degree. Target deviant object omissions decrease once the C-system is integrated into the child's grammar, but continue to be used for a long period (see Müller and Hulk, 1999; Müller et al., 1999, for details about the relation between the increase of phenomena involving the C-system and the decrease of object drop in the Romance languages of the two bilingual children under discussion).

Our approach makes a clear prediction: a bilingual child acquiring French/Italian and English, a non-topic-drop Germanic language, should not show this type of cross-linguistic evidence, i.e., more object omissions in her/his Romance language, since condition (2) is not met. J. Paradis (p.c.) informs us that this indeed appears to be the case. In the next section, we will consider the phenomenon of Root Infinitives which we will argue also meets only one of the two conditions, condition (1), for the languages involved. Therefore we predict no cross-linguistic influence of one language on the other in the two bilingual children under consideration. We will show that this prediction is borne out.

Root Infinitives

Children in many languages go through a stage where they use clausal utterances optionally containing a finite or a non-finite verb (infinitive or past participle), where the adult language would allow only finite verbs. In what follows, we will call this the Root Infinitive stage. There has been a lot of discussion in the literature about the distribution of RIs within and across languages and about the syntactic structures underlying RIs. Here, we are mainly interested in the following two questions:

(i) In what way do RIs involve the interface between syntax and pragmatics (and meet condition (1) ?
(ii) Does one of the adult languages (seems to) allow RIs, reinforcing the grammar adopted by the child in the RI-stage (i.e. is condition (2) fulfilled)?

Many linguists (Avrutin, 1997; Wijnen, 1997; Hoekstra and Hyams, 1998, among others) have argued that root constructions with infinitives in both adult and child language involve a non-syntactic way of introducing an event in the discourse. In the analysis of Hoekstra and Hyams (1998), RIs are (grammatically) unanchored structures, as opposed to finite clauses which are grammatically anchored via a temporal operator located in C (cf. Enç, 1987; Guéron and Hoekstra, 1989). Finiteness makes visible the chain between the operator in C and the verb in the Tense-position. Languages may vary with respect to the morphological means to make this chain visible: person or number features in the verbal morphology, specific markers, subject clitics. In RIs, according to Hoekstra and Hyams' analysis, the eventuality is not fixed via the grammatical binding by a temporal operator in C, but the event is interpreted in discourse, in the manner of a free pronoun. Such an interpretation crucially depends on discourse and other contextual or presuppositional information. RIs are not ungrammatical in adult grammar, but they have a much more limited use: they appear in particular contexts such as Mad Magazine Sentences, certain (rhetorical) exclamatives and imperatives. Consequently, the difference between adults and children does not reflect a grammatical difference, but a difference at the interface between grammar and discourse. Children allow discourse-related mechanisms to a much greater extent than adults do. We have seen the same in the case of licensing of null objects. Children have to discover the language-specific, syntactic licensing mechanisms that will replace the early discourse mechanisms. In some languages such as Dutch where RIs essentially have a modal interpretation, the child does not have to replace the infinitival verb with a finite one, but rather with a construction involving a (finite) modal verb in combination with the infinitive. In Dutch

[3] An anonymous reviewer phrased it as follows:

> If the two languages a bilingual child is learning include language A [here French/Italian] which does not have the default setting in the target language, and language B [here Dutch/German] that does, this child is likely to learn the appropriate parameter setting for language A substantially later than will a monolingual child since the default setting is reinforced by the input from language B.

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child language the decrease in RIs coincides with an increase in modal verbs (Jordens 1991; Wijnen, 1995). This modal interpretation of RIs in Dutch has also been related to another property: RIs do not allow stative predicates, but require event-denoting predicates, whereas finite verbs are equally split between eventive and stative verbs (Wijnen, 1997). The same restriction has been found for RIs in French (Ferdinand, 1996). RIs in French child language, however, do not always have a modal interpretation. Moreover, the decrease in RIs in French child language is related to the increase in subject clitics, which, according to many, are finiteness/agreement markers base-generated in INFL. Another explanation for the eventivity constraint can be found in the observation that non-eventive verbs do not have an event variable and therefore can only be licensed grammatically and not via discourse anchoring of the event.

To summarize, most authors agree that, for RIs, the shift to adult grammar will involve the restructuring of the mapping between grammar and pragmatics. In this sense, the phenomenon of RIs may be considered as satisfying condition (1) mentioned above for cross-linguistic influence to occur in bilingual children.

The question now arises as to whether root infinitives also satisfy the second condition mentioned above. In a restricted set of contexts, root constructions with an infinitive are possible in adult Dutch and German (Lasser, 1997; Wijnen, 1997):[4]

(8) niet doen!
not do

(9) wie diese schliessen?!
how these close

Root constructions which contain an infinitive are also marginally possible in French and Italian; they are mainly used with exclamative or imperative interpretation:

(10) que faire?!
what do

(11) partire immediatemente!
leave immediately

In both the Germanic and Romance adult languages root constructions with an infinitive are in general not possible in main declaratives. Therefore, the situation is somewhat different from what we have seen in the case of object omissions. For that phenomenon we have seen that:

(i) the Germanic adult languages allow object (topic) drop
(ii) the grammar initially adopted by (all) children in early stages (optionally) allows empty objects (which are discourse licensed)

Therefore, the input of the adult Germanic languages reinforces the early (discourse-oriented) child grammar: monolingual Dutch/German children drop more objects than monolingual French/Italian children in this initial stage. With respect to the bilingual Germanic–Romance children, the Germanic adult input makes it harder for them to grasp the morpho-syntactic licensing mechanism in their Romance language: they use more object drop and remain in the initial discourse-oriented object-drop stage longer than their monolingual peers.

Let us now consider the situation for RIs. Both Germanic and Romance adult languages allow RIs under specific contextual restrictions, but they also both disallow RIs in root declarative clauses. All children optionally produce RIs where adults would use finite root declaratives. These RIs are unanchored syntactically. Neither of the two types of adult languages offers input which reinforces this particular child grammar,[5] as was the case for object omissions. Consequently, it is not the case for RIs that one language offers a possibility to the bilingual child to misanalyse them as a grammatical alternative to finite (declarative root) sentences in the other language.

Summarizing, we conclude that condition (2) which has to be met if cross-linguistic influence is to occur, does not hold here. If we are right in assuming that for cross-linguistic influence to be possible both conditions have to be satisfied, then we predict that, although the first condition is met, no such influence will be found in our bilingual children since the root infinitive phenomenon in these languages does not meet the second condition.

In what follows, we will indeed show that this prediction turns out to be correct.

Root Infinitives in monolingual Dutch/German and French/Italian children

It has been shown by many researchers that there are quantitative and qualitative differences between RIs in Dutch/German and French/Italian children. Before we consider production data from our two bilingual children, we briefly consider some of the

[4] Lasser mentions adult RIs in German with imperative, interrogative, and rhetorical function, RIs expressing desires and RIs commenting on on-going events.

[5] Alternatively, one could say that both types of adult languages offer input which shows that RIs are possible (under certain conditions). What is crucial here is that the languages do not differ in this respect.

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most characteristic aspects of monolingual children's RIs discussed in the literature. For each language, we summarize the quantitative findings from the literature for the frequency and development of RIs in monolingual children. Unfortunately, the way in which these quantitative results are obtained differs between studies and moreover, we do not have the same amount of information for all languages involved at our disposal. Therefore, one has to be cautious in comparing these monolingual results from the literature with our own results for the bilingual children.[6] All we can do here is observe tendencies and suggest explanations. Because of the lack of (methodologically) homogeneous data we have chosen to compare the RIs of monolingual and bilingual children by examining whether the rate of bilingual RIs falls within the rate of RIs found for monolingual children, in the following way:

(i) we compare the mean percentages of RIs (if available) and we compare the highest percentage of RIs found in the bilingual child with the highest percentage mentioned in the literature for monolingual children;
(ii) we compare the age (and MLU if available) at which the RIs disappear. We take 5 per cent to indicate "disappearance";[7]
(iii) we also try to establish whether there is reason to assume that the bilingual RIs are qualitatively different from the RIs in monolingual children. Since a qualitative comparison is not our main goal here, we will focus on some of the most characteristic properties mentioned in the literature, without going into the different syntactic analyses proposed.

French

In the data from monolingual French children, RIs do not appear before finite verbs. From the beginning of the available data both finite verbs and RIs are found. The first files for some children contain finite verbs only. As to the frequency of RIs in French child language, Pierce (1992), Ferdinand (1996), Jakubowicz and Rigaut (1997) present different percentages. Jakubowicz and Rigaut (1997) studied 12 children between age 2;0;13 (MLU 2.92) and age 2;7 (MLU 4.95). They divided them in two groups, (1) children with a mean MLU of 3 (mean age 2;4;10) and (2) children with a mean MLU of 4 (mean age 2;5;7). They considered spontaneous and elicited productions and counted past participles and infinitives as non-finite forms.[8] Moreover, they distinguished between RIs that they judged legitimate (i.e., acceptable also in adult language) and RIs that they judged illegitimate. They found a low percentage of illegitimate RIs: the mean percentage in the first group was 3.9 per cent, in the second group 1.3 per cent.

Pierce (1992) and Ferdinand (1996), who studied the data available on CHILDES (Philippe and Gregoire) and the Lightbown corpus (Nathalie and Daniel), found much higher rates of RIs: 20–30 per cent. This difference with Jakubowicz and Rigaut could be due to various factors. First, the children in the Pierce and Ferdinand studies were younger. Nathalie's data (as mentioned in Ferdinand) are from ages 1;9;3 to 2;3;2, Daniel's from 1;8;1 to 1;11;1, Gregoire's from ages 1;9;14 to 2;3;0 and Philippe's from 2;1;19 to 2;6;27.[9] If we take the percentage of RIs at age 2;3 in these children, the closest we can get to the age group considered by Jakubowicz et al., we find the following: Nathalie 6 per cent, Gregoire 8 per cent, Philippe 10 per cent.[10] If we now take into account that both Ferdinand and Pierce considered spontaneous speech data only and did not distinguish legitimate from illegitimate RIs (as far as we know), the difference from the results of Jakubowicz et al. is not so great.

In order to establish whether the RIs of the bilingual children we studied fall within the range of monolingual children, we will compare them not only to the mean percentage (as done above) but also to the highest percentage found for monolinguals and the latest age at which this percentage was 5 per cent or below, which we consider as "disappearance" (as mentioned above). For French, we use the data given in Ferdinand (1996) and find that the highest percentages of root infinitives were observed in Daniel. In the first three files (age from 1;8;1 to 1;9;3), 49 verbal forms out of 91, 56 out of 106 and 45 out of 82, respectively, were non-finite.[11] This corresponds to 54 per cent of the verbal forms produced. From age

[6] Ideally, as has been pointed out to us by an anonymous reviewer, there should be full data on all the relevant aspects for all children considered. Since this information is not available in the literature, we have to work with an imperfect data set and be cautious with respect to the validity of our findings.

[7] In fact this percentage is chosen rather arbitrarily – we do not wish to go into the methodological problem of what constitutes "acquisition" here.

[8] In the most frequent verb class in French both the infinitive on *-er* and the past participle on *-é* are pronounced identically, so no distinction can be made.

[9] Ferdinand does not give MLUs. Pierce gives MLUs, but uses an unusual way in indicating the ages (in months) and does not consider Gregoire. Nathalie's MLU is between 1.75 and 2.11, Daniel's MLU between 1.5 and 2.45, according to Pierce. Philippe's MLU in the period considered goes from 3.04 to >4.

[10] For Daniel no data are available for that age.

[11] Ferdinand (1996) counted infinitives and past participles together.

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1;10;2 on, the percentage of non-finite forms decreased. As for the age at which the percentage of RIs is below 5 per cent, only data from Philippe are taken into account, since in the other children no such low percentage was found in the data: in Philippe the number of RIs gradually decreases and at age 2;6;13 only 10 out of 211 verbal forms are RIs, corresponding to 5 per cent. A week later this drops to 2 per cent.

What about the more qualitative properties of these RIs? As we have seen above, RIs are said not to contain non-eventive verbs, whereas finite verbs do. This has also been observed for French by Ferdinand (1996, 96) "[for] Nathalie, Gregoire, Daniel and Philippe . . . non-eventive verbs are never attested with infinitival or participial marking".[12] Another (syntactic) property of RIs extensively discussed in the literature, is the structure available or activated at this stage. Without going into this discussion, we will mention the empirical arguments given (by language) in favour of the hypothesis that the RI has more structure than only the lexical projection VP. It is generally assumed that, in the grammar of (adult) French, finite verbs move out of the VP to the higher functional projections, whereas infinitival verbs stay within the VP. The negative element *pas* "not" is (base-) generated just above VP and, therefore, the position of the verb with respect to *pas* can be taken as a diagnostic for verb movement. Ferdinand shows that the French child data contain many examples of negated root non-finite forms with the negative element *pas* correctly preceding the non-finite verb form, next to finite verb forms with *pas* following.[13] This indicates, according to Ferdinand, that the children are capable of distinguishing between finite and non-finite verb forms. Moreover, RIs must have more structure than the VP to accommodate the negative element *pas*. Other elements such as *encore* "again" appear to the left of the non-finite verb also, indicating the presence of more structure than simply the VP:

(12) pas coup[e][14] (Nathalie 1;9;3)
not cut

(13) encore lav[e] (Nathalie 2;0;1)
again wash

Initially, non-finite verbs do not have lexical subjects in Nathalie's data, but they do (optionally) in the data from the other children studied by Ferdinand. When lexical subjects start to appear in Nathalie, two other changes occur: (i) the first auxiliaries preceding non-finite verbs appear (16) and (ii) a few cases of subject clitics with a non-finite verb are found (17):[15]

(14) (v)a pas ranger (Nathalie 2;3;2)
goes not arrange

(15) il tomb[e] (Nathalie 2;3;2)
he fall

Ferdinand argues that this indicates that the (functional) structure of RIs now involves (see note 12) AgrsP, since, in French, subject clitics spell out the morpho-syntactic features of (Agrs in) INFL.[16] Moreover, subject clitics are considered to constitute the morpho-syntactic anchoring of tense in adult French: an increase of subject clitics (in finite sentences) in early French correlates with a decrease of root infinitives and the increase of C-related phenomena (cf. Jakubowicz and Rigaut, op.cit., among others)).

Italian

Just as for French, infinitives in monolingual Italian children's data appear later than finite verbs, although they are less frequent than in French. According to some authors, most non-finite verb forms in child Italian are past participles and not infinitives. Schaeffer (1990) provides data from seven monolingual Italian children and presents data with root infinitives as does Guasti (1993/94) for three children: Martina (age 1;8–2;7), Diana (age 1;10–2;6) and Guglielmo (age 2;2–2;7), no overview of MLU's is given. Both authors observe that from the beginning infinitives appear as both independent (16) and dependent (17) constructions:

(16) babbo vedere la moto (Martina 1;11)
daddy see the motorbike

(17) vai comprare (Martina 2;3)
go shopping

Guasti only counted infinitives (no past participles). She does not give the percentage of RIs per age, per

[12] Ferdinand argues that this eventivity constraint is the result of the meaning of an empty (modal) auxiliary which can only express aspectual or modal modification of an eventive verb. Therefore she assumes such an auxiliary to be present in the (functional TP) structure of the RI.

[13] Interestingly, this is different in L2 French where we find infinitives preceding *pas*. It has been argued that the L2–learners have a deficient morphology and not a truncated structure in the case of RIs, contrary to the claims about L1 acquisition.

[14] The notation [e] is used by Ferdinand to indicate that such a form is ambiguous between a past participle on–é and an infinitive on -er.

[15] The other three children studied also have some relatively late occurrences of subject clitics with root non-finite verbs. Meisel (1990) reports that the few cases of subject clitics with non-finite verbs he found are also relatively late.

[16] Many linguists (e.g. Hulk, 1986; Zribi-Herz 1994; Jakubowicz and Rigaut, 1997) analyse subject clitics in colloquial French as Agrs-heads.

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child. However in note 7 she points out that the percentages of RIs (which she calls optional infinitives) are lower in Italian than in other languages. She mentions 22 per cent of RIs for Martina at age 1;9 , MLU 1.7 (two tokens) and 16 per cent (17 tokens) at age 1;11 (MLU 2,1). Guasti also observes that the period during which root infinitives are used, in early Italian, seems to be shorter than in other languages. She notes however that "a more accurate view may be gained by taking the production of past participles lacking an auxiliary into account". Unfortunately no complete counts are available for past participles: Guasti just mentions that at age 1;11 Martina produces 6 per cent of optional past participles (calculated on the total number of verbs).

As for the age at which RIs disappear, the literature is not completely clear. Schaeffer's children reach age 2;5, but the exact percentage of RIs at that age is not given. It is generally assumed in the literature that in a language such as Italian, which has "rich agreement", this form of morpho-syntactic licensing of INFL is acquired very early (Pizzuto and Caselli, 1992) and, therefore, in those languages RIs are rare and disappear very early.

As for the more qualitative properties of the Italian RIs, little information is available. Guasti (op.cit., note 3) observes that some instances of optional infinitives may result from children's failure to produce a governing modal, other instances replace a genuine finite verb. She argues, based on the placement of object clitics, that Italian children distinguish between finite and infinitival verbs and, based on the position with respect to the negative elements (cf. French), that the structure of the finite clause involves IP. As for the structure of the infinitivals, she hesitates: there are no infinitives with negation in her data. She suggests however that the child will generalize the properties of the finite I to that of the infinite I.

Dutch

In Dutch child language, infinitives appear before finite forms, contrary to what we saw for the Romance languages (Kraemer, 1995; Wijnen, 1995,1997; Haegeman, 1996, among others). All authors describe an early stage in the acquisition of syntax during which verbs virtually only appear in the infinitive form and mostly in utterance-final position:[17,18]

(18) thee drinken (Niek 2;7)
tea drink

(19) autootje (ge)maakt (Niek 2;11;10)
car made

Haegeman (1996) gives the following quantitative data: Hein age 2;4–3;1 mean percentage of RIs: 16;4 per cent, Thomas age 2;3–2;11 mean percentage 18 per cent, Niek age 2;8–3;10 mean percentage 12 per cent. No MLUs are given by Haegeman. The mean percentage, however, is not so interesting for Dutch, since the frequency of RIs does not decrease at a constant rate. As pointed out above, the percentage of RIs may be close to 100 per cent right after the onset of multi-word utterances, and decrease very slowly over the subsequent weeks or months. Wijnen (1995) reports 100 per cent RIs for Peter (age 1;9, MLU 1.39), and 80 per cent for Niek at age 2;7 (MLU 1.44). Wijnen notices that the frequency curve for the non-finite sentences in child Dutch has a characteristic S-shape of a logistic growth function (cf. Jordens, 1991). Some three to four months after the first multi-word utterances are produced there is a sharp drop in the percentage of RIs. Wijnen found that the decrease in frequency of RIs correlates with the first appearance of a complex predicate (an auxiliary/modal + non-finite verb) with a sentence-initial subject.

(20) ikke kan niet zoeken (Niek 3;0;9)
I can not look for

Three or four months later, the percentage of RIs will have dropped to five and stay at that level. This percentage is reported for Niek at age 3;6, for Hein around age 3;1 (Haegeman, 1996).

As for the more qualitative properties of Dutch child RIs, it has been observed that non-eventive verbs are almost completely absent from Dutch children's RIs, like French.

Wijnen (1997) argues that the possibility that functional category Tense is represented but left un(der)specified in Dutch RIs does not seem compatible with the observed distributional difference

[17] It might be the case that language input is a crucial factor here. Klein (1974) reports that Dutch mothers display a preference for SOV word-order in child-addressed speech, often achieved by the use of (sometimes pleonastic) auxiliaries (cf. Wijnen and Verrips, 1998).

[18] Dutch verbal forms ending in *-en* can either be infinitives (i) or plural finite verbs (ii):
(i) lopen (infinitive) "to run"
(ii) wij lopen (finite verb) "we run"
In early child language, plural subjects are rare. Therefore, this apparent ambiguity raises no real problems. Kraemer reports that she looked at the context and, in case of doubt, left out the form on *-en*. There is another source of ambiguity in the Dutch data: forms on *-t* which could either be 3rd person singular finite verbs or past participles lacking the prefix *-ge* :children often omit this prefix. Here too the context can help to disambiguate.
(i) (iii) hij werkt (finite verb) "he works"
(ii) (ge)werkt (past participle) "worked"

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between eventive and non-eventive verbs. He suggests that initially Tense is absent in RIs. Several other characteristics of Dutch child language have been argued to support the assumption that (initially) Tense is not represented in RIs and that they are syntactically unanchored structures. RIs do not have object topicalization in V2-languages like Dutch and German (Poeppel and Wexler, 1993; Wijnen, 1995); root infinitival wh-questions are non-existent; neither subject nor object weak pronouns are found in RIs (Haegeman, 1996). However, elsewhere Wijnen (1995) argues that the steep-sloped part of the curve, in the percentages of RIs, reflects a developmental transition. He claims that whereas early root infinitivals can be assumed to be bare VPs, they reflect an underlying structure that includes a null modal in the later period. He makes the claim that one construction type has different representations in the child's grammatical system at different points in time.

We will not address the specific syntactic analysis of Dutch child RIs.

German

Root infinitives appear frequently in child German (Lasser, 1997, 1998; Weissenborn, 1990; Koehler, 1999). No data are available to indicate whether they appear before or after finite verbs. Some examples for RIs are given in (21) and (22) below:

(21) mein Kakao hinstellen (Simone 2;0;2)
my cacao put down
(22) Thorsten nicht auspusten (Andreas 2;1)
Thorsten not blow out

The above-mentioned authors studied different children. The percentages mentioned for the rate and range of RIs differ slightly, particularly with respect to the highest rate. All authors insist that root constructions with infinitives are legitimate in pragmatically restricted contexts in adult German. Lasser (1997) gives the following quantitative data for Simone: at age 2;1 (MLU 1.75)[19] 32 per cent RIs, 2 per cent root participials, at age 2;7 (MLU 2.25) 10 per cent RIs, 2 per cent root participials, at age 2;9 (MLU 3.52) 3 per cent RIs, no participials.

She also considers Andreas's data at age 2;1 (MLU 2.5): 25 per cent of RIs, 3 per cent of root participials. The highest percentage of RIs mentioned in the literature is 73 per cent (Simone, age 1;11, in Weissenborn). As for the more qualitative properties of RIs in child German, there are relatively few RIs with an overt subject in German (Behrens, 1993): about 11–15 per cent from age 2;0–3;0. Furthermore, RIs appear in positions in accordance with the target grammar, i.e. clause-finally in German (Lasser, 1997). The vast majority of RIs are bare infinitives (Lasser, 1997).

In the next section, we will consider data from the two bilingual children studied here, Carlotta (Italian/German) and Anouk (French/Dutch). Our main focus will be on a quantitative comparison between the bilingual and the monolingual data.

Root infinitives in two bilingual children

Carlotta: Italian

As in monolingual Italian children, Carlotta's root infinitives in Italian are not very frequent. Fewer than half of her RIs are bare infinitives, more than half (58 per cent) are past participles without an auxiliary. Some examples are given in (23)–(27):

(23) rimasto blu io (Carlotta 2;4;7)
remained blue I
(24) caduto leone (Carlotta 2;4;21)
fallen lion
(25) vedere (Carlotta 2;3;17)
see
(26) qua attaccare (Carlotta 2;4;21)
there fix
(27) tutto a posto fare (Carlotta 2;10;30)
all in-order make (=to tidy up (the room))

Table 1 in the appendix gives the absolute number and the percentage of RIs in Carlotta's Italian. When we compare Carlotta's figures with those of monolinguals, we observe that the highest rate of RIs in Carlotta is 25 per cent. This percentage corresponds to one out of four verbal forms. This is comparable to the 21 per cent mentioned by Guasti for one of the monolingual Italian children. Generally, Carlotta produces few RIs, paralleling the monolingual children. The age at which the RIs disappear is hard to establish with the 5 per cent criterion, since the numbers are small. Again, this is similar to monolingual children. Therefore, it is reasonable to say that quantitatively Carlotta is within the range of monolingual children.

As for more qualitative properties of Carlotta's RIs in Italian, we see that RIs appear later than finite verbs, just as in monolinguals. Moreover, 53 per cent of the RIs appear with a lexical subject; all but one are past participles. We do not yet have information as to other properties of her RIs: they appear to be no different from the ones found in monolinguals, but more research is necessary. We now turn to Carlotta's second language, German.

[19] MLU counted in words.

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Carlotta: German

A large variety of RIs is found in Carlotta's German, 85 per cent are bare infinitives, 15 per cent are past participles:

(28) baby schlafen (Carlotta 2;2;19)
baby sleep
(29) hinsetzen (Carlotta 2;3;2)
down-sit
(30) eine tisch machen (Carlotta 2;3;2)
a table make
(31) eine [g]runter[k]efalln (Carlotta 2;3;2)
one down-fallen (=runtergefallen)
(32) ganz nass emacht (Carlotta 2;3;2)
all wet made
(33) oma gucken mit mir das (Carlotta 2;3;17)
grand-ma watch with me it
(34) weggemacht (Carlotta 2;3;17)
away-made
(35) ich malen (Carlotta 2;4;7)
I paint

Table 2 in the appendix gives the absolute numbers and the percentages of the RIs in Carlotta's German. When we compare the rate and the range of these infinitives with those of monolingual German children, we see that the percentages of RIs in Carlotta are similar to the ones mentioned in Lasser for Simone. The highest percentages in Carlotta are found at age 2;3, there is a drop after age 2;4;7 and, after age 2;7;13 the percentage of RIs has dropped to below 5 per cent. Lasser reports that for Simone the percentage of RIs is 3 per cent at age 2;9.

Carlotta's highest percentage of RIs is 52.6 per cent (at age 2;3;17), which is higher than the highest rate found by Lasser, but lower than the highest percentage mentioned by Weissenborn for child S (73 per cent at age 1;11). We conclude that Carlotta's RIs are largely within the range of RIs mentioned in the literature on monolinguals.

As for other properties, we found that the number of non-null subjects in RIs is similar to that found in monolingual children (20 per cent). These lexical subjects are found only with bare infinitives (see (28) and (33)), not with participles. We observed that the negative particle *nicht* "not" (1) always follows finite verbs indicating that this verb has moved to a functional position in the left periphery of the clause, and (2) precedes non-finite verbs indicating that they have stayed within the VP. In other words, the RIs appear in clause-final position in accordance with the target grammar.

Summarizing, we tentatively conclude that there is no reason to assume that there is cross-linguistic influence in Carlotta's RIs in Italian and German. First, the two languages clearly develop separately, given the quantitative differences in RIs in both languages: compare Tables 1 and 2. Second, the rate of Carlotta's RIs is within the limits for monolinguals, in both Italian and German. Third, the range/development of Carlotta's RIs is comparable to that of monolinguals in both Italian and German. Finally, although a more elaborate study of the qualitative properties of RIs has still to be made, the data we considered do not lead us to expect that there will be a substantial difference in comparison to monolingual children in this perspective.

We now look at Anouk, the French–Dutch bilingual girl.

Anouk: French

Anouk produces RIs from age 2;4;17 until the last recording at age 3;10;7. In the first two recordings (ages 2;3;13 and 2;4;9) only finite verbs were produced. Some examples are given in (36)–(42).

(36) couper[20] ça (Anouk 2;4;17)
cut that
(37) Papa chercher Anouk (Anouk 2;6;11)
papa look for Anouk
(38) pas dessiner (Anouk 2;7;5)
not draw
(39) aller où Papa? (Anouk 2;7;28)
go where daddy
(40) opa, oma bientôt partir (Anouk 2;7;28)
grandpa, granny soon leave
(41) maintenant faire autre chose (Anouk 2;11;27)
now do something else
(42) moi aller à la crèche? (Anouk 3;3;17)
me go to the kindergarten

Table 3 in the appendix summarizes the frequency and the percentage of RIs in French in relation to the total number of verbs in Anouk's data. In order to find out if Anouks RIs are different from those of monolinguals, we compared the percentages of RIs found in Anouk with those in monolinguals. First, we observed that Anouk is later/slower in her development than the monolingual children discussed in the literature. Anouk's first RIs appear at age 2;4;17 (MLU 2), whereas in the data of monolingual children RIs are found from age 1;8;1 (MLU 1.5) (in Daniel). We have seen above that for the younger monolingual children (MLU<3) studied by Pierce and Ferdinand mean percentages between 20–30 per cent of RIs were found. We also saw that around age

[20] As mentioned above infinitives and past participles of the French verb class with *-er* are homophonous. Here these forms are all written as *-er*.

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2;3 these percentages had dropped to around 8 per cent. When we look at the percentages of Anouk's RIs when her MLU < 3;1 (age 2;10;11) , we see the highest percentage is 50 per cent, found at age 2;4;18 (MLU 2.13). However, this is one out of only two verbal forms. If we disregard this percentage, we find that the mean percentage of RIs in this period is 22 per cent. This percentage is comparable to what has been reported for monolingual French children by Pierce and Ferdinand. However, these children were younger than Anouk.

As for the age at which RIs disappear, we see that Anouk continues to use RIs until an advanced age. It is only at age 3;6 (MLU 4.19) that the percentage of RIs drops below 5 per cent. The difference from monolingual children is considerable; the latest age reported in the literature on monolingual children is 2;6 (MLU >3) (in Ferdinand for Philippe, see above). Jakubowicz and Rigaut found only 1.3 per cent of RIs in monolingual children with MLU=4.

Summarizing, the frequency of Anouk's RIs is not higher than that found in monolingual children: she does not produce more RIs. However, she produces RIs for longer than her monolingual peers. If we take into account that she starts later, it still takes her over a year to "get rid of" RIs, from the first ones at age 2;4;17 to the 2.19 per cent at age 3;6;25. Monolingual children take only four (Nathalie) or five months (Philippe)[21] to reach a percentage 6 per cent (Nathalie) or 5 per cent (Philippe) of RIs.

Let us now consider in more detail the syntactic properties of the RIs in Anouk's French. First, we observe that infinitives appear later than finite verbs. Since there are only a few verbs in the first two files, this may not be a valid picture. What is important is that infinitives do not appear before finite verbs, as they do, for example, in monolingual Dutch children. Second, just as in the monolingual French children Ferdinand studied, we observe that there were no infinitivals consisting of non-eventive verbs, auxiliaries, or copulas. Third, in contrast to Nathalie's data, but comparable to that of other French monolingual children, Anouk's infinitives optionally have a lexical subject from the beginning. Initially, we find only proper names as subjects. Between 2;11;27 and 3;3;21, strong pronouns also appear as subjects. Between 3;4;28 and 3;7;9 a few subject clitics occur in combination with RIs (cf. Ferdinand, 1996; Meisel, 1990):

(43) tu couper un grand bout (Anouk 3;4;28)
you cut a big piece

(44) je pas avoir le jouet (Anouk 3;6;25)
I not have the toy

We not only find subjects in sentence-initial position of infinitives, but other elements as well (see also Hulk and van der Linden, 1996; Hulk, 2000). From age 2;5;20 onwards there are fronted objects and from age 2.7.5 onwards, negated infinitives, fronted adverbs, and object clitics:

(45) pas tomber (Anouk 2;7;5)
not fall

(46) e(n)core écouter (Anouk 2;8;22)
again listen

(47) m'aider maman (Anouk 2;7;5)
me help mummy

(48) livre lire (Anouk 2;5;20)
book read

Negative infinitives are also found in monolingual children, whereas infinitives with a fronted object or adverbial are reported by Ferdinand as rare in monolinguals.[22] As in the monolingual data, negative *pas* precedes non-finite verbs and follows finite verbs. Summarizing, we can say that this is support for the hypothesis that the structure of Anouk's RIs, like the RIs of the monolingual French children, involves more than VP, but not a fully specified Tense projection (given the eventivity constraint). The presence of subject clitics with RIs could indicate the presence of an empty auxiliary (see Ferdinand for monolingual RIs).

The most interesting similarity between the development of RIs in Anouk's French and in monolingual French children is the apparent relation between the acquisition of subject clitics and the disappearance of RIs, as shown in the following figure 1. Elsewhere (see Hulk, 1997, forthcoming, for details) Anouk's subject clitics have been shown to come in relatively late and slowly compared to subject clitics in monolinguals. Whereas 82.1 per cent of the monolingual child Philippe's subjects are subject clitics, at age 2;6 (MLU >3), for Anouk this percentage is only reached at the end of the recordings, when she is 3;10;7 years old (MLU 5.5)! Thus, on the one hand, Anouk is different from monolingual children in that her subject clitics come in later and more slowly. On the other hand, however, her development is similar to that of monolingual children in that there seems to be a correlation between the increase of subject clitics and the decrease of RIs.

To summarize, this brief overview of some of the syntactic properties of French root infinitives in

[21] Based on the tables given in Ferdinand.

[22] See Hulk and van der Linden (1996); Hulk (2000) for a possible explanation of the OV-orders in terms of cross-linguistic influence from Dutch.

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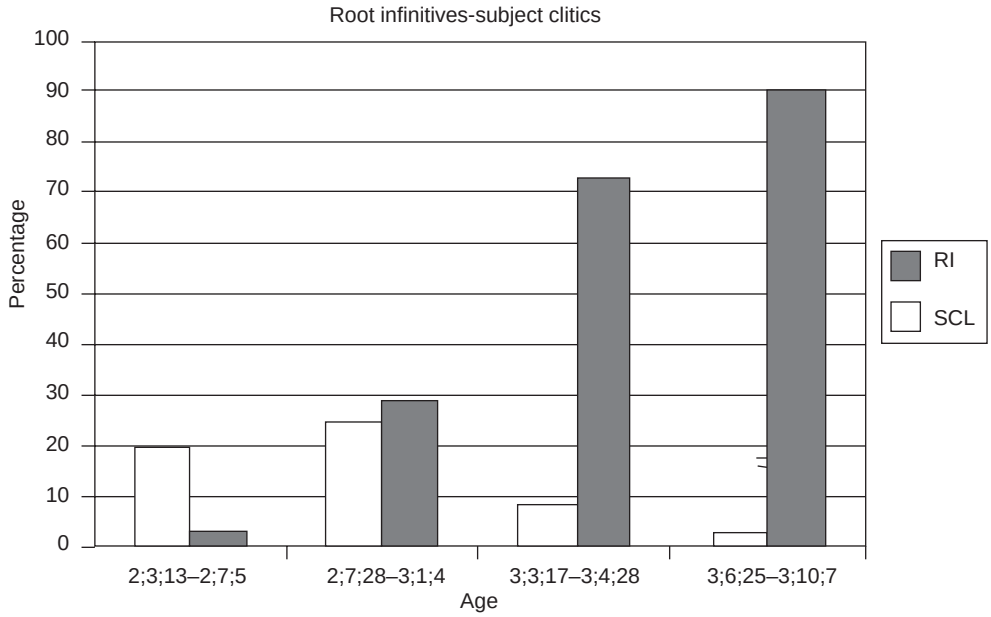


Figure 1. The development of subject clitics (SCL) and root infinitives (RI) in Anouk's French

Anouk does not give us reason to assume that there are important qualitative differences between her RIs and those of monolingual children. The quantitative difference between monolingual French children and Anouk (longer disappearance of RIs) seems not to be related to qualitative aspects in the domain of RIs, but to the developmental aspects of subject clitics. Let us now look at the RIs in Anouk's other language, Dutch.

Anouk: Dutch

We have less data for Dutch, since fewer recordings were made. Some examples of RIs are given in (49)–(52).

(49) pop ete (Anouk 2;4;9)
puppet eat
(50) buite pele (Anouk 2;5;20)
outside play
(51) geen andere pop vinden (Anouk 3;1;4)
no other puppet find
(52) luisteren wat ik gezongen heb (Anouk 3;7;9)
listen what I sung have

Table 4 in the appendix summarizes the frequency and the percentage of Dutch RIs. Let us compare these figures with what we have seen for the monolinguals. First, we observe that the highest percentage of RIs is 100 per cent, in the first two files. Even if we disregard these files because of the low number of verbs appearing in them, the next file shows 85.7 per cent with RIs. This is similar to what we observed for Dutch monolinguals – RIs come in earlier and initially are more frequent than finite verbs, contrary to what we saw for the Romance languages. The age at which there are less than 5 per cent RIs is also comparable to that of monolinguals: age 3;6 (MLU 3.3). Moreover, the development of RIs also seems to have the S-curve shape found in monolinguals: there are two sharp drops, one between age 2;7;28 and 2;9 and another one between age 3;1;4 and 3;6;25.

The vast majority (97 per cent) of Anouk's RIs in Dutch are bare infinitivals, not past participles. Lexical subjects are rare (6 per cent). No stative verbs are found in her RIs. The negative particle *niet* "not" always precedes the infinitive, which appears in clause-final position. Most of Anouk's RIs in Dutch have a modal interpretation. From age 2;11;13 onwards complex predicates (auxiliary/modal + infinitive) appear:

(53) gaan we poesje lezen
go we cat read
(54) ga ik opstaan
go I get up

We saw above that, according to Wijnen, the appearance of such complex predicates indicates the onset of a developmental change in the structure of the RIs which corresponds with the first sharp drop of RIs.

To summarize, let us see how this answers the crucial question: Quantitatively speaking, is there reason to assume cross-linguistic influence on RIs between Dutch and French? The first point to take into account is the following. The two languages

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clearly develop separately: the quantitative analysis reveals that the frequency of occurrences of RIs is different in the two languages, as shown in Tables 3 and 4 in the appendix. Second, the rate of Anouk's RIs is within the limits of monolinguals, for French and Dutch. Third, the range/development of Anouk's RIs is comparable to that of monolinguals for Dutch, but not for French where we saw that RIs take much longer to disappear (12 months) than for monolinguals (5 months). However, as for monolinguals, there seems to be a correlation between the decrease of RIs and the increase of subject clitics: Anouk acquires subject clitics later and more slowly than monolingual children. We will not address the question here of what could be the reason for such a delay (see Hulk, 1997; forthcoming, for a suggestion).

Conclusions

We have argued that cross-linguistic influence can occur if an interface between two modules of grammar is involved and the languages overlap at the surface level. We have shown that both conditions hold for object drop, but not for RIs. RIs satisfy the first condition: they involve the interface between syntax and pragmatics. RIs represent syntactically unanchored structures which are interpreted in discourse. Children allow them in a wider array of contexts than adults. In particular, children produce RIs in declarative root clauses where adults would use finite sentences. However, RIs do not satisfy the second condition. It is not the case that the input of one of the adult languages reinforces a misanalysis of RIs (in declarative root clauses) as correct in the other language. Therefore, we expected cross-linguistic influence to occur only in the domain of object drop. Comparing the development of object drop and RIs in a bilingual Dutch–French and a German–Italian child to the development of both grammatical phenomena in the respective monolingual children, we have shown that this prediction is indeed borne out by our data: object drop was susceptible to cross-linguistic influence, whereas RIs were not. This confirms the assumption that cross-linguistic influence is due to language internal reasons and not to language external factors such as language dominance. The periods during which we observe influence in the domain of object drop and non-influence in the domain of RIs are identical.

Our study of RIs in Anouk and Carlotta confirms that, in both children, the Germanic and the Romance language develop separately. The development of the Germanic RIs in the bilingual children is similar to the patterns found in the literature for monolingual Dutch and German children. The bilingual RIs are within the rate and range of the monolingual RIs and their development presents the same S-shaped curve. As for the qualitative properties, we showed that there is no reason to assume that these differ from the monolinguals. With respect to the Romance RIs, we showed the Italian RIs in Carlotta were similar to the ones found in the literature for monolingual children: with low frequency and early disappearance. As for the French RIs produced by the bilingual child Anouk, we saw that they share qualitative properties with the monolingual RIs studied in the literature. The percentage of RIs is not higher than the percentages mentioned for monlinguals. However, Anouk's RIs take longer to disappear than has been reported for monolingual RIs. In the literature, a relationship has been established between the decrease of RIs and the increase of subject clitics (as markers of the syntactic anchoring of tense) for French monolingual children. We found the same relation for Anouk: where her RIs take a long time to disappear, her subject clitics take a long time to increase.

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Appendix

Table 1. *Italian: Total number of verbs – total number of infinitives*

Age	MLU	verbs	non-finite (PP and Inf)	%	% (Inf only)
1;8;18	—	2	0	0	0
1;9;17	—	1	0	0	0
1;10;8	—	2	0	0	0
1;10;30	1.13	4	0	0	0
1;11;12	1.43	4	1	25	0
1;11;27	1.36	3	0	0	0
2;0;11	1.74	25	1	4	0
2;2;4	2.17	74	2	2.8	0
2;2;19	2.24	43	2	4.7	4.7
2;3;2	2.63	62	2	3.2	1.6
2;3;17	2.53	64	1	1.6	1.6
2;4;7	2.56	83	5	6	0
2;4;21	2.62	62	4	6.5	4.8
2;6;9	2.6	49	0	0	0
2;6;23	2.84	136	4	2.9	0
2;7;13	2.43	40	1	2.5	2.5
2;8;0	2.3	41	3	7.3	2.4
2;8;21	2.54	89	2	2.2	0
2;9;11	2.43	62	3	4.8	3.2
2;9;25	3.26	117	0	0	0
2;10;16	3.92	97	0	0	0
2;10;30	3.73	91	1	1.1	1.1
2;11;13	4.04	94	1	1.1	1.1
2;11;27	4.38	110	0	0	0
3;0;25	4.39	182	1	0.5	0.5
3;1;16	3.55	170	2	1.2	1.2
totals		1770	36	2.1	**1.04**

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Table 2. *German: Total number of verbs – total number of infinitives*

Age	MLU	verbs	non-finite (PP and Inf)	%	% (Inf only)
1;8;18	—	0	0	0	0
1;9;17	—	9	1	11	11
1;10;8	—	13	1	7.7	7.7
1;10;30	1.34	7	2	28.6	28.6
1;11;12	1.43	7	1	14.3	14.3
1;11;27	1.47	7	0	0	0
2;0;11	1.53	5	1	20	20
2;2;4	1.75	14	1	7.1	7.1
2;2;19	1.68	10	4	40	30
2;3;2	2.38	52	17	33.7	21.2
2;3;17	2.04	19	10	52.6	42.1
2;4;7	2.27	74	19	25.7	14.9
2;4;21	2.51	74	7	9.5	9.5
2;6;9	2.7	61	9	14.8	11.5
2;6;23	2.81	51	2	3.9	3.9
2;7;13	2.44	76	10	13.2	13.2
2;8;0	2.31	39	0	0	0
2;8;21	2.73	114	4	3.5	2.6
2;9;11	2.63	65	2	3.1	3.1
2;9;25	3.11	126	1	0.8	0.8
2;10;16	3.58	167	3	1.8	1.8
2;10;30	2.52	44	2	4.5	4.5
2;11;13	3.91	121	4	3.3	0
2;11;27	3.81	114	2	1.8	1.8
3;0;25	3.58	96	2	2.1	2.1
3;1;16	3.49	138	3	2.2	2.2
totals		1503	107	**11.8**	**9.8**

Table 3. *French: Total number of verbs – total number of infinitives*

Age	MLU	verbs	Infinitives	%
2;3;13	1.21	10	0	0
2;4;9	1.5	2	0	0
2;4;17	2	16	6	37,5
2;4;18	2.13	2	1	50,0
2;4;23	2.97	13	2	15,4
2;5;20–2;5;23	2.5	36	5	13,9
2;6;11	2.5	30	5	16,7
2;7;5	1.21	37	10	27,0
2;7;28	2.21	100	5	5,0
2;8;22	2.35	64	28	43.8
2;9;17	3	6	1	16.7
2;0;11	3.1	0	0	0
2;11;13	3.65	85	31	36.5
2;11;27	3.47	119	13	10.9
3;1;4	3.31	130	40	30.8
3;3;17	4.69	227	24	10.6
3;3;21	4.05	148	10	6.76
3;3;23	6.19	116	8	6.90
3;3;25	3.72	86	9	10.5
3;3;27	4.32	91	8	8.80
3;3;28	3.54	21	2	9.52
3;4;28	5.16	368	30	8.15
3;6;25	4.19	274	6	2.19
3;7;9	4.13	111	3	2.70
3;7;29	5.63	218	2	0.917
3;8;18	4.44	119	5	4.20
3;9;1	5.63	232	9	3.88
3;10;7	5.53	145	4	2.76
Totals:		**2856**	**267**	**9,35**

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Table 4. *Dutch: Total number of verbs – total number of infinitives*

Age	MLU	verbs	infinitives	%
2;3;13	—	2	2	100
2;4;9	2.3	3	3	100
2;4;17	—	0	0	0
2;4;18	—	1	1	100
2;4;23	—	1	1	100
2 ;5;20–2;5;23	1.56	14	12	85.7
2;6;11	2.57	4	0	0
2;7;5	—	0	0	0
2;7;28	—	2	1	50.0
2;8;22	—	0	0	0
2;9;17	2.6	17	3	17.6
2;10;11		113	22	19.5
2;11;13	3.1	62	9	14.5
2;11;27	2.18	29	5	17.2
3;1;4	4.49	51	15	29.4
3;3;17	—	0	0	0
3;3;21	—	0	0	0
3;3;23	—	0	0	0
3;3;25	—	0	0	0
3;3;27	—	0	0	0
3;3;28	—	0	0	0
3;4;28	—	5	0	0
3;6;25	3.31	26	1	3.85
3;7;9	6.04	136	8	5.88
3;7;29	4.12	108	8	7.41
3;8;18	—	0	0	0
3;9;1	—	1	0	0
3;10;7	4.52	127	0	0
Totals:		**602**	**91**	**15.1**

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