# Transfer in bilingual first language acquisition*

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*Much research on bilingual first language acquisition has stressed the role of the dominant or preferred language when the two languages have some influence on one another. The present paper tries to look at transfer or interference from the perspective of the input the child is exposed to. Transfer will be argued to occur in those domains of the grammar where the language learner is confronted with ambiguous input. The bilingual child may, as a relief strategy, use parts of the analysis of one language in order to cope with ambiguous properties of the other. Ambiguity of input is crucial and will be evaluated through a comparison with monolingual language acquisition: if monolingual children have problems with the language material in question, it may be suggested that the input contains evidence for more than only one grammatical analysis. A quantitative difference between monolingual and bilingual language acquisition will be interpreted as evidence in favor of cross-linguistic influence in bilingual language development. The paper reviews longitudinal studies on the acquisition of word order in German subordinate clauses.*

If we open a German grammar book, we are told that subordinate clauses are verb-final: the finite verb has to be placed clause-finally. In main clauses, however, the finite verb is placed in the position following the first constituent. Thus, German evidences a clear root/non-root asymmetry. If we are exposed to spoken German, however, the variation of word orders is surprising. The non-verb-final orders presented in the following paragraphs are very frequent in the spoken language (see Penner & Bader 1991, 1995). There are subordinate clauses where both orders, the verb-final and the non-verb-final order, are allowed, as in (1):

(1) Verb-final and non-verb-final orders with German *weil*
a. *Ich mag Nebensätze, weil sie so kompliziert sind*
I like subordinate clauses because they that complicated are
"I like subordinate clauses because they are so complicated."
b. *Ich mag Nebensätze, weil sie sind so kompliziert*

Furthermore, there are conjunctions which are always used with non-verb-final word order, such as *denn* "since" and *sondern* "but". In addition to word order, the language learner has to be very sensitive to pauses made within the utterance stream and to intonation, since they also may indicate whether a subordinate clause is involved or not, as in (2):

(2) German *die* and *wie* as relative pronouns (a) or demonstrative pronouns (b), and as question words introducing an indirect (c) and a direct (d) question
a. *Das sind Kräuter, die in meinem Garten wachsen*
These are herbs which in my garden grow
"These are herbs which grow in my garden."
b. *Das sind Kräuter, [small pause] die wachsen in meinem Garten*
These are herbs, they grow in my garden
"These are herbs and they grow in my garden."
c. *Sag mal, wie du die deutschen Nebensätze analysierst*!
Tell [particle] how you the German subordinate clauses analyze
"Tell me how you analyze German subordinate clauses!"
d. *Sag mal, wie analysierst du die Nebensätze*?
Tell [particle] how analyze you the subordinate clauses
"Tell me, how do you analyze subordinate clauses?"

In other cases, constructions with main clause word order can be subordinated, as in (3):

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(3) Main clause word order in German subordinate clauses

a. *Ich weiß, die Nebensätze sind sehr kompliziert*
I know the subordinate clauses are very complicated

Finally, there are root clauses (exclamations and echo-questions) which show the verb-final pattern, as in (4):[1]

(4) Root clauses with the finite verb in clause-final position

a. *Daß du deutsche Nebensätze analysieren kannst*!
That you German subordinate clauses analyze can
"[I am surprised] That you can analyze German subordinate clauses."

b. *Wie ich die deutschen Nebensätze analysiere*?
How I the German subordinate clauses analyze
"How I analyze German subordinate clauses?"

All the constructions mentioned represent positive evidence for the language learner. It should not be surprising if s/he makes errors in this domain; on the contrary, it would be astonishing if s/he did not. We can predict, then, that German word order in subordinate clauses represents something of a puzzle to the language learner. In the case of such ambiguous input, the bilingual learner, being exposed to German and French/Italian/English (where no such problems arise) may be tempted to transfer features from the language presenting unambiguous input into the one which is ambiguous.

The organization of the rest of this paper is as follows: the second section aims at a definition of transfer in terms of a relief strategy, available to bilingual speakers. It is thus viewed positively, as a strategy to cope with problematic input. In the third section, the syntactic analysis of German and French/Italian/English subordinate clauses is presented. The fourth section contains the analysis of the development of subordinate clauses in bilingual children who acquire German and one of the other languages mentioned. German is chosen as the target of transfer since this domain of the gramma – subordinate clauses – represents a problem space in German, not in the other languages involved. It will be argued that ambiguity of the German input is the source for transfer in this domain of the grammar. Interestingly, the grammars which result from transfer of grammatical features are compatible with natural languages to which the child has not been exposed. These grammars are thus possible systems with regard to Universal Grammar. This is also predicted within the present analysis, since it is assumed that parameter values are transferred by the children. At the same time, it will be shown that the children develop separate grammatical systems in the languages involved, although these systems in part result from transfer. Finally, there is a summary of the main findings.

[1] One reviewer suggests that the sentences are subordinate clauses, and the main clause, *I am surprised* ... for example, has been omitted. This is a possible interpretation. However, one has to take the child's perspective here who hears such sentences where the finite verb is placed clause-finally and where the main clause is missing. Thus, it is not implausible to use constructions such as (4a) and (4b) as instances of confusing input.

## Transfer as a relief strategy

The big question in bilingual first language acquisition (simultaneous acquisition of two languages from birth) has been whether bilingual children develop their languages separately from one another or not. The existence of mixed utterances of the type *macchina kaputt* and *Auto rotto* (car broken), and the usage of incorrect word orders such as *wenn hast du alles das hier gelesen, kriegst du das hier* (when have you all this read, get you this here), for example, has led researchers to hypothesize that the bilingual child starts out with an undifferentiated, hybrid system which incorporates elements from both of the languages the child is exposed to (Arnberg, 1987; Grosjean, 1982; Saunders, 1982; Taeschner, 1983; Volterra & Taeschner, 1978). Another issue has been the importance of the type of exposure to the two languages involved. It has been argued that in order for the child to develop two languages separately, s/he should be exposed to their languages in a separate fashion, that is, each person should address the child in mainly one language (Arnberg, 1987; De Houwer, 1990; Kielhöfer & Jonekeit, 1983; Meisel, 1989; Ronjat, 1913).

However, language mixing, that is, utterances or discourse containing elements of both of the languages the child is exposed to, may also be interpreted as *code-switching*, the bilingual speaker's ability to switch languages within a single utterance or within discourse. Code-switching has been shown to be constrained by sociolinguistic and grammatical constraints (see among others Grosjean, 1982; Muysken, 1995; Poplack, 1980; for an overview of the literature see Köppe, 1997; Veh, 1990). Of course, the child's usage of code-switching may not fully correspond to the sociolinguistic and grammatical

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rules of the adults (Meisel, 1989). However, code-switching presupposes the existence of two separate linguistic systems, as has been pointed out by Meisel (1989) and Köppe (1996).[2] Doubts about the *fusion* of the two systems which constitute the bilingual child's input are also in order with respect to word order, which will be the focus of this contribution. The analyses by Genesee (1989), Genesee, Nicoladis & Paradis (1995), De Houwer (1990), Köppe (1997), Meisel (1986), and Müller (1993) show in fact that bilingual children are able to distinguish two linguistic systems from very early on and that they do not necessarily pass through a stage of fusion in their linguistic development. Evidence for the claim that bilingual children are able to differentiate their two linguistic systems comes from the comparison of the two systems of which the child is showing evidence during language development. Furthermore, the degree to which the language development of bilingual children resembles that of monolingual children is an important issue.

Although it has been convincingly argued that the development of a bilingual child proceeds along two language-specific paths, the two languages are in contact and may have some influence on each other. The terms "transfer" and "interference", which are used to describe this specific contact situation, are well known from the literature on second language acquisition (for an overview see Bausch & Kasper 1979).[3] Weinreich (1968) uses the term "interference" to describe any difference between the speech of a monolingual and a bilingual speaker. He further restricts the usage of the term to cases where the speaker rearranges the patterns of speech. This excludes simple borrowing of a word from one language into the other. Mackey (1968) stresses the distinction between borrowing and interference and defines interference as being contingent and individual, whereas borrowing is systematic and collective (see Romaine, 1995). Weinreich (1968) also makes this distinction, but uses the cover term "interference" for both phenomena.

In the following, I will investigate transfer as an individual process. The contingency of transfer, however, will be questioned, both on a theoretical and an empirical level. If we want to integrate the concept of transfer into a theory of language acquisition, we would want it to be an explanatory, predictable concept, not only an observationally adequate notion (Hornstein & Lightfoot, 1981). It will turn out to be the case that this aim is attainable. Transferability will be argued to be a function of ambiguous properties of the recipient language: the child encounters language material which does not allow an unambiguous interpretation, or, put differently, two different grammatical hypotheses are compatible with the same surface string or a particular type of construction – here subordinate clauses.[4] In this case, the bilingual child, as a relief strategy, tries to solve the ambiguity by using features of the source language. The assumption about the ambiguity of the input will be evaluated against monolingual language acquisition: if monolingual children have difficulty with the language phenomenon in question and choose "wrong paths" during their linguistic development (which may or may not correspond to those chosen by bilingual children), it may be suggested that the input contains evidence for more than only one grammatical analysis. A further observation supporting the assumption about the ambiguity of the input is that transfer is unidirectional: if transfer occurs in subordinate clauses produced by bilingual children who acquire German and another language such as Italian, English or French, German always is the target of transfer. The present study intends to show that it is plausible to assume that transfer is at work in the bilingual child since bilinguals tend to proceed more frequently along "wrong paths" than monolinguals do and they take much more time to "correct the error." This quantitative difference between bilingual and monolingual language acquisi-

[2] One reviewer points out that this view is debatable, see e.g. Clyne (1987) and Muysken (1995). As far as the bilingual children from the DUFDE project which are studied here are concerned (Ivar, Caroline, Pascal, Pierre), convincing arguments have been advanced by Meisel (1989) and Köppe (1996) in favor of the separation of the two languages, German and French. These arguments come from the acquisition of phenomena such as subject-verb agreement, the structuring of early two word utterances and case for example. They are therefore independent of the children's ability to make productive use of code-switching. For a theoretical discussion of this issue see Köppe (1997).

[3] The *contrastive hypothesis* in particular relied heavily on the concept of transfer or interference in order to explain how a second language learner comes to know a second language. According to this view, the L2 learner transfers his L1 knowledge into his developing L2 system. Where the L2 differs from the L1, transfer has a negative effect ("difference" = "difficulty"); where the L2 is similar to the L1, transfer has a positive effect and thus facilitates the learning task. The other extreme has been called the *L1=L2 hypothesis*; the acquisition of a particular language as a second language or a first language proceeds in a parallel fashion. In between these extremes, the *interlanguage hypothesis* has been formulated, stating that the L2 learner develops an interlanguage, characteristic of the L1, the L2, and with independent features. Language transfer represents only one determinant of the learner's interlanguage. Within the interlanguage hypothesis, the conditions which favor or block transfer are investigated.

[4] See Lightfoot (1991) for the existence of a transition period in language change where two different grammatical systems can produce the same surface strings.

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tion will be interpreted as evidence in favor of cross-linguistic influence in bilingual language acquisition.

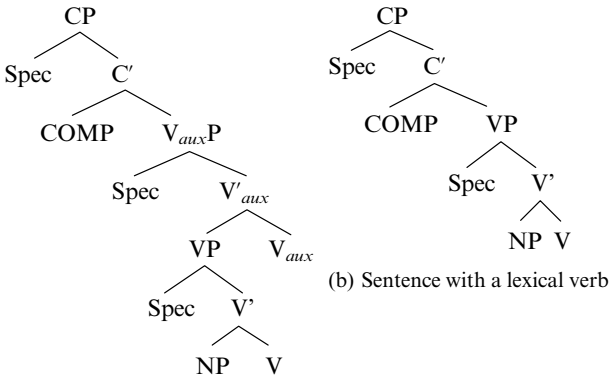
Relief strategies which allow the bilingual child to profit from her/his bilingualism have been assumed by Genesee (1989) and Meisel (1989). If the bilingual child happens to know particular lexical items in only one of the two languages, s/he may borrow the lexical items from the source language and use them in the recipient language. ''Like monolingual children, bilingual children make do with whatever linguistic resources they have available to express themselves ... the only difference being that, unlike monolingual children who are limited to the resources of one language, bilingual children can draw on two'' (Genesee et al. 1995, p. 629). Gawlitzek-Maiwald and Tracy (1996) argue for syntactic borrowing as a temporary relief strategy. They analyze a child who develops specific constructions, the lexical instantiation of the category INFL as modal and temporal auxiliaries and infinitival constructions, at a different pace. The language for which these specific constructions develop at a slower rate may profit from the faster language. The question why one of the languages develops at a slower rate for the specific constructions remains open in Gawlitzek-Maiwald and Tracy's (1996) analysis. The authors point out that it could be the complexity of a particular construction or lack of perceptual saliency which prevent early usage. The most interesting result of their analysis, however, is that the German/English bilingual child they investigate explores both languages when acquiring a particular construction type: the German IP system, including the V2 property, is much more advanced in the child's grammatical system of German as compared with that of English. The child thus produces mixed utterances with an English VP and a left periphery borrowed from German. One example of syntactic borrowing is *Kannst Du move a bit* (Can you move a bit), where a German left periphery is combined with an English VP structure.[5] In infinitival constructions, the child profits from her knowledge of the English construction. The authors mentioned thus far all consider mixed utterances, that is, utterances where elements of language A and B are contained.[6] Hulk and Van der Linden (1996) analyze utterances which are made up of elements of only one language and report on a French/Dutch bilingual child who produces OV sequences of the type *livre lire* (book to read) in the child's French. Monolingual French children use OV sequences as well, although marginally. The authors hypothesize that OV sequences are the result of a Focus movement rule which moves topicalized XPs in front of the clause. ''This constitutes the basis of our argument that the presence of OV patterns in the Dutch input of this bilingual child may very well be the factor that 'pushes up' the production of [XP V] patterns in the child's French. In other words, there is a form of interaction between the two languages: it is not mixing of the structure of one language into the other however, but rather 'activation' of a possible, but rare, pattern in one language by the input of a superficially similar, frequent pattern in the other'' (Hulk & Van der Linden 1996, p. 100). In the following, I shall also deal with utterances which are made up of elements of one language.

Transfer or interference has been described at the various linguistic levels (see Clyne (1975) for an overview). The present paper will consider grammatical transfer or interference, that is, language contact at the syntactic level which refers to particular syntactic features, not to elements of language A being present in language B. Kielhöfer and Jonekeit (1983), to name just one study of bilingual language development where grammatical transfer plays an important role, stress that grammatical interference is unidirectional and that the dominant / preferred language (in the case of their children German) influences the weaker language (French) (see also Döpke (1992), for example). Even with a very loose definition of ''dominant language'', Kielhöfer and Jonekeit (1983) still have to admit that sometimes the reverse direction is observed, namely that the ''weaker language'' influences the ''stronger language''. This is the case for the position of French adjectives. The authors admit that the positioning of French adjectives is a complex matter (both positions, pre- and postnominal, are possible in adult French) and that even monolingual children have problems with this domain of the grammar. It may be much more plausible, therefore, to account for the unidirectionality of transfer in terms of the structural ambiguities of the languages involved, not in terms of language dominance, at least in the bilingual individual who is exposed to both languages from birth. It is the purpose of the following analysis to determine where the ambiguity lies and what exactly is transferred.

[5] In addition, they notice that utterances with only English lexical items and those with only German lexical items perfectly correspond to the respective adult-systems (e.g., VO and OV). The adult-like surface ordering of elements is violated only in lexically mixed utterances. The observation by Gawlitzek-Maiwald & Tracy (1996) nicely shows that mixed utterances are not due to fusion of two grammatical systems.

[6] This, of course, does not mean that studies of utterances containing only lexical elements of one language and syntactic elements of the other language do not exist, see e.g. Poplack (1980), Döpke (1992). For an overview of the literature see Köppe (1997).

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(a) Sentence with a temporal auxiliary verb

(b) Sentence with a lexical verb

Figure 1. Haider's (1993a) conception of the phrase structure configuration of a German sentence.

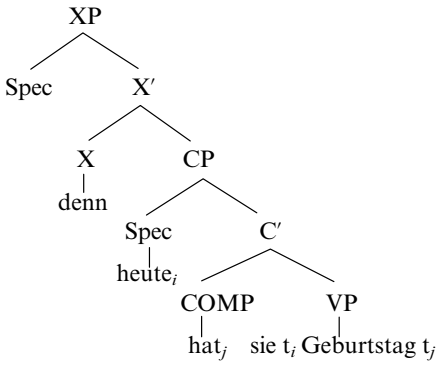



Figure 2. Surface structure of a German sentence introduced by *denn*.

## Subordinate clauses in German and in French/Italian/English

German is a verb second language where the finite verb surfaces in the position following the first constituent in main clauses, independently of the grammatical function of the first constituent. In subordinate clauses, the finite verb occurs clause-finally.

(5) Adult German

a. *Gestern ging er in das neue Kino*
Yesterday went he in the new cinema
"He went to the new cinema yesterday."

b. *Er ging gestern in das neue Kino*
He went yesterday in the new cinema

c. *Ich vermute, daß er gestern in das neue Kino gegangen ist*
I think that he yesterday in the new cinema gone is
"I think that he went to the new cinema yesterday.'

In addition, German is an OV language, i.e. non-finite verbs precede their complement(s). Following Haider (1993a), the phrase structure configuration of a German sentence is assumed to look like in Figure 1.

In main clauses, the finite verb raises to COMP and any constituent moves into the specifier position of CP. In subordinate clauses, the CP is already occupied by an element, a complementizer or a wh-word, and therefore the verb remains in its base position, giving rise to the clause-final surface position. German phrase structure thus contains only one functional category, namely the CP (see also Platzack (1983), who assumes that German has a CONFL node, a merger of COMP and INFL). Finite as well as non-finite verbs are inserted into the verb node as fully inflected forms from the lexicon: temporal auxiliary verbs (if there are any) into $V_{aux}$ and all other verbs into V.[7] The important generalizations are: (i) There is a head-final position for finite verbs in German phrase structure; (ii) Finite verbs raise into COMP in main clauses, the position where complementizers are base-generated. For main clause order in subordinate clauses as in the sentence ... *denn heute hat sie Geburtstag* "since today has she birthday" (cf. section 1), we need a further layer above the CP in the structure in Figure 1, to the head of which is attached the label X in Figure 2.

French, Italian and English are VO languages, i.e. the nonfinite verb precedes its complement(s). Furthermore, although all languages have residual V2 phenomena (e.g., triggered by the presence of a wh-word in the specifier position of CP), the verb does not regularly move into COMP in declarative main clauses.[8] Another difference with German is

[7] Following Chomsky (1993), German phrase structure would contain at least four functional heads, COMP, $AGR_S$ for subject-verb agreement, T for tense marking, and $AGR_O$ for Case-marking of the direct object. The choice between the two representations is an empirical and theoretical question which will be of no importance for the argument presented here. I think, however, that there are good reasons to prefer Haider's (1993a) analysis (for further discussion of this issue see Müller to appear,a).

[8] One reviewer mentions that at least French and Italian also present the learner with variable orders (free inversion of the subject in Italian and inversion in French) and thus, we may say that the child's input is ambiguous. This could be the case, of course. Indeed, we could predict that due to French inversion patterns of the type *Nous connaissons bien les articles qu'a écrits Chomsky* an Italian/French bilingual child may assume that French, like Italian, is a null-subject language. Ambiguity is thus not meant to cover a whole language. It is not my intention to classify German as an ambiguous and French as a non-ambiguous language. The particular construction, however, may contain features which do not unambiguously lead the child into only one – the correct – grammatical representation. The existence of inversion of the type given in the example above is not

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that there is no head-final position available which hosts finite verbs. In other words, all projections are head-initial, as in Figure 3. In contrast to German, Haider (1993a) assumes that French, Italian and English have at least one verbal functional category (INFL).

The important generalizations for the analysis of child language are: (i) there are only head-initial positions for finite verbs in French, Italian and English phrase structure; (ii) finite verbs do not regularly raise into COMP in main clauses.

The differences mentioned between German on the one hand and French, Italian and English on the other are described in terms of different parameter settings in the respective languages: in German, COMP is specified for finiteness (it contains the finiteness operator [+F]), whereas in French, Italian and English it is the category INFL which is marked for finiteness (the finiteness parameter). German phrase structure contains head-final projections, whereas French, Italian and English phrase structure only contains head-initial projections (the head-position parameter).

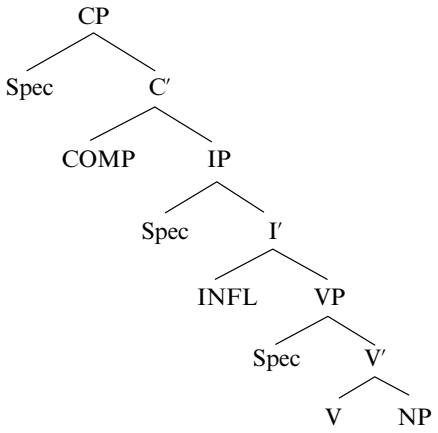



Figure 3. Haider's (1993a) conception of the phrase structure configuration of a French, Italian or English sentence.

## Subordinate clauses in bilingual first language acquisition

### *German as the target of transfer: some empirical observations*

It has been noted that some bilingual children pass through a stage where they use subordinate clauses which are not introduced by a complementizer (see Kielhöfer & Jonekeit, 1983; Müller, 1993, 1994 (German/French); Leopold, 1949a, 1949b (German/English); Taeschner, 1983 (German/Italian)). Müller and Penner (1996) suggest the term "preconjunctional subordinate clauses" for these early complementizerless subordinate clauses.

The use of complementizerless subordinate clauses is also a common observation with monolingual children (Fritzenschaft, Gawlitzek-Maiwald, Tracy & Winkler, 1990; Gawlitzek-Maiwald, Tracy & Fritzenschaft, 1992; Mills, 1985; Rothweiler, 1994; Stern & Stern, 1928; Tracy, 1991; Weissenborn, 1990 (German); Clark, 1985; Cohen, 1925; Cohen, 1968; Guillaume, 1927; Heinen & Kadow, 1990 (French); Radford, 1987 (English)). Müller and Penner (1996) provide an overview of the literature. In this respect, bilingual children seem to pattern with monolingual children.

As far as word order in French, Italian and English subordinate clauses is concerned, no specific problems are reported for children in the literature. This holds for monolingual (see e.g. Brown, 1973; Clark, 1985; Heinen & Kadow, 1990) as well as for bilingual children where the second language is German (see e.g. Kielhöfer & Jonekeit, 1983; Müller, 1993, 1994 (German/French); Leopold, 1949a, 1949b (German/English); Taeschner, 1983 (German/Italian)). At first glance this finding is surprising since there are root/non-root asymmetries in French, Italian and English as well. French subject inversion, for example, is possible in main clauses but generally blocked in subordinate clauses. This would be a potential source of error, for example, the use of subject inversion in subordinate clauses. Although French children use subject inversion, they appear to know that it is impossible in non-root clauses.

The acquisition of non-root word order in German monolingual children is reported to be an area of error-free acquisition. As soon as the first complementizers appear, the finite verb is used correctly in clause-final position (Rothweiler, 1994; Mills, 1985; Stern & Stern, 1928). Some children mark subordinate clauses by using verb-final patterns even before they produce complementizers, namely during the early stage of complementizerless subordinate clauses (see Müller & Penner, 1996). In most studies on the development of German word order in subordinate clauses, only temporary difficulties are mentioned. Park (1971) for example reports on *weil*+$V_{fin}$+$NP_{subj}$ orders: *weil hast du das gesagt* (because have you it said). Other researchers such as

relevant for determining the status/number of functional projections in a given language, which I will explore in the present paper, since it reveals properties of subjects in general and the subject position, but not properties of verb raising. In other words, constructions of the type given in the example above may not mislead the learner with respect to whether finite verbs raise into INFL or COMP in the target language. Notice also that inversion is extremely infrequent in spoken French.

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Mills (1985), Scupin and Scupin (1907, 1910), and Stern amd Stern (1928) observe difficulties in subordinate clauses which contain more than two verbal elements and in conditionals: *wenn ihr würdet immerfort in Berlin geblieben sein, so würdet ihr immerfort Berliner gewesen sein* (if you would have always in Berlin stayed, then would have you always Berliners been). The errors appear, however, quite late in language development, that is, at the age of four and five.

In contrast to monolingual children, bilingual children are reported to have great difficulty with word order in German subordinate clauses. This seems to be the case independently of whether German is the preferred/dominant language or of factors such as the language of the country where the child was raised. The one-sidedness of the difficulty in this domain of the grammar was first noted by Ronjat (1913) in a diary study. He observed many erroneous word order patterns in the early speech of his bilingual French/German son (father speaks French, mother speaks German, raised in French-speaking environment) of the type *wenn der Bubi ist lieb* (when the Bubi is nice). Since Louis' subordinate clauses in French are target-like, Ronjat (1913) concludes that "l'influence du français me paraît en résumé inutile pour expliquer la position incorrecte du verbe allemand en hypotaxe" (p. 67). It is important to note that Louis preferred German during the first three years of his language development.

The terms preferred/dominant language are fuzzy concepts in Ronjat's (1913) study. In other words, the reader does not come to know the criteria on the basis of which language dominance is being defined. Recently, Genesee et al. (1995) have suggested four criteria in order to determine the preferred/dominant language in bilingual children: MLU, upper bound (number of morphemes in the longest utterance), MMU (Multi-Morphemic Utterances), word types. Döpke (1992) uses a combination of MLU and the amount of each language used with each parent.

Independently of the exact definition of preferred/dominant language in Ronjat's (1913) study, we would not expect the preferred language to show features of the non-preferred language. Rather, we would predict the reverse situation. Yet, Louis' subordinate clauses in German, his preferred language according to Ronjat (1913), show adult French word order.

The next child to be studied is Ivar, a French/German bilingual child, raised in Germany by a French mother and a German father. In this respect, he represents the reverse case of Louis. Ivar's data originate from the longitudinal DUFDE study (Deutsch Und Französisch – Doppelter Erstspracherwerb "German and French – Simultaneous First Language Acquisition")[9]. It is interesting to note that French, the language of Ivar's mother, is not the preferred language in his early language development. First, Ivar's MLU is a little higher in German than in French until the age of 2;5 (see Schlyter, 1990; Köppe, 1994; Table 1). Therefore, if at all, we could say that German is Ivar's preferred language during the early developmental phases. Second, Köppe's (1997) findings for code mixing support this result for this age. With respect to the development of particular grammatical phenomena, however, Ivar proceeds in a parallel fashion in both languages: First preconjunctional subordinate clauses are evidenced at 2;4 in both languages (Müller 1993) and first adult-like complementizers are used at 2;11 in both languages. Further parallel developments in Ivar during earlier phases are presented in Meisel (ed.) (1990, 1994). Parallel grammatical development may indicate that Ivar does not have a preferred language. Like Louis, Ivar uses correct word orders in his French subordinate clauses from very early on (Müller, 1993). In German, first subordinate clauses introduced by a complementizer start to appear around the age of 3. Until the age of 4;4, target-like subordinate clauses amount to 4 per cent of all subordinate clauses (7 out of a total of 167). The finite verb surfaces in the position immediately following the subject or a topicalized constituent, i.e. in third position in subordinate clauses. Some examples are given in (6):

Table 1. *MLU Ivar*

| Recording | Age | MLU German (base)[10] | MLU French (base)[10] |
|---|---|---|---|
| 07 | 1;10,12 | 1.12 (69) | 1.13 |
| 09 | 1;11,17 | 1.41 (99) | 1.31 (68) |
| 10 | 2;0,2 | 1.68 | [11] |
| 12 | 2;0,29 | 1.63 | 1.31 |
| 14 | 2;2,7 | 1.71 | 1.47 |
| 16 | 2;3,5 | 1.80 | 1.35 |
| 18 | 2;4,9 | 1.83 | 1.29 |
| 20 | 2;5,7 | 2.76 | 2.93 |

[9] In the DUFDE project, bilingual German/French children are studied longitudinally. They are videotaped once a fortnight from the age of approximately 1;0,0 (Years;Months,Days) – 1;6 up to the age of 5;0 – 6;0 years. For further details see Meisel (ed.) (1990, 1994). The project has been financed by a grant from the Deutsche Forschungsgemeinschaft (DFG) to Jürgen M. Meisel.

[10] The base is indicated if below 100.

[11] The base is insufficient.

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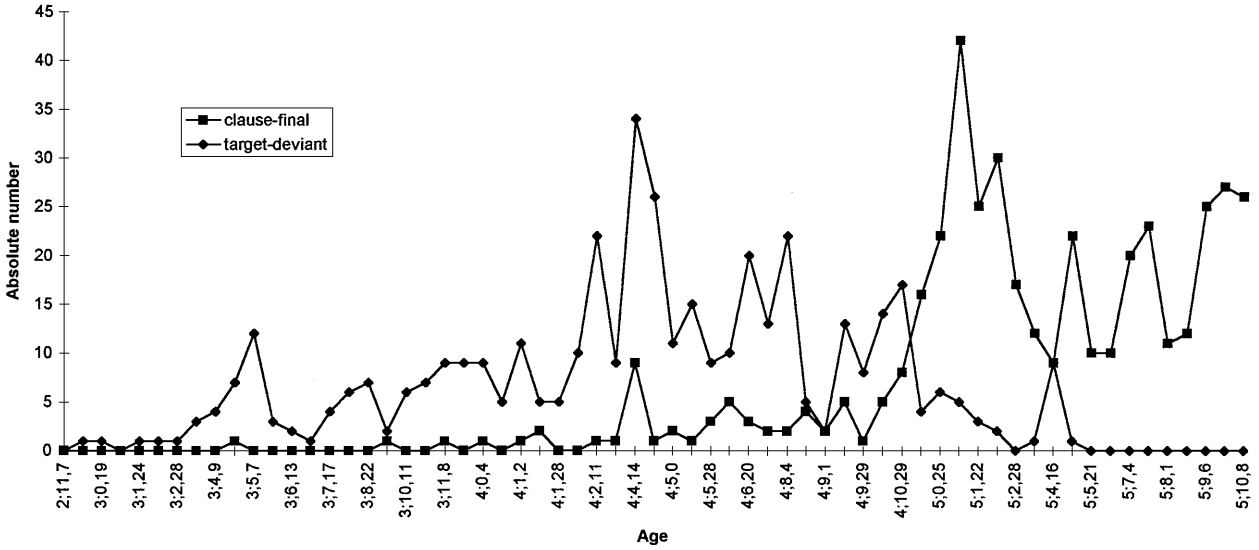



Figure 4. Position of finite verbs in Ivar's German subordinate clauses.

(6) Target-deviant subordinate clauses in Ivar
a. *wenn da komm andere schiffe* . . . (3;5,7)
when there come other boats . . .
"When other boats arrive."
b. *sagen wir mal daß das is ein baum* (3;10,25)
say we [particle] that this is a tree
"Let's say that this is a tree."
c. . . . *daß dann sagt er* . . . (4;4,14)
. . . that then says he . . .
" . . . that he then says."

A quantitative analysis is shown in Figure 4.

Interestingly enough, if the embedded clause is introduced by a wh-word or a relative pronoun such as *der*, *die*, *das*, the word order depends on the function of that wh-word or relative pronoun. If the wh-word or relative pronoun represents the subject of the clause, the finite verb has to be adjacent to it, i.e. in second position (see (7 b)). If the wh-word or relative pronoun functions as the object of the clause, the finite verb surfaces in third position (see (7 a)).

(7) Target-deviant clauses introduced by a wh-word in Ivar
a. *guck mal was ich hab gemacht* (3;10,25)
look [particle] what I have done
b. *guck was is hier* (3;7,17)
look what is here

From the age of 4;4,14 onwards, Ivar uses the target-like verb-final pattern for the first time more than once per recording. He produces many more embedded clauses per recording than before and the target-like pattern becomes progressively more frequent. During the period from 4;4 until 4;11, 28 per cent of all subordinate clauses (52 out of a total of 186) show the correct verb final pattern. However, the verb-final pattern is restricted to subordinate clauses which contain a lexical verb in the present tense. Temporal and modal auxiliaries, as well as past tense lexical verbs, are never found in clause-final position. The correct word order thus seems to be a function of the verb type and the verb's tense marking. Furthermore, with lexical verbs in the present tense we may observe that the verb-final pattern is learned with each complementizer separately. In Müller (1993, 1994) it is shown that the verb-final pattern is not learned for the whole class of wh-words introducing subordinate clauses, but it is first used productively with *was* (what), then with *wer* (who), still later with *wo* (where) and then with *wie* (how).

From 4;11 onwards, the complementizers *daß* (that) and *ob* (if/whether) are integrated into the verb-final pattern. Temporal and modal auxiliaries, as well as past tense lexical verbs are by now used clause-finally. It is interesting to note that in this domain of the grammar we do not observe a step-by-step process: these verbs are integrated into the target-like system instantaneously. We may from now on also observe overgeneralizations of verb-final patterns with subordinate conjunctions that are excluded from the verb-final pattern in adult German, such as *denn* for example: *denn Björn auch fünf is* (since Björn also five years old is) (5;2,6), where adult German has *denn Björn ist auch fünf*.

To summarize, we may conclude that Ivar needs approximately two years in order to acquire the correct position of the finite verb in German subordi-

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nate clauses. Interestingly enough, it takes him more than one year to recognize that the grammatical representation which allows the usage of target-deviant clauses has to be revised. French is clearly not the preferred language, although it may be the case that Ivar is a balanced bilingual child in the sense that he acquires different grammatical phenomena at an equal pace in both languages.

Meisel (1986) has studied two other children of the DUFDE research project and found that the French/German bilingual girl Caroline – although she does not produce many utterances per recording – makes productive use of subordinate clauses with SVX order. At the time when Caroline first uses subordinate clauses, Meisel (1986) notes that German clearly is her preferred language (because she speaks almost no French during this period for reasons related to the family situation).

Bilingual children with a second language different from French are also reported to have problems with the verb-final pattern in German subordinate clauses. In addition to the correct verb-final pattern, they use target-deviant patterns. Leopold (1949a, 1949b) observes many target-deviant word orders in Hildegard's German subordinate clauses. Hildegard is a German/English bilingual child. The language of the mother (English) agrees with that of the environment and English is strongly favored during her first three or four years. But as in the case of Ivar, where the language of the mother (French) does not correspond to the language of the environment (German), Hildegard seems to take a long time to acquire the correct word order: From the age of 5;3/5;4 onwards Leopold (1949b) reports no incorrect positions for the finite verb anymore. But there is a difference between Ivar's (and Louis') case and Hildegard, because Hildegard's progress in German is very slow. During her first three years, she did not use much more than formulaic expressions on the clause level and simple structures, for example, clauses which contain the verb *sein* (to be). Some examples of erroneous word orders in her German subordinate clauses are given in (8):

(8) Target-deviant subordinate clauses in Hildegard
a. *ich bin so satt daß ich mag kein blatt* (4;6/4;7)
I am so full that I like no leaf
"I'm so full I don't want more."
b. *ich hab ein buch wo die name ist struwwelpeter* (5;0/5;1)
I have a book where the name is struwelpeter
"I have a book that is called struwelpeter."

A gradual development of verb-final patterns is also observed by Taeschner (1983) in her two German/Italian bilingual girls (the mother speaks German, the father speaks Italian, raised in an Italian-speaking environment), Lisa and Giulia. Some examples of erroneous orders are given below in (9) from Lisa:

(9) Target-deviant subordinate clauses in Lisa
a. *wenn lisa hat kaputt gemacht dann ist tasche wie papi* (3;4)
when Lisa has broken had then is bag like Daddy
"When Lisa broke it . . . ."
b. *mami guck da lisa was hat gemacht* (3;4)
Mummy look there Lisa what has done
"Mummy look what Lisa did."

At least Lisa also seems to use patterns where the finite verb immediately follows the subordinating conjunction. Like Ivar, she uses this pattern when the wh-word has the function of the subject in the subordinate clause. However, differing from Ivar, she also uses this pattern with subordinating conjunctions such as *wenn* (when) and *weil* (because): *wenn hast du alles das hier gelesen, kriegst du das hier* (when have you all this read get you this one).[12] Sometimes, the subject occurs twice, immediately preceding and following the finite verb, showing that both orders are possible with these conjunctions: *wenn du hast du geschlafen, dann tun wir das nehmen* (when you have you finished sleeping then do we this one take).[13]

Let us now turn to the special cases in both acquisition types, bilingual and monolingual language acquisition. There are some bilingual children studied in the literature who seem to acquire the correct word order in German subordinate clauses instantaneously, that is, with the use of first subordinating conjunctions or even before, with the first preconjunctional subordinate clauses. One of the children studied in Meisel (1986), Pierre (French/German), and one of the children observed by Müller (1993), Pascal (French/German), are examples of instantaneous acquisition. Kielhöfer and Jonekeit (1983) come to the same conclusion for their French/German bilingual children Jens and Olivier (the mother speaks French, the father speaks German, raised in a German-speaking environment). Therefore, we may conclude that although "erroneous paths" in the acquisition of word order in German subordinate clauses are frequently attested in bilingual children, their appearance is not a necessary feature of bilingual first language acquisition (see Table 2).

What about monolingual German children? Until recently, most researchers have taken for granted

[12] Unfortunately, Taeschner (1983) does not mention Lisa's age.
[13] Again, Lisa's age is not mentioned.

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Table 2. *Bilingual children's usage of erroneous word orders and V-final in German subordinate clauses*

| Child | V-final | SVX | VSX | XVS | wh-subject +V+X | author |
|---|---|---|---|---|---|---|
| Louis | + | + | ? | ? | ? | Ronjat (1913) |
| Ivar | + | + | – | + | + | Müller (1993) |
| Hildegard | + | + | – | – | + | Leopold (1949a,b) |
| Giulia | + | + | – | – | – | Taeschner (1983) |
| Lisa | + | + | + | – | + | Taeschner (1983) |
| Caroline[14] | + | + | – | – | + | Meisel (1986) |
| Pierre | + | – | – | – | – | Meisel (1986) |
| Pascal | + | – | – | – | – | Müller (1993) |
| Jens | + | – | – | – | – | Kielhöfer & Jonekeit (1983) |
| Olivier | + | – | – | – | – | Kielhöfer & Jonekeit (1983) |

that the acquisition of word order in German subordinate clauses represents an error-free area. However, Penner (1990) reports on target-deviant patterns in subordinate clauses in Bernese Swiss German, where the children place the finite verb in second or third position. Schaner-Wolles (1990) observes subordinate clauses where the finite verb surfaces in third position in her Austrian children. Unfortunately, one does not know whether the "errors" are exceptional or they are characteristic of a developmental phase. Like the bilingual children, monolingual children also use the correct verb-final pattern during the time when they produce target-deviant word orders.

The studies by Fritzenschaft et al. (1990) and Gawlitzek-Maiwald et al. (1992) are the first to show that a monolingual German child, in this case called Benny, may take ten months to learn the verb-final pattern in German subordinate clauses. Benny uses the same deviant patterns as the German/Italian bilingual child Lisa (see (10)), in addition to the target-like verb-final pattern (with the same complementizers).

(10) Target-deviant subordinate clauses in Benny

a. *will die meerjungfrau haben daß du has net die meerjungfrau* (3;0,19)
want the mermaid have that you have not the mermaid
"I want to have the mermaid so that you won't get it."

b. *weißt du we geht jetzt daraus*? (3;6,2)
know you who goes now out-there
"Do you know who goes outside now?"

As noted above, in adult German some subordinate conjunctions such as *weil* "because" also license root word order, that is, the finite verb appears in third position, immediately following the conjunction and the subject/topicalized constituent. Benny's data show the same word order variation with *weil* as with other conjunctions, namely SVX, VSX and verb-final patterns. VSX is not grammatical in adult German *weil*-clauses: *weil hast du das doch gesagt* (3;2,29) "Because have you it really said".

We may conclude then by saying that the same types of errors which have been found in bilingual children are also evidenced in monolingual children. There is, however, a quantitative difference between the two acquisition types: whereas the error types presented here are frequently encountered in bilingual language development, they seem to represent rather an exception in monolingual language acquisition. This quantitative difference should of course be accounted for.

To summarize:

- When children acquire German and a second language such as French, Italian, or English, difficulty seems to be asymmetrical, that is, word order in French, Italian, and English subordinate clauses does not represent a problem space for the children, in contrast to German, where various error types are attested. This is the case independently of whether German is the preferred language or not.
- There appears to be no qualitative difference between the error types produced by bilingual and by monolingual children.
- The learning procedures observed for bilingual and monolingual children who "chose the wrong path" are very similar. Erroneous decisions are not revised within a very short period of time, but the revision process takes one or even two years (see Müller, 1996, where this is discussed in the light of parameter mis-setting).
- Bilingual children who learn German and a second language such as French, Italian, or English are much more easily "misled" and produce target-deviant word orders much more frequently than monolingual children. There is an important quantitative difference between bilingual first and monolingual language acquisition.
- Difficulty with word order in German subordinate clauses is not a necessary feature of bilingual language development.

[14] Caroline has only very few subordinate clauses.

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There is another important conclusion we may draw from the observations: the children under investigation who produce erroneous word orders in German subordinate clauses have two separate grammatical systems. They come up with word orders in subordinate clauses which can neither be completely explained by the German input nor by the grammar of the other language involved, namely cases where the finite (lexical or auxiliary) verb precedes the subject in VSX and XVS orders. Interestingly enough, the children do not use these incorrect word orders in French, Italian and English, indicating that they have acquired two separate grammatical systems.

I want to suggest that the errors made in bilingual language development are due to transfer of features of the other language. In the following sections, I will try to shed some light on the question of what exactly can be transferred. The transfer approach favored here explains why there is such a quantitative difference between bilingual first and monolingual language acquisition with respect to the choice of "erroneous paths". The observation that monolingual children produce target-deviant word orders as well will be taken as evidence in favor of the assumption that transfer cannot be the whole story.

### *Ambiguous input as the source for transfer*

I want to show here that adult German is ambiguous from the child's perspective and that transfer of features from the other language occurs exactly when the input leaves open the possibility for more than one grammatical analysis. What is so special about German subordinate clauses?

The first thing the child has to detect is that complementizers are functional elements in German, or in other words that complementizers are generated in the position where the finite verb moves to in main clauses. The second characteristic is that German phrase structure provides a head-final position for the finite verb in subordinate clauses.

The status of complementizers is not easy to detect from the input the child receives. First, as has already been noticed in the introduction, German has conjunctions which disallow the verb-final pattern such as denn (since) and *sondern* (but). With other conjunctions, the verb-final pattern is optional and coexists with main clause word order: *weil* (because) and *obwohl* (although) in spoken German. A further problem concerns the categorization of conjunctions. Adverbial conjunctions such as *weil* and *nachdem* (after) share many properties with adverbs such as *darum* (about that) and *danach* (afterwards) and prepositions such as *wegen* (because of) and *nach* (after). All encode similar semantic relations (causal, temporal) and prepositions and conjunctions appear in a position preceding NPs and clauses respectively. There are also many homonyms in German, such as *bis* which is used as a preposition with the meaning "until"/"as far as", and as a conjunction with the meaning "until". Another example is *denn*, which functions as an adverb in spoken German with the meaning "then" (colloquial form of *dann*) and as a conjunction with the meaning "for". We must not forget that children use prepositions and adverbs long before they use conjunctions (Müller 1993).

As far as the children under investigation are concerned, it can be shown that both parallels are discovered by them, the similarities between prepositions and conjunctions on the one hand, and between adverbs and conjunctions on the other. The category COMP in Ivar's grammar of German develops out of a lexical category, namely the preposition für "for". In Müller (1993, 1994, 1996) and Meisel and Müller (1992) I hypothesized that the usage of the lexical forerunner *für* indicates that Ivar projects a new category that is first classified as being lexical (not functional) in syntax in order to generate complementizers. If complementizers are first analyzed as lexical categories, they are not associated with finiteness and the position in which they are generated cannot count as a landing site for finite verb movement.

At the age of 2;7, i.e. four months before the first adult-like subordinate conjunctions are being used, Ivar also starts to introduce whole sentences (finite and infinitival) with the preposition *für*. Some examples of this distribution are given below in (11).

(11) The distribution of *für* in Ivar

a. *fum tiere weg nicht [n]aufen* (2;7,17)
for animals away not run
"In order for the animals not to run away."

b. *das für k[ j]emmen deine haare* (2;10,11)
this for to-put your hair
"This is for to put in your hair."

At later developmental stages we still find clear evidence for the use of a preposition to introduce finite subordinate clauses, for example, *das is für der rauch geht hoch in das hau* (in order for the smoke to go up in the house) (3;4,9).

The same development can be observed in Ivar's French, where he introduces his first subordinate clauses with the French equivalent of German *für*, namely *pour*. At least for English, a similar developmental path has been attested, namely in the children studied by Brown (1973), Adam and Eve: *for for bus stops* (Eve), *for the sun get in my eyes* (Adam). Jespersen (1964) notes that many English comple-

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mentizers evolved historically from prepositions.[15] Pinker (1984) argues for the development of complementizers from prepositions in language acquisition. Usage of the real complementizers *daß*, *que*, *that* and *ob*, *si*, *if* may trigger the reanalysis of elements introducing clauses as complementizers (see Müller 1993). It has been observed by researchers such as Bickerton (1981), Koopman and Lefebvre (1981), Washabaugh (1975), and Woolford (1979) that in French- and English-based creole languages the prepositions which are first used by children to introduce subordinate clauses in English and French, *for* and *pour*, are precursors of complementizers. Perhaps it is not a trivial finding that it is exactly those creoles where one of the contact languages is English or French which develop their complementizer system from a preposition (for other sources for complementizers in other languages see e.g. Muysken (1977)).

How do we know that *für* is categorized as a preposition in Ivar's grammar and not as a complementizer? The examples show that besides the form *für* Ivar uses some variants such as *fo*, *fum*, *föm* which are not attested in adult German. However, these are potential forms of the German system, since some prepositions may fuse with case-marked articles: *an dem* "at/to+the (dat.masc.sing)" may fuse, giving rise to *am*. In contrast to prepositions, complementizers are invariant at least in the variety of German Ivar is exposed to. Note further that Ivar never uses complementizers in combination with NPs, but he uses *für* in this context.

At the time when Ivar starts to first use adult-like complementizers, many important developments within main clauses are to be observed:

- Target-deviant word order patterns disappear, i.e. the XSVY order *dadrauf papa baut ein ein ein ein turm* "there-on Daddy builds a a a a tower" and the verb-final order in declarative main clauses *ivar buch buch liest* "Ivar book book reads". Also, non-finite verbs are always placed correctly in German, i.e. VO patterns with these (which were used but infrequently) disappear.
- V2-like patterns are no longer limited to "light" adverbs such as *da* (there), *jetzt* (now), *so* (like this), *hier* (here), but there are genuine topicalized verb complements in first position (objects) (see Müller & Penner, 1996).
- V2-like patterns are no longer limited to a small class of verbs, including *sein* (to be), and unaccusative verbs such as *gehen* (to go) and *kommen* (to come).
- Target-consistent wh-questions are evidenced by now (i.e. questions other than *wo* (where) questions).

In French, the use of the first adult-like complementizers is correlated with the emergence of subject clitic inversion of the type *où vas-tu* (where go you).

In other words, the two languages approach the target-system with respect to main clauses. Ivar uses the correct word orders in German and a much greater variety of different construction types in both languages. Again, he separates the two languages, since V2 patterns are never used incorrectly in French, and even in German root clauses, incorrect word order patterns completely disappear. Ivar thus knows that German is a V2-language and French is a residual V2-language at the time when he uses incorrect word orders in German subordinate clauses. Since he has used finite verbs clause-finally in declarative main clauses before (see (13), below), it is plausible to assume that his phrase structure configuration of a German sentence makes available a head-final position for finite verbs. The problem is that V2 is independent of whether the clause is introduced by a complementizer or whether we are dealing with a main clause. In structural terms, this observation is equivalent to a structure where the finite verb may surface in the V2-position independently of whether a complementizer is present or not. Therefore, we have to assume that Ivar's phrase structure configuration of a German sentence has a functional projection (say: IP) which he can activate in subordinate clauses and where the finite verb must move. The specifier of such a projection can host subjects and also nonsubject constituents, since we observed SVX and XVS patterns in his subordinate clauses. Ivar, thus, has activated a functional projection in between CP and VP, which serves as a landing-site for finite verbs (see Figure 5).

This tree is similar to the tree of adult French, Italian and English with respect to the functional projections. It differs from French, Italian and English in one respect and this is exactly the reason why we have to assume that Ivar's phrase structure configuration of a German sentence differs from that of French: In this tree, the specifier of IP may host subjects (see sentence (7 a)) and non-subject constituents (see sentence (6 c)).

[15] Emonds (1985) goes even further by claiming that at least those adverbial conjunctions such as *in case of*, *although*, *since*, *while*, *before* and *because*, which have "intrinsic semantic content," are being categorized as prepositions in present-day English. One reason for this classification is that these adverbial conjunctions, like prepositions, may be modified with *right*. Note that the children under investigation start out with these adverbial conjunctions. The real complementizers *daß*, *que*, *that* and *ob*, *si*, *if* occur late in the developmental process.

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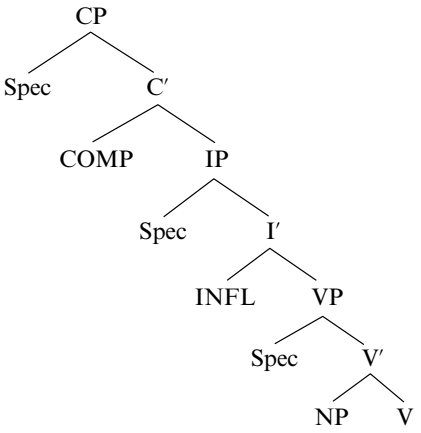



Figure 5. Phrase structure configuration of a German sentence in Ivar.

Is there a natural language with such a phrase structure configuration? The answer to this question is positive. There are several languages evidencing V2 in subordinate clauses: Yiddish (Diesing, 1990), Icelandic (Platzack, 1993) and Old High German (Tomaselli, 1991). One example from Yiddish is: *ir zolt visn zayn, mayne libe kinderlekh, az vayn ken men makhn fun troybn oykh* "You should know be, my dear children, that wine can one make from grapes also".[16]

But note also, that if we say that Ivar's phrase structure configuration of a German sentence corresponds to adult Yiddish, this does not apply to his VP, which is head-final in his grammar but head-initial in Yiddish.[17]

What is the learning task in Ivar? He has to learn that adult German has one functional category (CP) where complementizers are generated and where finite verbs move in main clauses, that is, no distinct INFL node is needed as in Figure 1. In terms of learnability theory, Ivar has to narrow down his grammar, which is a problem I discussed in Müller (1996). Notice that from 4;4,14 onwards, Ivar also uses the target-like verb-final pattern quite frequently and he learns this pattern for each complementizer separately. This observation suggests that Ivar's grammar makes available two phrase structure configurations for a German subordinate clause, depending on the type of element within CP, namely the structure in Figure 5 and that in Figure 1.

Let us now have a closer look at another developmental path for German, taken by the monolingual child Benny studied in Fritzenschaft et al. (1990) and Gawlitzek-Maiwald et al. (1992), where adverbs play a central role. Apart from SVX patterns, Benny also uses VSX patterns in subordinate clauses, which are introduced by conjunctions. Benny seems to have difficulty with the categorization of adverbial conjunctions too. However, he may treat them in his system as he treats adverbs, that is, as non-heads. Fritzenschaft et al. (1990) and Gawlitzek-Maiwald et al. (1992) hypothesize that the use of conjunctions (see (12a), (12b), (12c)) in Benny shows parallels to the use of adverbs (see (12d), (12e), (12f)). Some examples suggesting a parallel treatment of conjunctions and adverbs with respect to their integration into German clause structure are:

(12) The distribution of *wenn* as compared with adverbs in Benny

a. *du wenn des dreht sich was tut' s dann*? (3;2,26)
you when it turns itself what does it then
"When it turns what is it doing then?"
[*wenn*+S+V+X]

b. *wenn hab ich geburtstag habt* . . . (3;1,4)
when have I birthday had . . .
"When I've had my birthday . . . "
[*wenn*+V+S+X]

c. *wenn des der bub neischmeißt dann fährt schon* (3;1,13)
when this the boy in-throws then drives already
"When the boy throws this in . . . "
[*wenn*. . .+V-final]

d. *sonst da kann ich nich absteigen* (3;1,3)
otherwise there can I not off-get
"Otherwise I cannot get off."
(target-deviant) [*sonst* +X+V+S]

e. *jetzt hab i wieder unfall gemacht* (2;11,21)
now have I again accident made
"Now I've had an accident again."
(target-like) [*jetzt* +V+S+X]

f. *dann ich pipi mach* (2;11,21)
then I pee make
"Then I pee."
(target-deviant) [*dann*. . .+V-final]

Root wh-questions also follow the same patterns in Benny's speech, i.e. they are used with the following constructions: V2 *was macht du*? (2;11,21) "what makes you", verb-final *wo des da hinkomm*? (2;6,25) "where this one particle-goes", and V3

[16] The language-specific variation as to the A- or A′-status of the specifier of IP could be due to whether INFL assigns Nominative nondirectionally (as in Yiddish and German) or directionally (to the right or to the left, as in French for example).

[17] Diesing (1990) and Santorini (1992) show that Yiddish developed from a phrase structure where finite verbs were placed clause-finally in subordinate clauses and in second position in main clauses to a phrase structure which regularly shows V2 in subordinate clauses as well. Interestingly enough, this syntactic change went hand in hand with a change from OV to VO (see also Travis 1984).

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*warum weiter geht nich*? (2;11,21) "why further goes not".

Fritzenschaft et al. (1990) favor an asymmetric approach to sentence structure and assume that Benny has two phrase structure configurations available, one with a head-initial INFL and another with a head-final INFL. We may assume, however, the same phrase structure configuration for Benny as for Ivar (see Figure 5). In the structure in Figure 5, Benny also seems to interpret the specifier position of IP as a position which can host subjects and non-subject constituents, giving rise to SVX and XVS patterns (the latter exclusively with *weil* clauses, which corresponds to adult German) in subordinate clauses. Since Benny produces many target-like subordinate clauses at the same time when he uses target-deviant patterns, we may assume that the phrase structure configuration in Figure 1 is available to him as well.

The question, then, is how to describe VSX patterns in structural terms. The first thing to be noticed is that there are, once again, natural languages where this pattern is regular in subordinate clauses. These are Afrikaans (du Plessis, 1986), Welsh (Pollard, 1991), and Irish (McCloskey, 1991), for example. One example from Welsh is: *dywedodd Gwyny gwelodd ef y bechgyn* (said Gwyn that saw he the boys).

Two possible sources for V1 in subordinate clauses are plausible: we may say, as has been assumed for Welsh and Irish, that the subject does not necessarily have to move into the specifier of IP in order to be assigned the nominative Case. The subject may remain in its base position (which is the specifier of VP) and receives nominative Case from the finite verb raised into INFL. This analysis is problematic, because the empty specifier position of IP would not be licensed by the principles of Universal Grammar, since it would constitute a violation of the Empty Category Principle. There is, however, another explanation for the V1 pattern in Benny's subordinate clauses, which may be derived from the ambiguous input. Benny is raised in the surroundings of Tübingen. His mother speaks Swabian with him, his father Hessian. Many German dialects, Hessian included,[18] allow a doubly-filled COMP position, giving rise to sentences such as: *ich weiß* ***mit wem daß*** *Maria ausgegangen ist* (I know with whom that Mary went out) (Fanselow & Felix 1987, p. 178). Grewendorf (1988) has suggested, following Chomsky (1986), that in order to avoid doubly filled COMPs in those dialects of German which do not have this phenomenon, mostly the northern dialects, the specifier of CP and COMP share features. The wh-phrase in the specifier of CP may thus satisfy the selectional restrictions imposed by the matrix verb (e.g., *fragen* "to ask" selects an indirect question), where the selectional features are located within COMP. The COMP position in these dialects counts as being occupied and no element may be moved into it. Benny may assume now, that since doubly filled COMPs are allowed in the input, the finite verb may raise into COMP if the specifier position is occupied by another element, a wh-phrase for example. Note also that adult German regularly uses embedded V2 clauses of the type in (3). The existence of such data in addition to an analysis of adverbial conjunctions as non-heads (as their adverbial counterparts) may mislead the child. V1 in embedded clauses could then structurally be defined as follows: the finite verb raises into COMP and the adverbial conjunction is located in the specifier of CP. The CP would then be filled with two elements: Spec,CP with the adverbial conjunction and COMP with the finite verb.

To return to our earlier discussion, in both children, Ivar and Benny, we are dealing with a conspiracy between V2 in root and non-root clauses which leads the children to assume that a separate functional category (here: IP) has to be projected. The similar analyses given for the bilingual child Ivar and the monolingual child Benny nicely account for the observation that bilingual and monolingual children make very similar errors in the domain of German subordinate clauses. There is, however, a quantitative difference between these two groups: bilingual children tend to choose "wrong" paths much more often than monolingual children do.[19] We may account for this difference in terms of the second language which is in contact with German. In the case of ambiguous data, the bilingual child is tempted to use parts of the analysis for the unambiguous data in the second language. Or put differently: in case of doubt, the bilingual child, as a relief strategy, tries to solve the ambiguity by using transfer.

We have now determined the range where transfer occurs: ambiguous input. Let us now turn to the question of what exactly is transferred in the domain of subordinate clauses when German and another

[18] I want to thank Jürgen Meisel as a speaker of Hessian for this information.

[19] One reviewer suggests that this difference may be due to the fact that much more information is available about monolingual children. It is of course possible that further studies on bilingual language development will show that there are many more bilingual children than expected who choose the "right" path in the domain of German subordinate clauses. Nonetheless, it is surprising that "wrong" paths seem to be rather exceptional in monolingual language development at the current level of research in the domain of German subordinate clauses.

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language such as French, Italian or English are in contact.

***What is transferred?***

The first hypothesis could be that surface strings are transferred. This assumption is, however, not plausible: The French/German and Italian/German bilingual children also use AUX-S-V sequences, i.e. subject auxiliary inversion in German subordinate clauses with nominal and pronominal subjects. This is ungrammatical in French and Italian, and the children do not use this pattern in these languages.

The second extreme would be the hypothesis advanced by Meisel (1983) for second language learners, that complete deep structures are transferred. But this approach, although plausible for second language acquisition, cannot account for bilingual first language development, since the children use verb-final patterns in German declarative clauses as soon as they make productive use of finite verbs. The pattern is completely absent in the children's second language, French, Italian or English, where it would also be ungrammatical. This shows that the children have a phrase structure configuration available in German with a head-final position for finite verbs. One example of a root verb-final clause for each child is given below in (13). The use of verb-final patterns in German declarative clauses has also been observed with monolingual German children (see Fritzenschaft et al., 1990, and Gawlitzek-Maiwald et al., 1992, and example (13 g) of Benny).

(13) root verb-final clauses in the German of bilingual children and in Benny

a. *ivar buch buch liest* (2;4,7; Ivar)
Ivar book book reads
"Ivar reads the book."

b. *denn ich auch schläf dann* (5;0,19; Hildegard)
then I also sleep then
"Then I sleep too."

c. *mama giulia schleibi* (1;9; Giulia)
Mummy Giulia writes
"Mummy writes Giulia."

d. *lisa mutsi macht* (2;4; Lisa)
Lisa dirty makes
"Lisa makes it dirty."

e. *diese da drauf is* (2;10; Caroline)
this one there on top is
"This one is there on top."

f. *ich ich wie hol* (2;4,21; Pascal)
I I back get
"I get it back."

g. *ich auch ein bauch möchte* (2;8,28; Benny)
I also a belly want
"I want a belly too."

As shown by Meisel (1986), Pierre places only non-finite verbs in clause final position, never finite verbs. In Hildegard, verb-final patterns could not be attested either, with one exception, but Leopold (1949a, 1949b) does not explicitly deny the usage of these patterns. Therefore, we may not conclude that Hildegard did not use this pattern at all. The examples for verb-final patterns are infinitives in clause final position: *wann traute kommen*? (when Traute to-come?). In Giulia another problem arises, since it is impossible to say without doubt whether the words to which she attaches an "i" are verbs: *schleibi* (write), *sitzi* (sit), *tinki* (drink), *badi* (take a bath). Giulia also uses non-finite verbs in clause final position to a greater extent than finite verbs: *giulia paola bleiben* (Giulia [with] Paola to-stay), *giulia nicht blot essen* (Giulia not bread to-eat). Ronjat (1913) and Kielhöfer and Jonekeit (1983) do not mention the usage of finite verb-final clauses in their children, but the reader in general does not learn very much about finite verb order in main clauses.

Another assumption could be that parameter values or feature specifications of categories are transferred. This is a more plausible hypothesis, since it may account for the data. The children may assume in contrast to adult German that the finiteness operator is located in INFL and not in COMP. This corresponds to the parameter setting of French, Italian and English. The relevant finiteness parameter would be: "[+F] in INFL" or "[+F] in COMP".

In the previous section, the development of German complementizers has been outlined. When discussing Ivar's data, parallels between the development of complementizers in German on the one hand and in French and English on the other hand were observed. If we assume that Ivar has transferred the value of the finiteness parameter or feature specification of functional categories from French into German, the question arises as to whether the "wrong" analysis of German complementizers triggers the wrong setting of the finiteness parameter/the wrong feature specification of functional categories or vice versa. The decision depends very much on the acquisition theory one has in mind. That the wrong analysis of complementizers triggers wrong parameter settings or wrong feature specifications of categories would be a plausible assumption under the *weak continuity hypothesis*, coupled with lexical learning (cf. Clahsen 1982, 1988). Recently, lexical learning has been called into doubt. Bottari, Cipriani and Chilosi (1992), and Penner and Weissenborn (1993) show that the monosyllabic place-holders used by very young children within the NP are not merely phonological chunks or imperfect imitations, but instead elements which should be seen as attempts to

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reproduce the abstract pattern of the structure of NPs. This amounts to saying that the positional and structural properties of functional categories (here the determiners) are learned before the specific morphophonemic forms of the adult language. Syntactic learning thus is detached from lexical learning.

Under the *strong continuity hypothesis*, adopted here, parameter setting probably applies prior to the multiple-word stage and the wrong analysis of complementizers evidenced later in the production data of the children is an outcome of this. In Müller and Penner (1996) several arguments are advanced in favor of strong continuity in the domain of subordinate clauses. Under strong continuity the underlying structure of subordinate clauses is a complete clausal projection, CP (although underspecified; see Meisel & Müller (1992), where this is argued to be the case for verbal functional projections), rather than a "truncated" one (IP), even at the stage where the adult-like lexical complementizers are systematically lacking. The first kind of evidence is constituted by the verb placement particularities of preconjunctional subordinate clauses: Some children mark German subordinate clauses at the preconjunctional stage solely by verb-final patterns. The second kind of evidence are placeholders, inserted into the position where complementizers are used in the adult system. These placeholders mark the missing lexical complementizers. Thus, it may be proposed that the wrong analysis of conjunctions in German by the children is the result of an "error" that occurred a long time before the use of conjunctions. The error is that the children, due to a target-deviant feature specification of categories, have projected a functional category for German (here: IP) which is "superfluous". Note once more that this does not mean that the children, Benny and Ivar, have not acquired German as a V2 language (and for Ivar that French is not a generalized V2 language).

### *Consequences for language acquisition within parameter setting theory*

In the present article, it has been argued that bilingual children may transfer parameter values in the case of ambiguous input.

One question which arises at this point is how children set parameters via positive evidence only, once we admit that the input may be ambiguous and, in principle, compatible with more than one grammatical representation. This represents a problem for parameter setting theory, since positive evidence should lead the learner directly to the correct grammar. In acquisition theory, the existence of triggering data guarantees the correct choice of parameter values. A trigger is a cue in the primary data which enables the language learner to set the parameter values. Recently, Gibson and Wexler (1994) have denied the existence of triggering data for all parameters. This idea will be explored for the case of word order errors studied in the children under investigation.

The common denominator of V2 languages (in contrast to non-V2 or residual V2 languages) is the conflation of the A (argument) (=IP) and the A' (non-argument) (=CP) system. Thus, in a V2 language, subjects may surface in the same position as fronted non-subject constituents (e.g. objects and adverbial phrases). This conflation may be complete, as in German, showing root-/non-root asymmetries with respect to V2, or partial, as in Yiddish, showing no root-/non-root asymmetries with respect to V2. The special status of complementizers in German (functional elements associated with finiteness) could be conceived of as a subparameter of the global parameter +/-V2 (global parameter: "A- and A'-system conflate" vs. "A- and A'-system do not conflate"). In other words, there are V2 languages such as German, where the complementizer does not instantiate a separate functional category, and V2 languages such as Yiddish, where it does. We could hypothesize that there is no triggering data for this kind of subparameter and that the child therefore cannot simply look for a trigger in the input and subsequently be driven to the correct grammar. In this respect, it is interesting to note that all children have acquired German as a V2 language, including those children who make errors in subordinate clauses. Thus, they do not hesitate as to whether German is V2 or not (the global parameter). Some children, however, make incorrect choices with respect to the status of complementizers (the subparameter). It is not surprising that inductive learning is evidenced in the domain of subparameters: The children use the same complementizer with correct and incorrect word orders and the correct verb-final order is learned for each complementizer separately. More research will need to be conducted in order to determine whether the postulation of a subparameter without triggering data is plausible. If this turns out to be the case, we would be able to predict that transfer in bilingual individuals is restricted to subparameters.

The analysis presented here has to cope with another problem, namely parameter resetting. The children who initially make errors in subordinate clauses achieve a state where these errors have completely disappeared. Did they reset the parameter? Parameter resetting should be avoided as an analytical concept in the general case, since it may lead the

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child to switching parameter values an infinite number of times and as a consequence to a situation where s/he may never settle on the correct value (see Clahsen, 1990; Müller, 1993; Randall, 1990; Valian, 1990). Since subparameters confront the language learner with the analysis of ambiguous input, we have to guarantee that once the learner chose the wrong value for a subparameter s/he should be able to revise this decision during the acquisition course. Again, more empirical work may help to clarify this issue (see Müller 1994, 1996). The most interesting observation with respect to this question is that learners who chose the wrong path cannot simply revise their decision within a short period of time. Revisions are relatively time-consuming, that is, we find evidence for inductive learning. Since it has been argued that the setting of a parameter is instantaneous, the possibility that the subparameter has been reset by the learners is excluded. What is the learning procedure then? It is evident that learners who chose the wrong value for the subparameter start to build up a list of exceptions to the setting of this special subparameter. Such a list has to be implemented anyway, since there are exceptions to many parametrized grammatical regularities. We may further speculate that once this list of exceptions is exceedingly large, the learner, due to economy principles, develops a new generalization which outranks the old generalization, the parameter. This leads us to the question as to whether a parameter is associated with particular values or whether it has to be conceived of as a method or a subroutine for language analysis (see Haider, 1993b). With respect to the preceding discussion, it is very plausible to think of parameters as subroutines.

A further problem is that there are also children who do not make visible mistakes. This indicates that individual characteristics of learners have to be considered as well. Although difficult at the current stage of theoretical grammatical research, the study of the individual learner is a desirable goal. Gawlitzek-Maiwald et al. (1992) describe – as the two extremes of a continuum – a conservative learner and a liberal learner. Benny is treated as an extremely liberal language learner. Ivar, the bilingual child studied in depth here, can also be characterized as a liberal learner; for example, he uses preconjunctional subordinate clauses, that is, a construction which is "incomplete" from the adult's perspective. The bilingual child Pascal represents the other extreme, a very conservative learner. Pascal has correct word orders in subordinate clauses from the beginning and he does not use preconjunctional subordinate clauses. It would be interesting to relate wrong paths in language acquisition to individual features of learners, such as liberal vs. conservative. Such a perspective is opened by Fodor's (1998) work. In sentence-processing research, there have been defined different strategies for dealing with ambiguity: (a) serial processing, that is, the learner selects one analysis and revises it later if necessary; (b) parallel processing, that is, the learner does not select one analysis but "works" with all analyses until more information is available on the basis of which only one analysis can be chosen; (c) delay or "wait-and-see", that is, the learner waits for more information before choosing between different analyses, and no grammar change takes place until unambiguous input becomes available. It is possible now to interpret these strategies as characteristics of individual learners. In other words, we do not have to decide between the different strategies and determine which is "the correct one", but we may assume that all three strategies coexist. The present analyses of Ivar's and Benny's intermediate German grammars could be interpreted as evidencing strategies (a) and perhaps (b). Ivar made a wrong choice with respect to a parameter value. It takes him more than one year to recognize that the grammatical representation which allows the usage of target-deviant clauses has to be revised. During this period (until the age of 4;4), target-like subordinate clauses amount to 4 per cent of all subordinate clauses. In terms of the strategies mentioned above, we may conclude that Ivar is a type (a) learner: He selects one analysis and revises it later. The learning algorithm presented in Gibson and Wexler (1994) is of type (a). Benny may be qualified as a type (b) learner. Fritzenschaft et al. (1990) and Gawlitzek-Maiwald et al. (1992) do not mention a stage comparable to that observed in Ivar, where Benny's data lack the target-like verb-final pattern in subordinate clauses. Benny thus seems to compute two alternatives for German sentence structure during the same developmental phase. Finally, there is also evidence of the type (c) learner in the longitudinal data presented here. Pascal may represent a conservative type (c) learner. He uses a wait-and-see device, namely he does not use subordinate clauses at all until unambiguous information is available. This is also the reason why his data do not evidence "mistakes". Type (c) learners are simply silent.

In the present paper I have tried to argue in favor of transfer in the bilingual individual as a function of ambiguous input. In comparing the children under investigation, I have tried to show that language dominance is not the most plausible reason for transfer. There is indeed more evidence against language dominance as an explanatory concept. Crysmann and Müller (1995, in press) show that for the phenomena related to the hierarchical versus "flat" structure of the VP, the French system represents the

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problem space for the bilingual French/German children investigated in the present paper. It can be shown that the VP in adult French is best described in terms of a flat structure, in contrast to German, which involves a hierarchical VP. The French input does not unambiguously lead to the conclusion that French has a flat VP structure. Thus, the children assume a hierarchical VP for French for about two years of their language development, evidencing clitic placement and auxiliary selection errors (Müller & Crysmann, 1997). Again, monolingual French children also evidence these error types, but to a much lesser extent, that is, they revise their analysis of the French VP in terms of a hierarchical structure during a period of about three months, and "wrong paths" are less frequent. The "error" with respect to the French VP occurs during the same period when the children have "wrong" subordinate clauses in German. This observation excludes language dominance as an explanatory concept.

A further observation to be emphasized is that transfer only occurs to the extent that the language learner has evidence for the grammatical analysis resulting from transfer in the recipient language. In other words, "blind" transfer does not exist in the children studied here. A French/Italian/English property can be transferred into German because there is evidence for the property in adult German as well (subordinate clauses showing root word order). Furthermore, transfer has been viewed positively, as a strategy to cope with problematic input. In this sense, transfer can be viewed as a relief strategy. In discussing the monolingual child Benny, we hypothesized that he has been mislead by the ambiguous German input. In order to explain VSX patterns in subordinate clauses, it was suggested that the Hessian input contains examples for a doubly filled COMP position and that Benny's analysis of VSX patterns is an outcome of this dialectal property. The question which arises is whether Benny is a real monolingual German child. Dialectal variation may indeed be enormous, involving different parameter settings (see Roberge & Vinet, 1989, for example). Benny may be a bilingual child who has knowledge of two German dialects. Recently, Roeper (1997) has defended the position that "from a theoretical perspective, all speakers are bilingua ... In particular, ... children exhibit a form of bilingualism when they appear to be between Stages" (p. 2). Bilingualism with respect to first language acquisition means that the child has two grammars, one with agreement and the other without, for example. This view of first language acquisition opens interesting perspectives to a parallel treatment of "monolingual" and bilingual first language development. Interestingly, the problems Ivar and Benny are struggling with are also characteristic of adult second language learners of German (see Müller, 1998, to appear,b). Again, it would be interesting to compare "monolingual" and bilingual first language acquisition with adult second language development, a perspective that falls outside the scope of the present paper.

Another interesting result is that the variation found in the bilingual children who produce erroneous word orders in German subordinate clauses falls within the range of Universal Grammar. From a more general point, this means that UG theory may shed light not only on monolingual language development but also on the nature of bilingual language acquisition.

## Summary

In the present paper, transfer has been argued to be a relief strategy, used in order to cope with ambiguous input. Once one of the languages leaves open the possibility for more than one grammatical analysis, the bilingual individual may, in compensation, use parts of the analysis of the second language, that is, s/he transfers parameter values or feature specifications of categories. The status of German complementizers is not easy to detect from the input the child receives. German subordinate clauses present the child with a variety of word orders and the verb-final pattern of subordinate clauses is used in main clauses as well. The grammatical representation resulting from transfer is compatible with parts of the target language: the children come up with a phrase structure where V2 is independent of whether the clause is introduced by a subordinating conjunction or not. This mirrors the possibilities of the adult system. In other words, there has to be positive evidence for the structure resulting from transfer. This explains why the verb-final property of German verb phrases is never transferred into French, Italian, or English, for example. Monolingual children also have problems with the language material in question. This suggests that the input contains evidence for more than only one grammatical analysis. The quantitative difference between monolingual and bilingual language acquisition is interpreted as evidence in favor of cross-linguistic influence in bilingual language development. Transfer as viewed in the present paper thus is a predictable factor in bilingual language acquisition.

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PEER COMMENTARIES

# Comparing error frequencies in monolingual and bilingual acquisition

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Natascha Müller's article concerns the acquisition of word order in German subclauses by young bilingual children. Müller's basic argument as I understand it runs as follows:

(1) In the acquisition of word order in German subclauses some children make errors and others do not;
(2) there are some monolingual and some bilingual children who do not make errors;
(3) there are some monolingual and some bilingual children who do make errors, and the errors are qualitatively similar for monolingual and bilingual children;
(4) when children do make errors, they occur more frequently in bilingual than in monolingual children;
(5) the errors in both monolingual and bilingual children are due to the misprojection of a separate functional category;
(6) *in addition*, the errors in bilingual children (but not in monolingual children) are due to influence from the other language they are simultaneously acquiring. The reason for positing this is that bilingual children's errors are more frequent than monolingual children's errors.

Regarding point 3, it is obvious that the investigator must be absolutely certain that the subclause that is being analyzed is indeed non-target-like. This means that the child should not have heard similar constructions in the input (as Müller points out in her introduction, word order in adult German subclauses is highly variable; it is a pity that she presents no analysis of actual input to young language-learning children). Furthermore, transcription and coding should be unambiguous (an utterance such as Ivar's "sagen wir mal dass das is ein baum", for instance, is not a clear example of a "target-deviant subclause", as Müller suggests, but a possible case of juxtaposition of two co-ordinate clauses, where what has been transcribed as "dass" is actually a rendition of "das", which is then repeated).

My more basic comments will focus on points 4 and 6. Since frequency of occurrence of errors is such a central issue in Müller's argumentation it is surprising that there is no quantification present except for the statement that up to the age of 4;4, the bilingual child Ivar produced seven out of 167 target-like subordinate clauses. Without a strong empirical basis presenting appropriate quantitative analyses of different word orders in subclauses by both monolingual and bilingual children, the assumption that indeed bilingual children make more errors than monolingual children is premature. Such quantitative analyses will have to consider both the proportions of errors in function of the total number of subclauses as well as the absolute number of subclauses (there needs to be a sufficient "mass" for analyses to be viable). Furthermore, in comparing children to each other their overall levels of language development and ages must be taken into account, and similar size corpora should be taken as a basis for comparison.

In order for quantitative analyses to be possible, there must be quantifiable data. Unfortunately, there are few corpora available so far for either monolingual or bilingual children acquiring German that can function as a basis for analysis. Diary data cannot be used, since they suffer from severe sampling limitations and cannot capture the frequency of occurrence of particular phenomena. A statement such as that by Ronjat that his son Louis "dit très fréquemment wenn der Bubi ist lieb" (1913, p. 67) is uninterpretable in terms of just how frequently this utterance occurred. (Incidentally, Müller interprets Ronjat here as stating that Louis produced "many erroneous word patterns ... of the type *wenn der Bubi ist lieb*". As the quote from Ronjat shows, Ronjat only claims that the actual utterance *wenn der Bubi ist lieb* occurred frequently.) In trying to explain Louis' errors in *wenn der Bubi ist lieb* and three other utterances, Ronjat notes: "Cette faute n'est pas rare chez des enfants allemands monoglottes" (1913, p. 67), and he refers to the Sterns (Stern & Stern, 1907) to support his claim (it is ironic, therefore, that Müller uses Ronjat's data to help support her claim of quantitative difference between monolingual and bilingual children). Of course, just as Ronjat's bilingual data are not appropriate for addressing issues of frequency, neither are the Sterns' diary data concerning monolingual children.

Ronjat's Louis is one of the ten bilingual children whose data are taken into account in Müller's Table 2 to outline bilingual children's use of word orders in German subclauses. In order to address the frequency issue, Louis' data cannot be used since they are diary data. For the same reason, neither can Hildegard's (Leopold, 1970, c. 1939–49). Olivier and Jens (Kielhöfer and Jonekeit, 1983) are two more children who are listed in Müller's Table 2. As I have pointed out elsewhere (De Houwer 1990: 20), the book by Kielhöfer and Jonekeit gives no information on data collection, and since their book presents no quantitative analyses, the examples of utterances mentioned in their book cannot be used for a quantitative comparison. For the six remaining children, transcribed recordings are available. The source for the data on the two Italian-German girls Giulia and Lisa (Taeschner 1983, pp. 164–6) does not, however, give any quantitative information on subclause

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word order use at all, and only seven (!) actual utterances from the two children are listed. Hence a quantitative comparison with other children is impossible. This leaves the four French-German bilingual children, Ivar, Caroline, Pierre and Pascal, who were all studied in the DUFDE-project (see, e.g., Meisel, 1990). However, Müller notes in her footnote 29 that "Caroline has only very few subordinate clauses". I interpret this as meaning that there is insufficient data. This leaves Ivar, Pierre and Pascal – a total of three bilingual children for whom there are sufficient data available to allow a quantitative analysis of German word order use in subclauses (additional bilingual children acquiring German for whom there may be sufficient data available are Hannah and Adam – see Tracy 1994/5).

The empirical basis for comparisons with monolingual children concerning the extent to which bilingual children use target-like word orders in German subclauses is quite small, then, given the current paucity of appropriate bilingual data (there seem to be more data available for monolingual acquisition; these include Miller's (1979) very extensive (30,000 utterances!) corpus spanning the child Simone's ages 1;9 to 4;0 that was further analyzed by Behrens (1993) but is not mentioned in Müller's article). It is inappropriate at this time, then, to claim, as Müller does, that "Whereas the error types presented here have been observed in bilingual language development to a very large extent, they seem to represent rather an exception in monolingual language acquisition".

Assuming, however, that Müller's empirical claim above can be substantiated by the evidence, there is still the question of how such a quantitative difference between bilingual and monolingual children should be interpreted. First of all there is the possibility of influence from the actual input that children hear (see De Houwer, 1997, for an analysis of input frequency factors in the acquisition of past time verb morphology in a bilingual child). Until the possible role of this influence has been satisfactorily discounted, other explanations that are not in and of themselves testable, such as Müller's transfer explanation, will have to wait. Assuming that indeed some bilingual children's significantly more frequent use of erroneous word order patterns in comparison with some monolingual children is not relatable to specific input features, it needs to be explained why the frequency of a particular error should be influenced by transfer, that is, by knowledge of the other language, which is a qualitative phenomenon, rather than that the type of structure should be influenced. Also it should be clarified what type of frequency is deemed to be affected (relative or absolute). Furthermore, it should be explained why some bilingual children are influenced by the other language while other bilingual children growing up in similar circumstances are not.

In any learning system that has a strong memory component, results of previous learning may have an effect on subsequent learning. As such, a transfer explanation for some areas of bilingual first language acquisition is in principle quite plausible. Questions that can be raised in this regard are: to what extent can transfer override other factors such as regular input features? to what extent is behavior relatable to transfer susceptible to negative feedback? to what extent is the use of transfer related to individual learning styles? are there areas of language that are more susceptible to transfer than others? In order for such questions to be answerable, however, there has to be certainty that indeed particular observable phenomena are due to transfer. Müller's interpretation of specific bilingual processing hinges on a comparison to monolingual behavior. As I have argued elsewhere (De Houwer, 1994), though, (qualitative) comparisons between bilingual and monolingual acquisition are only a secondary way of settling issues of separate development or transfer, and unfortunately there will always remain cases that are ambiguous and that can be interpreted either way.[1] It is to Natascha Müller's merit that she has explicitly introduced the notion of quantity in a discussion that has so far been more qualitatively focused. Perhaps indeed quantitative analyses can provide the missing links.

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[1] It is not the case that I have stated that separate development is only possible when there is separate exposure to two languages, as Müller claims in her second section. Rather, I have claimed that when there is regular separate exposure to two languages, separate development takes place (De Houwer 1990, p. 339). Since then, it has become clear that separate development is also possible without separate exposure (De Houwer 1995, p. 240).

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# Transfer and language mode

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Natascha Müller's proposal to view transfer as a relief strategy used by bilingual learners to cope with problematic input is very interesting and has far-reaching consequences for theories of bilingual language acquisition. The author makes a strong case for the fact that bilingual children transfer parameter values from the language presenting unambiguous input to the other "puzzling language". In what follows, I will not question the main thrust of her argument. Rather I will return to the definitions that have been proposed for transfer in the literature and show that they are usually too broad. I will then propose that anyone interested in studying transfer must take into account the language mode the language learner or bilingual subject is in when being studied, and I will end by showing the consequences that this may have if it is not done. Natascha Müller's main argument is not affected by the language mode factor but the quantitative difference she finds between monolingual and bilingual children could be.

It is now accepted that the definitions of interference (transfer, transference) proposed by earlier researchers were too broad. For Weinreich, interferences correspond to instances of deviation from the norms of either language which occur in the speech of bilinguals as a result of their familiarity with more than one language. Haugen refers to interference as the overlapping of two languages, Mackey talks of the use of features belonging to one language while speaking or writing another, and for Clyne transference is the adoption of any elements or features from the other language (see Grosjean, 1982 (p. 299), for exact references). This view has been maintained in recent years as can be seen by Beatens Beardsmore's (1986) definition of interference as the observable feature of one code used within the context of the other. A direct result of this broad view is that the interferences observed in studies correspond to interferences but also often to borrowings and even code-switches.

It is my belief that we will never get to the bottom of this terminological problem, and that we will never isolate interferences from code-switches and borrowings in bilingual speech, if we do not take into account (and do not control for) the language mode bilinguals and language learners are in when they are being studied (i.e. observed, recorded, tested, etc.). Bilinguals in their everyday lives find themselves in various language modes that correspond to points on a monolingual-bilingual mode continuum (Grosjean, 1994, 1997). A mode is a state of activation of the bilingual's languages and language processing mechanisms. At one end of the continuum, bilinguals are in a totally monolingual language mode in that they are interacting only with (or listening only to) monolinguals of one – or the other – of the languages they know. One language is active and the other is deactivated. At the other end of the continuum, bilinguals find themselves in a bilingual language mode in that they are communicating with (or listening to) bilinguals who share their two (or more) languages and with whom language mixing may take place (i.e. code-switching and borrowing). These are end points, but intermediary points exist and depend on such factors as interlocutor, situation, content of discourse and function of the interaction.

At the bilingual end of the continuum, both languages are active but at any one moment in time one language is usually less active than the other as it is not currently the language of communication. This is the kind of mode bilinguals find themselves in when they are interacting with other bilinguals who share their two (or more) languages and with whom they feel comfortable mixing languages (such as bilingual children among themselves or with their bilingual caretakers, etc.). They usually first adopt a base language to use together and the other language, the guest language, is available in case it is needed in the form of code-switches and borrowings. A code-switch is a complete shift to the other language for a word, a phrase or a sentence whereas a borrowing is a word or phrase taken from the less activated language and adapted into the base language. Idiosyncratic (nonce) borrowings can involve both the form and the content of a word (loanwords) or simply the content (loanshifts). It is important to note in relation to the topic at hand that Haugen (1969) distinguishes between two types of loanshifts: extensions (semantic loans) and creations. The latter involve rearranging words (or morphemes) in the base language so that they correspond to the pattern of the other language. Of course, a change of topic or of situation may lead to a change of base language but not necessarily of language mode. At the other end of the continuum, the monolingual language mode, one language is totally active whereas the other language is deactivated. This mode arises when the person being spoken to is monolingual and/or the topic, the situation or the purpose of interaction require that only one language be spoken to the exclusion of the other(s). (For example, when a bilingual child is speaking to a monolingual adult such as a grandparent, teacher, babysitter, etc.). Evidence for the language mode continuum concept has been found with adults in experimental settings (Grosjean, 1997) and in naturalistic settings (Treffers-Daller, 1998) as well as with children interacting with their parents (Lanza, 1992).

It is important to know the language mode bilinguals are in when we examine their interferences. These are speaker-specific (an "individual process" as Müller writes) and they are either static or dynamic. Static interferences reflect permanent (or relatively permanent) traces of one

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language on the other, whereas dynamic interferences are the ephemeral intrusions of the other deactivated language. Whereas in a bilingual language mode, all bilingual language phenomena can occur (interferences, code-switches, borrowings of various types, etc.) this is not the case in a monolingual language mode. Here code-switches and borrowings are either nonexistent or are usually kept to a strict minimum so as to ensure adequate communication. Thus, the interferences that are produced can stand out more clearly (a bit like the landscape emerging when the fog lifts) and they are not mistaken as easily for other bilingual phenomena that can be very similar in appearance. When interferences occur in the bilingual mode, which they also do, they are very difficult to separate from other forms of language mixing, especially borrowings. What might appear to be an interference could also be a guest element or structure produced by the speaker who is aware that his or her interlocutor knows the other language (to some extent at least). For example, although "baving" (from the French verb "baver" (to dribble)), produced in an English monolingual speech mode, is most probably the result of the deactivated language "intruding" into the language being spoken (an interference, therefore), in a bilingual speech mode it is either an interference or the result of normal access of a word in the less activated lexicon and its integration into the base language (a borrowing). At the phrase level, a constituent in the base language whose structure or meaning combination is a result of language contact may either be an interference or a loanshift creation in Haugen's terminology.

It is rare that researchers working on interferences (see Odlin, 1989, for a recent review) control the language mode bilingual subjects are in when they obtain language samples. This has two unfortunate consequences. The first is that what is classified as an interference may in fact be a borrowing of some kind (or even a code-switch) produced in a bilingual language mode. Several researchers interested in language mixing in children (e.g. Meisel, 1989; Genesee, 1989; Goodz, 1989) have noted that when recordings are made, children are usually in a bilingual mode. The caretakers (and researchers) are often bilingual themselves and hence set up the stage, however involuntarily, for mixed language. This is the case for many of the bilingual children mentioned by Müller (Louis, Ivar, Hildegard, Lisa, etc.) and it is therefore difficult to classify all their instances of language contact as interferences when they might be examples of normal language mixing. Admittedly, the kind of target-deviant patterns discussed by Müller do look like interferences but some could perhaps also be loanshift creations triggered by the bilingual speaking mode the children were in. The second consequence relates to the quantitative issue Müller raises. She states that there is no qualitative difference between the error types produced by bilingual and monolingual children but that there is a quantitative difference. Bilingual children use these deviant patterns more often. The questions become: Could this quantitative difference be due to the bilingual language mode most of these children were in? Could it be that when two languages are activated, as they are in the bilingual mode, there is a greater tendency for the language not being used (the guest language) to influence the use of a particular structure in the base language? Would the quantitative difference be reduced, or sometimes even done away with, if subjects were put in a monolingual mode? The hypothesis I am proposing is that while, as Natascha Müller rightly explains, the quantitative difference between monolinguals and bilinguals is due to the second language which is in contact with German, it may also be due to the bilingual language mode children were in when being recorded. It would be interesting to test this hypothesis by studying interferences produced by the same kind of children in a truly monolingual mode. This can be done if researchers working with bilingual children manipulate the language mode they are in more systematically (as in Lanza, 1992). For example, in addition to interacting in a bilingual language mode with the bilingual researcher, children could also interact at different times with research assistants who are truly monolingual, at least in the majority language (minority language monolinguals are probably harder to find). Any one of a number of different approaches could be used as long as they guarantee spontaneous speech in the children's various language modes. (For a discussion of language mode manipulation in various settings and with varying populations, see Grosjean, 1989, 1998.)

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# Evidence for transfer in bilingual children?

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The paper by Natascha Müller follows the new way of studying bilingual first language acquisition which has been advocated in the last few years by several researchers (Döpke, 1996,1997; Gawlitzek-Maiwald & Tracy, 1996; Hulk & Van der Linden, 1996; Hulk, 1997). In this new approach, while it is taken as an established fact that bilingual children are capable of early language differentiation, at the same time a lot of attention is given to cross-linguistic influence as an important characteristic of bilingual first language acquisition. We will discuss the nature of differentiation and transfer here as presented by Müller's paper and the way we see it ourselves. We will illustrate our position with examples from the French-Dutch bilingual child we have been studying for some time.

In the last decade most syntactic studies of bilingual language acquisition have stressed the fact that bilingual children are able to differentiate between their two languages from very early on. Investigations into large corpora of bilingual children's utterances such as the DUFDE project (contributions in Meisel 1990, 1994) have shown that children differentiate between their two languages both at the lexical and at the syntactic level. The same has been argued for by De Houwer (1990) for Dutch/English bilingual children. Lanza (1992) showed that formal aspects of language mixing by bilingual two-year-olds are not a sign of the child's lack of language differentiation, but indicate instead that the children do differentiate their language use in a contextually sensitive way. Most of these papers aim at denying the earlier hypothesis that children start off their language acquisition with one unitary language system for both languages (Taeschner, 1983; Vihman, 1985). However, in arguing – convincingly – against the idea that bilingual children first have a unitary language system, many of these linguists tend to overlook examples of cross-linguistic influence. They sometimes even deny that there is any influence from one language on the other and state that bilingual language acquisition is the same as monolingual acquisition: in Müller et al. (1996), the *bilingual* child Ivar is taken to illustrate the *monolingual* acquisition of the French clitics system. Apparent counter-evidence against this claim seems to be overlooked or not taken seriously by these authors. Schlyter and Hakansson (1994) claim that in their study of French/Swedish bilinguals they do not find any signs of transfer of word order from one language into the other and the same claims have been made by Meisel (1989) and Parodi (1990) for the reciprocal influence of French and German on children in the DUFDE project. Recently, Paradis and Genesee (1996) claimed that they did not find any influence of one language on the other in French/English bilingual children. They conclude that these children show no evidence at all of transfer. Interestingly, however, they do mention some puzzling data which at first sight look like transfer data, but which they qualify as follows: "these aberrant examples are most likely performance errors". Although it may be true that at least part of these data are performance errors, this does not mean that there is no need to explain them in a more satisfactory way. Why do these bilinguals make precisely these errors, that seem to reflect characteristics of their other language?

Some recent, partly unpublished studies of the syntactic development of bilingual children (Döpke, 1996,1997; Gawlitzek-Maiwald and Tracy, 1996; Hulk & Van der Linden, 1996; Hulk, 1997) have revived the interest in such "mixed" utterances, which are attested for different language pairs. Having established the fact that bilingual children are able to differentiate between their two languages at a very early age, we are now at the point where we can address the question of cross-linguistic influence in a more precise way. This is what Müller attempts to do in her paper. We will show that our position is different from hers in that we do no think that bilingual children are subject to *direct* transfer from one language into the other. But we do think that *indirect* influence from one language on the other plays a role, especially in those cases where the input in one language is ambiguous or presents conflicting evidence to the child.

Müller seems to equate the notion of transfer with that commonly used in studies in second language acquisition. However, in those studies the subjects have already instantiated a first language from which they can transfer elements or parameter settings into the second language. In bilingual first language acquisition, there is no "first language" to build on, so the nature of "transfer" is necessarily different. We prefer not to use the term transfer at all, but rather cross-linguistic influence. Indeed, in studying bilingual language acquisition we witness the emergence of grammars of two languages at the moment of creation, when they are in close contact with each other. As suggested already by MacWhinney (1987), the bilingual child may attempt to make short cuts and allow strategies from one language to be used in the other one. Cues may be stronger in one language than the other, leading to facilitation of acquisition. The acquired language facts may then

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be adopted in the other language as well. We especially expect such "short cuts" when the child has to cope with problematic input, which is ambiguous and contains evidence for more than one grammatical analysis. Indeed, the bilingual child is exposed to a much wider range of syntactic possibilities than a monolingual child, and it is offered structural possibilities which monolinguals do not have. At the same time however, the input of each of the languages separately is probably smaller for the bilingual child than for the monolingual child, which makes the cues for each individual language less salient.

Müller raises the question "what is transferred"?, which we will reformulate as: "when does cross-linguistic influence appear in the child's language development"? Müller adopts the hypothesis that there is transfer of parametric values or feature specifications. Although we agree with her that this is a plausible hypothesis, we have problems with the way in which she elaborates it. Müller observes that the bilingual children she has studied sometimes use both correct and incorrect word orders at the same point in their development. In other words these children seem to hesitate about the right value of a parameter. This is called the "pendulum effect" by Müller. We found a similar effect in the French-Dutch bilingual girl Anouk (see Hulk & Van der Linden, 1996; Hulk, 1997): Anouk seems to have problems with the head parameter in French since she produces utterances with both V-XP and XP-V orders. The former corresponds to the French setting of the head parameter, the latter to the Dutch one.

| | | |
|---|---|---|
| (1) penche tête, non<br>"bow head no" | An. 2.4.23 | $V_fONeg$ |
| (2) papa cheche Anouk<br>"daddy get Anouk" | An. 2.6.11 | $SV_fO$ |
| (3) atejer parti<br>"(to) studio left" | An 2.4.17 | $XPV_i$ |
| (4) Anouk papa dessine<br>"Anouk daddy draws" | An 2.4.23 | $SOV_f$ |

Müller advances the hypothesis that pendulum effects are the result of transfer and are restricted to phenomena involving the setting of what she calls **sub**parameters. The notion of subparameter however is not generally accepted in linguistic theory. It is not even clear what exactly a subparameter is. Müller does not give a general characterization, but just illustrates the notion by giving an example. She mentions that the special status of German complementizers (they are functional elements associated with finiteness) could be conceived of as a subparameter of the global +/- V2 parameter: in some V2 languages, such as German, complementizers do not instantiate a separate functional category, in others, such as French, they do. Müller hypothesizes that there is no triggering data for this kind of subparameter and therefore the (bilingual) children may hesitate as to the status of complementizers in German, whereas they do not hesitate as to whether German is V2 or not (the global parameter). Moreover, Müller makes an even stronger claim: transfer in bilingual individuals could be restricted to subparameters. However, if we look at the "pendulum effect" in Anouk's utterances given above, we do not know of any subparameter that could play a role. On the contrary, it seems to be the setting of the "global" head parameter that is causing problems for the child. Therefore it is unclear what Müller's explanation of such cross-linguistic influence could be. Moreover, before we can address the question whether Anouk's French OV-utterances are an illustration of transfer from Dutch, we have to consider acquisition data of monolingual French children to find out if they ever produce XP-V orders. Interestingly, as we have shown elsewhere, this is indeed the case (examples from Ferdinand, 1996):

| | |
|---|---|
| (5) couteau met<br>"knife put" | NAT 2.2.2 |
| (6) un pomme de terre donne<br>"a potato give" | GRE 2.1.25 |

These utterances have been analysed as involving fronting of a focalized constituent in the stage of language development when null subject (clitics) are still the rule. We have argued that the XP-V orders produced by Anouk should also be analyzed as focalizations. Kail (1989), quoting McWhinney and Bates, observes in a completely different situation that young children in several languages place new information at the beginning of utterances, followed by old or less focal elements of meaning, contrary to adults who tend to start their sentences with old or topical information. Psycholinguistically speaking then, an analysis of the XP-V orders as focalizations is not an implausible one.

The fact that these focalizations are more frequent in Anouk's French than in the French of monolingual children reflects, we think, the *indirect* influence of Dutch. Not only do monolingual Dutch children use these same word orders, in adult Dutch too, as a consequence of the V2 property of the language, we find clauses with fronted objects:

(7) Zuurkool lust ik niet
"sauerkraut like I not"

Therefore, we have suggested that these XP-V orders are not an example of transfer of basic Dutch OV-orders nor of mis-setting of a parametric value on the basis of the Dutch input. They represent an example of a general tendency in child language to start the sentence with new information – a tendency which is also present in monolingual French children. Their frequency may be explained by the indirect input influence of adult Dutch, where fronting of XPs is a general syntactic phenomenon.

Interestingly, Müller also mentions that monolingual German children have problems with the acquisition of word order in subordinate clauses and produce (incorrect) utterances similar to the ones produced by the bilingual children. Müller relates this to the fact that the input is ambiguous and therefore presents conflicting evidence. Word order in the German subordinate clause does indeed present a lot of conflicting evidence to the child: the input offers utterances which lead to different possible analyses of these clauses. It is in this context that uncertainty is greatest in the child and that cross-linguistic influence may

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occur. This corresponds exactly to what we have found in the utterances of the French-Dutch bilingual child Anouk, not only as far as XP-V orders are concerned but also in the production of French object pronouns. Anouk's production of object pronouns seems again to reflect the influence of Dutch (Hulk, 1997). At first, until 2.7.5, object clitics are rare, and always situated in front of an infinitive:

(8) faut **leur** donner de l'eau An 3.1.04
"must them give water"

At age 3.3.17 Anouk produces her first object clitics in preverbal position of a finite verb:

(9) si je **le** mets là An 3.3.17
"if I it put there"
(10) je **la** tiens An 3.3.17
"I it hold"

Strikingly, only one week later Anouk makes her first "placement error" with an object clitic:

(11) * je prends **la** An 3.3.23
"I take her"
(correct: je **la** prends)

The errors represent about 10 per cent of all the utterances with object clitics for the period of recordings; in other words it is not a very frequent phenomenon, but is certainly not negligible. Contrary to what we have seen in the section about V-XP/XP-V orders, the misplacement of object clitics has not been found in the data of monolingual French children. However, Jakubowicz et al. (1997) found that French speaking children with developmental dysphasia have problems with the acquisition of object pronouns. Moreover, as we have shown elsewhere (Hulk 1997), these errors look very much like errors made by (adult) Dutch learners of L2 French. Is this a clear case of transfer then? Again we have to be careful, and ask ourselves what exactly these errors tell us. It is important to note that the (adult) French data are not always unambiguous as for the status of the object pronouns: some constructions allow both an analysis as clitics and as weak pronouns. This is true among other things for constructions involving a modal verb and an infinitive, where the object clitic in French figures in between the two verbs:

(12) Jean peut le faire
"Jean can it do"

Exactly the same (superficial) order is found in Dutch, which has weak object pronouns (and no clitics):

(13) Jan kan het doen
"Jan can it do"

As has been observed in the literature on the L2 acquisition of French (see e.g. Schwartz, 1996), the L2–learners are confronted with conflicting evidence as to the exact feature composition of such pronouns.

Let us consider the Dutch/French bilingual child again. The French evidence she gets is not unambiguous. However, we know from the acquisition of monolingual French children that this does not have to be a problem. But the bilingual child is in a different situation – she gets input from her two languages, French and Dutch. Not only does the Dutch evidence clearly suggest a weak pronoun analysis, it also partly overlaps with the French evidence, thus creating more conflicts for the exact analysis of French. The bilingual child will be misled more easily than the monolingual child, because on the one hand, she gets less non-ambiguous (only French) input and on the other hand she gets more ambiguous, conflicting evidence due to the input of her other language, Dutch. Again we do not want to go into the exact analysis of the Dutch and French pronoun system. We only want to suggest that in this case the child appears to be confronted with ambiguous input and therefore she uses what Müller calls a "relief strategy", which in this case is probably related to the acquisition of the exact feature composition of the elements in question.

We have argued that we agree with Müller that bilingual children may use a relief strategy in order to cope with ambiguous input. However we do not agree with her as she states that this relief strategy (always) takes the form of (pure) transfer and that this is expected (only) in the case of phenomena involving subparameters, for which she claims there are no triggers. We have shown two different cases of cross-linguistic influence. In both cases it is the *indirect* influence of Dutch that makes the child overgeneralize a pattern that is already present in French. In the case of XP-V orders we have argued that it is related with a focalization strategy. In the case of object pronoun acquisition it is the feature composition of the pronouns in question which causes the problems. Although these two phenomena are very similar to the one discussed by Müller for Ivar, in these cases no clear subparameters are at stake. We do not think either that these are phenomena for which there are no triggers. On the contrary, we crucially assume that in these cases the children have too many triggers. Or in other words that the two languages present conflicting evidence and therefore conflicting cues or triggers for the acquisition of the phenomena involved.

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# Cross-linguistic influence, input and the young bilingual child

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The field of bilingual first language acquisition has focused on several important and interrelated issues: whether or not the young child acquiring two languages simultaneously differentiates his or her two languages from the onset of acquisition, what role the input plays in the acquisition of two languages, and whether the path of acquisition is similar to that of monolingual peers (see De Houwer, 1990). As a member of the DUFDE team, Natascha Müller has in previous work argued forcefully and convincingly for the bilingual child's separate development of his or her two languages, and hence how language-acquiring bilinguals behave like monolinguals. In her keynote article, Müller invokes the notion of transfer, a well-known term from research into second language acquisition, and proposes to consider transfer from the perspective of the input to which the young bilingual child is exposed. When this input is ambiguous, so that is there is variation in the input regarding one of the languages, the child will resort to transfer from the other language as a so-called relief strategy. In the following, I address the issue of cross-linguistic influence in language development and highlight the implications Müller's proposals may have for the field of bilingual first language acquisition. In conclusion I will relate these issues to the complexity of the notion of input in early bilingualism.

The incorporation of elements from a stronger or dominant language has been reported in the bilingual first language acquisition literature (e.g. Lanza, 1993; Schlyter, 1993; Gawlitzek-Maiwald & Tracy, 1996). Transfer in the form of dominance, however, apparently does not capture all the regularities of transfer specifically within the domain of the acquisition of subordinate clauses in German, as Müller argues, when that language is acquired simultaneously with another language such as English, French, or Italian, which lacks equivalent ambiguity. Hence a child acquiring both German and English, with German as a dominant language, may nonetheless employ transfer from English as a relief strategy in German. The strategy, or resultant structures, employed by the bilingual children in Müller's study has also been documented in monolingual children acquiring German; however, the strategy is here construed as a bilingual strategy, a trouble-shooter for ambiguous input.

It is important to stress, as Müller does, that despite the claim that there is bi-directional or cross-linguistic influence in the young child's language development, there is ample evidence that the child is on the whole proceeding along two language-specific paths, similar to monolingual peers. Müller's proposal, however, highlights the issue that the two languages may potentially influence each other since they are in contact in acquisition. How much contact and influence there is will inevitably depend upon numerous factors, and hence there will be individual variation. In Müller's article, transfer is in fact argued to be an individual process.

Attention to cross-linguistic structures and individual variation is a welcome dimension to studies of bilingual first language acquisition which have in the past decade stressed how the bilingual child develops both languages separately. Such a stress on separate development has been important and understandable given the former influence of the fusion, or unitary language system, hypothesis (see Genesee, 1989). Now we can look at how young bilingual children actually do compare and contrast their two languages although they are developing them as two separate systems (see also Döpke, in press). The two systems need not be conceptualized as impermeable. That is, the overall theoretical framework of separate development is not threatened despite the unveiling of such cross-linguistic language contact which is quite interesting theoretically albeit minimal in proportion. Although this strategy of transfer, or rather the resulting structures, used by bilingual children is also employed by monolinguals, Müller appeals to frequency of use as evidence for it as a bilingual strategy. Bilingual children are claimed "to proceed more frequently along 'wrong paths' than monolingual children do and they take much more time to 'correct the error'" (p. 00). However, to substantiate the claim of greater frequency of use among bilingual children, more studies will be needed, since some bilingual children in fact do seem to proceed without difficulty with the structures in question. Although the frequency argument as given in Müller's paper is very weak, it is nonetheless important to pursue investigation of the theoretical claims made about cross-linguistic influence.

Evidence for cross-linguistic influence and structures has been demonstrated in older bilingual children (Lanza, forthcoming), in bilingual adults (Klein, 1980; Hernandez, Bates & Avila, 1994), as well as in language contact situations across time in bilingual communities, which result in language restructuring (Talmy, 1982; Grosjean & Py, 1992). For example, a Norwegian–English bilingual child showed clear indications of dominance in Norwegian, yet she employed some strategies in her temporal and aspectual marking in Norwegian, which were more in line with her non-dominant language English. Furthermore, the cross-linguistic strategies employed by this bilingual child in the domain of aspectual marking were of the same type employed in the diachronic change of one language in contact with another (see Lanza, forthcoming, for a discussion). Examining the cognitive and pragmatic motivations for these various types of language contact may help further our understanding of the cognitive and linguistic

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processing of the bilingual individual, in both acquisition and use, and how this may affect language change and restructuring over time. There is a need to envisage bilingual first language acquisition in relation to other language contact situations.

Another important aspect of Müller's study is the incorporation of the notion of input in an explanation for the bilingual children's grammatical development. Input is, however, defined as purported variation existent in the target language. However, input can also be construed as the actual variable use of the available variation in the target language, and a focus on this would necessitate a study of the actual input the individual children receive in interaction. What exactly is the child's input? In the case of the bilingual child, this input has both methodological and theoretical implications for the child data collected and to be analyzed. There is reason to believe that many of the interactions in which the bilingual children in Müller's study were involved were actually bilingual in character (see Pujol Berché, 1993). Although adult interlocutors may only use one language with the child, an indication of comprehension of the other language may contribute to a bilingual context (Lanza, 1997), and a bilingual language mode (Grosjean, 1998). In such a situation either language could feasibly serve as the matrix language of an utterance, including the syntactic structure of that utterance. This only underscores the necessity of taking into account contextual parameters of data, that is, the extent to which an interaction is more monolingual or bilingual in nature, even when undertaking a purely grammatical analysis.

Ochs and Schieffelin (1995) propose a language socialization perspective to language acquisition which they hold renders a more enriched model of grammatical development in that it provides insights into the sociocultural parameters that influence children's use of grammatical forms. In the case of the bilingual child such a perspective pays attention to the variability of language use in the actual input, be it within a monolingual or bilingual context. A more contextualized notion of input may shed light on the frequency issue in regard to the individual bilingual child's use of the transfer strategy. In sum, Müller's keynote article highlights important dimensions and indicates new directions in the field of bilingual first language acquisition which it is to be hoped will be pursued in future studies of early bilingualism.

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# Directionality in transfer?

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Natascha Müller discusses a question which in recent years – after a period of focus on cross-linguistic principles of language acquisition – has regained its position as a current topic, namely transfer, and here in bilingual children. One of her points is that for transfer to take place, the transferred construction must have some correspondence in the target language, a position similar to the "transfer to somewhere" principle often advocated in the L2 acquisition literature (cf. Gass & Selinker, 1983). The specific structure studied is the lack of Verb-End in the German of a bilingual German-French child.

Müller discusses to what extent transfer from French can be responsible for this non-use of Verb-End word order in the child's German subordinate clauses. She makes some claims (see her Conclusion) for this child, the generality of which may be questioned.

1a. "Once one of the languages leaves open the possibility for more than one grammatical analysis, the bilingual individual may, as a relief strategy, use parts of the analysis of the second language . . . "

1b. " . . . there has to be positive evidence for the structure resulting from transfer."

2. What is transferred is neither the surface structure, nor the entire D-structure, but a sub-parameter which has as a result that "V2 is independent of whether the clause is introduced by a subordinating conjunction or not."

To what extent can these principles be taken as generally valid? I will discuss them partly with reference to a Swedish-French corpus (see Schlyter & Håkansson, 1994).

*Principle 1a.* If one generalizes (1a), this would among other things predict some cases of VS inversion in French in a German-French or Swedish-French bilingual, since this is the standard interrogative structure in German/Swedish, and also exists in French, even if rare and restricted to subject clitics. Such a transfer, however, is extremely rare: in Müller's corpus there is one occurrence. In the Swedish-French corpus it never occurs, despite the large number of questions. The children always use non-inverted questions, e.g.:

(1) où il est? où ils sont?

*Principle 1b.* If (1b) is to be generalized, then the frequent V3 constructions in Swedish-French bilinguals are problematic (see Schlyter & Håkansson, 1994) since the structure does not exist in the target language. Structures of the type ADV-S-Vfin-X, i.e. exact copies of the very typical French pattern, are very frequent in Swedish as the weaker language of these bilinguals (see Schlyter & Håkansson, 1994). For example:

(2) här den måste sitta (correct: "här måste den sitta")
"here it must sit"

Such structures do not exist in Swedish, but are completely excluded. In these cases, either transfer occurs without the existence of such structures in the input language, or it is not a question of transfer.

In both cases, a kind of directionality seems to play an important role, a fact which is not discussed by Müller. If there is transfer, it occurs in these cases from SV to SV, but not from VS to VS. In other words, a (X)SV(Y) seems to be dominant in many bilingual situations over a (X)VS(Y) structure. This is compatible with a number of works by Håkansson, and with the fact that the Swedish SLI children studied by Håkansson do not have VS but the incorrect SV word order to a great extent (see Håkansson & Nettelbladt, 1996). This means that theories of markedness of different kinds should probably also be exploited in order to account for transfer.

*Principle 2.* The proposal that neither the surface structure, nor the entire D-structure, is transferred, but only a part of a parameter, seems to be a very interesting path for further research.

But here as well one may pose the question of directionality. If the rule is formulated such that the child does not distinguish between +/-roots, couldn't the change a priori have been the other way around? The fact that the phenomenon occurs in subordinates resembles the difficulty in adult L2 acquisition of German (and Swedish) of canceling inversion once it has been acquired in main clauses. This difficulty is accounted for in Pienemann's Processability Theory (Pienemann, 1998) by processing difficulties. The phenomenon also resembles historical development, for instance in Yiddish, where V2 still exists in main clauses but Verb-End has disappeared in subordinates. Does the bilingual child Ivar precede a coming development in German, that is, along lines similar to what has already happened in Swedish? As Müller shows, this lack of Verb-End also exists in monolingual German children but to a lesser extent. A study of possible parallels would be interesting.

Even the above-cited case of the non-transfer of V2 to French could be related to historical development. In medieval French, V2 (or something similar) was standard, but was gradually replaced by V3, etc., and is today a disappearing structure.

An alternative hypothesis of transfer (or cross-linguistic influence) in bilingual situations could therefore be to say that transfer of a structure occurs only when the structure is in line with the general historical development of the target language, and not if it is a historically disappearing structure. Such a hypothesis would be compatible with many language historians' observations that historical changes occur most rapidly in regions where many people

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and languages meet, and consequently there is a great deal of bilingualism.

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# Transfer versus coexistent systems

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Compared with the wealth of investigations on monolingual language acquisition, research on early bilingualism still has some catching up to do. Papers such as the one by Natascha Müller show us what may be gained if results from both areas are integrated within one theoretical framework, in this case current generative theory.

There can be no question that I am sympathetic to both the theoretical framework and the hypothesis of the paper that bilingual children pool their resources and may engage in some transfer of features of one language to the other in order to fill temporary lexical and structural gaps; after all, the notion of "bilingual bootstrapping", which we proposed in Gawlitzek-Maiwald and Tracy (1996), is of the same nature.

I would also agree that the problems shared by the bilingual Ivar and the monolingual Benny are due to what Müller calls "ambiguity" in the input. This is just a special case of the chronic underdetermination of the theory by the data which puzzles the linguist as well, hence our disagreement about descriptively adequate target grammars (for German see the discussion in Fritzenschaft et al., 1990; Gawlitzek-Maiwald et al., 1992; Tracy, 1995).

At the same time, however, it seems to me that the similarity between Ivar and Benny weakens the transfer hypothesis, a point which Müller stresses herself when she concedes that "transfer cannot be the whole story". Indeed, if monolinguals come up with the same range of structures as bilinguals, we should probably think of alternative explanations. I should think that one attractive option – to which I will turn shortly – is right there in Müller's paper as well.

In any case, the type of transfer the author has in mind needs clarification. She writes in the introduction that "grammars which result from transfer of grammatical features are compatible with natural languages to which the child has not been exposed". But does it actually make sense to talk about transfer if the outcome clearly goes beyond the supposed source? In the case at hand, the "other" language cannot very well be held responsible for the range of XVS and VSX patterns in subordinate clauses.

Do we need transfer, then? After all, should not the principles of Universal Grammar be sufficient to create the spectrum of structural formats observed? What is striking is that the children's sentence patterns can be traced back to a set of simple syntactic choices, apart from the problem of assigning ambiguous individual lexical items to word classes. They stay within what is possible "in principle", as is also stressed by the author.

All children are faced with the task of figuring out how many structural layers are needed and what evidence to rely on. While we have long accepted the idea that children may start with a subset of the adult tree, we have more problems accepting the idea that some children – and Benny, as we have claimed in Fritzenschaft et al. (1990) and Gawlitzek-Maiwald et al. (1992) would be one of them – temporarily create layers of structure which they will eventually have to eliminate. This structural overgeneration could be due to the very procedure Natascha Müller envisions for Ivar's gradual mastery of the target-like subordinate clause, where the child needs to figure out which head projects what type of complement.

Müller's contribution certainly encourages us to look for further opportunities to close the gap between different acquisition types and to explore which features are "robust" enough to manifest themselves in any acquisition process. What should definitely be explored, for instance, is the hypothesis alluded to in the paper that monolinguals may also rely on two grammars in transitional phases and should, hence, be considered bilingual (Roeper, 1997).

I believe that we could even go further than that: as I have argued (Tracy, 1991, 1995), so-called monolinguals appear actually to start out with several coexisting systems. Thus they could be seen as behaving like "ideal" bilinguals, reluctant to "fuse" structures which they initially cannot integrate within one overall derivational system. For German children these systems typically consist of a restricted set of V2 expressions on the one hand and VE formats on the other (see also Kaltenbacher, 1990). Initially these systems cannot be related by one single grammar, but they eventually converge.

In addition, we could attempt to relate what we know about specific language impairment to the same overall picture: here we encounter children who are indeed very "monolingual" in that they focus on a small set of syntactic formats (for instance the VE pattern typical for German-speaking dysphasic children), thus avoiding the conflict which, in the case of unimpaired monolingual and bilingual acquisition, nudges the child along to explore new structural options.

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# Ambiguity and transfer in bilingual first language acquisition?

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Natascha Müller presents a very interesting analysis of the structure of the German subordinate clause in bilingual first language acquisition. The main issue in this paper is to explain the fact that some bilingual children – but not all of them – display non-target language structures in German subordinate clauses. That is, the finite verb does not appear in the final position of the subordinate clause. These non-target structures can in part be explained by transfer, but this cannot be the whole story, because some monolingual children produce these structures as well. Bilingual children, though, appear to have problems with the German subordinate clause more frequently than monolingual children. Interestingly, acquiring the target structures is a slow process for children who produce non-target structures. Ivar, the French-German child Müller discusses in most detail, for example, needs two years to acquire the correct position of the finite verb in German subordinate clauses. Müller argues that the problems arise because the input children receive is ambiguous: the finite verb does not always appear in the finite position in German subordinate clauses in adult speech. The ambiguity of this situation opens the way to transfer. In their uncertainty, the children turn to their other language as a relief strategy.

Müller combines an in-depth theoretical analysis with the concept of transfer, and shows under which circumstances transfer is likely to occur. As a matter of fact, there is growing evidence that transfer plays an important role as a discovery procedure in the acquisition of syntax. Gawlitzek-Mailand and Tracy (1996, 903) have suggested that some sort of bilingual bootstrapping may take place in that "something that has been acquired in language A fulfills a booster function for language B". In the case studied by Gawlitzek-Maiwald and Tracy, not only structures were transferred, but also the words filling those structures. Müller's article gives further support to a new perspective on transfer in which transfer is no longer seen as a negative factor, impeding the normal development of a language, but on the contrary, as a strategy which furthers language development (see also Hulk & Van der Linden, 1996).

The situation Müller describes is very interesting from a theoretical point of view for different reasons. In the first place, Müller shows how important (un)ambiguous input is in parameter setting. As the argumentation of the article relies heavily on the ambiguity of the input, it would have been important to take analyses of input to children into account, to corroborate the author's assumption that the input is actually ambiguous. In the present article the author does not give sufficiently convincing evidence that the structure of the German subordinate clause is ambiguous. As a matter of fact, there are many cues that the finite verb occurs in final position in the German subordinate clause. In embedded clauses beginning with the complementizer *daß* (that), for example, the finite verb always appears in final position (see (1)).

(1a) Ich weiß, daß die Nebensätze sehr kompliziert sind
I know that the subordinate clauses very komplex are

(1b) *Ich weiß, daß die Nebensätze sind sehr kompliziert
I know that the subordinate clauses are very complex

It is possible to omit the complementizer, and then the structure under (1b) becomes possible: (1c).

(1c) Ich weiß, die Nebensätze sind sehr kompliziert
I know the subordinate clauses are very complex

The author does not discuss the possibility that the two consecutive clauses in (1c) are two simple main clauses or that "ich weiß" (I know) is a kind of tag or discourse marker, such as "natürlich" (naturally), followed by a main clause. If we take as an example a sentence where the first clause cannot be considered as a tag or discourse marker, such as (2a) and (2b), it becomes very likely that we are dealing with two consecutive main clauses in (2b), because of the obligatory pause.

(2a) Das sind Kräuter, die in meinem Garten wachsen
These are herbs which in my garden grow

(2b) Das sind Kräuter, (pause) die wachsen in meinem Garten
These are herbs, which grow in my garden

Intonation patterns seem to support an analysis of sentence (2a) as forming one sentence, whereas (2b) represents a sequence of two main clauses. In (2b) there is a falling intonation contour at the end of the first clause, just as one would expect at the end of any sentence expressing a statement. In (2a) this falling intonation does not occur, and is not even possible, according to native speakers in my environment. This issue is important, because it means that monolingual and bilingual children have an unambiguous cue in the intonation pattern of the sentence: if there is *no* falling intonation contour at the end of the first clause, the next clause is a dependent clause, and thus the finite verb occurs at the end of the embedded clause.

The author does not refer to the literature about the

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acquisition of German as a second language, which would have been interesting because the acquisition of verb placement and the likelihood of transfer as a source of errors has been studied intensively in the 1980s. It has been well known since the early studies of the acquisition of German as a second language (Klein and Dittmar 1979; Clahsen, Meisel & Pienemann 1983; Keim 1984) that the acquisition of the position of the verb in German subordinate clauses is particularly problematic. According to Clahsen, Meisel and Pienemann (1983) the acquisition of the position of the verb in subordinate clauses is the last step in the acquisition of a series of syntactic constructions in German as a second language. The problems with the subordinate clause are not only attested for speakers with a Romance background, but also for those with a Turkish background, who are familiar with verbs in final position in embeddings. This makes it perhaps less likely that transfer is the only factor in the problems encountered in bilingual first language acquisition. This is even more so because the author produces evidence that even monolingual children may have problems with word order in the subordinate clause. Clearly, transfer cannot play a role in monolingual acquisition.

The author takes the point of view that it has been "convincingly argued that the development of a bilingual child proceeds along two language-specific paths." Although this position clearly does not exclude the possibility of transfer, it does become problematic when there is evidence for a lot of transfer: in that case the borderline between the two languages can become blurred. It is interesting in this respect to compare the tree structures given for adult German (Figure 1) and adult French (Figure 2) with that representing German phrase structure in Ivar (Figure 3). Clearly, Ivar's German phrase structure is almost the same as the *French* phrase structure tree (except for the OV versus VO order) and does not at all look like the adult German phrase structure. In my view it is not possible to postulate that Ivar follows language-specific paths given Ivar's German phrase structure, which is so similar to French phrase structure. It is also not entirely clear to me how one wants to defend the strong continuity position in this situation, as there is quite a step from Ivar's phrase structure to Haider's (1993) conception of adult German phrase structure. In my view it is more convincing to assume that Ivar has some form of compromise grammar at this point. This does not necessarily mean that the *entire* grammars are fused. As a matter of fact, the discussion around fusion and separate development could get a new dimension if one abandons a monolithic view on this matter and allows for separateness in some areas of the grammar and fusion (or, perhaps better: compromise) in other areas. As a matter of fact, from a psycholinguistic point of view it would seem to be economical to assume that language structures both languages have in common are stored together. Obviously, it needs to be investigated what "storing together" means exactly.

A last point I would like to raise concerns the issue of parameter setting, as discussed by the author. Apparently, some bilingual children do not set the V2 parameter correctly from the start. It is well known that if we allow parameters to take the wrong value in the first place, we may end up with what is called the pendulum effect: setting and resetting parameters ad infinitum. This is very undesirable from a theoretical point of view, and may never lead to a stable and target-like situation. Müller's solution to this problem looks very attractive at first sight. She suggests that in addition to the global V2 parameter, there is a subparameter relating to the status of the complementizer. In some V2 languages, such as German, complementizers do not instantiate a separate functional category, whereas they do in Yiddish. Some children may hesitate as to the status of complementizers, even though they have no problem with the global parameter. This is attractive because it explains that Ivar knows that German is V2, but does not know that this doesn't apply to non-root structures. The solution is, however, not so attractive from a theoretical point of view, because it is entirely unclear how children manage to set the subparameter, especially because Müller assumes there is no triggering data for this subparameter. The author already points to this problem when she says that it needs to be investigated whether the postulation of subparameters without triggering data is plausible. In particular, the fact that the majority of the monolingual children as well as some bilingual children set this parameter without experiencing problems remains unexplained in this approach.

In summary, I would like to say that the author has made an important contribution to the syntactic analysis of bilingual first language acquisition, as well as to the discussion about the relationship between ambiguity in the input and the occurrence of transfer.

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AUTHOR'S RESPONSE

# Really transfer?

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## Research Strategies

From the beginning of this century fascinating work has been carried out on the simultaneous acquisition of two languages from birth in the form of diary studies for example, that by Ronjat (1913). Many aspects of monolingual language acquisition have been studied in the same way, whereby researchers generally observed their own children, for example, Stern and Stern (1928). The modern research strategy is to audiotape or videotape the speech of young children at fixed intervals. Of course, a quantitative analysis can be carried out for both diary studies and more recent types of longitudinal study. However, researchers such as Ronjat (1913) do not provide us with exact quantitative results. Notwithstanding, these studies deserve to be taken seriously and I think it is possible to interpret some of the observations they contain as good and "reliable" evidence and compare these with results from modern longitudinal studies, where exact quantification is an important issue. I therefore think that the quantitative results of my review of existing studies on the acquisition of German subordinate clauses in bilingual children can be taken seriously, although I agree with François Grosjean and Elizabeth Lanza, who object that the quantitative differences between monolingual and bilingual children's errors are perhaps artefacts of the setting in which the children have been recorded. That I considered diary studies as well disappointed one commentator, Annick De Houwer, who would have preferred a comparison of modern studies only.

Writing this article for *Bilingualism* made me consult most of the literature mentioned in depth again. I studied for example Ronjat's (1913) book. It is not true, as De Houwer seems to believe, that Ronjat (1913) uses the subordinate clause *wenn der Bubi ist lieb* and three other examples to imply that the errors Louis made are restricted to these particular constructions: "Dès qu'il sait pratiquer la flexion verbale Louis peut se rendre compte de la place que dans des groupes comme 'wenn der Bubi lieb ist' sa mère attribue au mot 'ist' qu'il connaît déjà pour l'avoir entendu et employé lui-même à une autre place dans 'der Bubi ist lieb'. Cependant il dit très fréquemment 'wenn der Bubi ist lieb' et je note encore au 39e mois 'wie der Papa war so klein', au 40e 'damit er kann auch machen', au 48e 'wenn du vormittags hast einen fürchterlichen Hunger, dann nimmst du dir eins' " (p. 67). The examples are very important for Ronjat and are treated as instances of a more general phenomenon, because he discusses them with respect to the influence of French, Louis' second language. Since Louis' French subordinate clauses are target-like with respect to word order, that is, he never uses the German word order in a French subordinate clause, Ronjat (1913) concludes that "l'influence du français me paraît en résumé inutile pour expliquer la position incorrecte du verbe allemand en hypotaxe" (p. 67). Comparing these errors with those mentioned in Stern and Stern (1928) and Scupin and Scupin (1907, 1910) is very dangerous since these studies come to the conclusion that finite verbs are placed correctly in German subordinate clauses by their monolingual children, unless a conditional clause is involved. The following erroneous subordinate clauses are mentioned in Stern and Stern (1928): *wenn de Mutter hätte dort sitzen, dann hätte ich mit Vater Prost machen können* "if the mother would have there to-sit, . . . " (Hilde; 4;6), *weisst du warum? dass ich hab schlafen können, wenn ich hätte drinnen geblieben und Günther hätte weiter geschrieen, dann hätte ich ja bis früh nich geschlafen* " . . ., if I would have inside stayed and Günther would have further cried, . . . " (Hilde; 4;8), *wenn du's uns nicht würdest geben, dann würden wir's nicht essen* "if you it us not would to-give, . . . " (Hilde; 5;1), *wenn ihr würdet immerfort in Berlin geblieben sein, so würdet ihr immerfort Berliner gewesen sein* "if you would always in Berlin stayed to-be, . . . " (Hilde; 5;5). There is one example for Bubi as well, namely *wenn du mich hättest einen Pfennig in den Automaten stecken lassen* "if you me would have a penny into the machine to-put to-let" (Bubi; 4;7). Scupin and Scupin (1907, 1910) mention two other erroneous subordinate clauses, where the finite verb is placed in the position immediately preceding the infinitive/past participle*: weil ich dir den Apfel hab (ge)geben* "because I you the apple have given" (Bubi; 2;5), *dass man nicht runter darf fallen* "that one not down may to-fall" (Bubi; 4;6). These patterns are possible in adult German subordinate clauses which contain more than two verbal elements, for example, *weil ich dir den Apfel hab geben wollen* "since I you the apple have to-give to-want". Summarizing, the errors reported in the diary studies of monolingual German children are restricted to auxiliary verbs (modal/temporal auxiliaries) and to conditionals. Finally, I would like to add that I am aware of the Simone corpus and of the fact that researchers such as Weissenborn (1990a, 1990b) have come to the conclusion that Simone evidences very few placement errors of finite verbs in subordinate clauses (less than 2 per cent, Weissenborn, p.c). The survey of the literature on monolingual German children was not meant to be exhaustive (and nowhere did I suggest that it is), unless the researchers have studied the acquisition of word order in German subordinate clauses; for an overview see Mills (1985).

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One commentator, Jeanine Treffers-Daller, criticizes me for not taking into consideration the literature on second language acquisition (see Clahsen, Meisel & Pienemann, 1983). I did so in another publication (see Müller, 1998). The comparison of bilingual first and second language acquisition is very important but not a trivial issue. In the target-article my concerns have been more limited, dealing with the acquisition of a syntactic domain by monolingual and bilingual children. Consequently, I had nothing to say about how second language learners – in Clahsen et al.'s (1983) study migrant workers – acquire German subordinate clauses or come to use them in a target-like way. Discussing this issue would have required presenting and discussing the "UG is dead/UG is active" issue; space limitations have made this interesting discussion impossible.

**The question of transfer**

The majority of commentators agree that bilingual children develop two separate grammars during early developmental phases. Likewise it is rational to reject the assumption that there is no crosslinguistic influence. The commentators all agree on this result. Their criticism mainly concerns the hypothesis that transfer is involved in the case of crosslinguistic influence in bilinguals. Rosemarie Tracy questions the possibility that the outcome of transfer "goes beyond the supposed source". Certainly, if we think of transfer in terms of parts of tree structure for example, crosslinguistic influence could hardly entail that the recipient tree differs significantly from the source tree. However, my hypothesis is that parameter values are transferred by the children. Suppose, as I did, that the bilingual children have determined for German that it is a generalized V2 language (at the time when they produce target-deviant word orders in subordinate clauses). In structural terms, this means that the A- and A'-systems conflate. One "subdecision" which has to be made by the children is whether this conflation is partial or complete. Complete conflation gives a V2 language like German, partial conflation results in a V2 language like Yiddish. In terms of finite verb movement, this means that the finite verb raises to COMP in German and to INFL in Yiddish. Romance languages such as French and Italian are residual V2 languages; V2 effects are triggered by some lexical element in SpecCP. In these languages, the finite verb regularly raises into INFL, and into COMP only in lexically triggered cases. In other words, there is no parametric difference between Yiddish on the one hand and French and Italian on the other hand with respect to finite verb movement (in the general case); it is the IP-system which is being involved. A bilingual child who has determined that German is a generalized V2 language and who uses the French/Italian parameter value for finite verb raising (which corresponds to saying that the finiteness operator is located in INFL "[+F] in INFL" and not – as required in adult German – in COMP "[+F] in COMP') at the same time ends up with a Yiddish grammar. Put differently, the child makes a wrong decision with respect to the complete/partial conflation of the A- and A'-system, that is, s/he chooses the wrong value for the parameter which determines the functional head to which finite verbs move (in the general case).

In a parametrized UG, parameters are conceived of as switches. One outcome of the setting of a parameter is instantaneous learning; the learner selects a value and the grammar converges instantaneously with the adult system for that particluar language property. I actually used the term transfer to describe what the bilingual children under investigation are doing with this concept of parameters in mind. If we think of parameters as a method or a subroutine for language analysis, transfer is no longer necessary. We can simply say, then, that the bilingual child uses a subroutine of the system in both languages, which massively overgeneralizes in one of the languages (German). The bilingual child is tempted to pursue this way in cases where there is positive evidence for the application of the subroutine.

Two commentators, François Grosjean and Elizabeth Lanza, suggest that one has to control for the type of interactions in which the bilingual child is involved. The bilingual children under investigation have been observed in a bilingual setting: The children's parents knew both languages and also the interlocutors who were interacting with the children during the recording sessions were "bilingual" in that the German interlocutor, interacting with the child in German only, spoke French with the French-speaking mother after the recording session, for example. This is a very important issue which has to be persued further. We could, then, think of what I defined as transfer in the bilingual children in terms of code-switching. In my understanding of code-switching, wouldn't we predict that overgeneralizations occur in both directions? Wouldn't the prediction be that the V-final property of German is used in French/Italian/English as well? At least sometimes? These questions are on my research agenda and I have to admit that I haven't the faintest idea what the answers to the questions may look like and what the consequences are for parameter theory. Perhaps, the answer to the question of (uni)directionality has to be embedded into a markedness hierarchy, allowing a distinction between marked and unmarked language properties, as proposed by Suzanne Schlyter. I am actually conducting a research project on the simultaneous acquisition of German and Italian in bilingual children where I control for the language mode the bilingual children are in when they are recorded. One of the bilingual children, for example, has been recorded when interacting with her monolingual Italian grandmother. I hope to be able to present some of the results in the not too distant future.

Finally, I want to point out that the results by Aafke Hulk and Elizabeth van der Linden do not represent a challenge for my approach. The OV sequences they find in the utterances of a Dutch/French bilingual child may, of course, also be due to scrambling, an "outcome" of some properties of the Dutch grammar, and not to the wrong setting of the head-parameter for the VP. This alternative analysis can be verified on the basis of an analysis of the

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fronted XPs in terms of definiteness or specificity. I do not see any incompatibility with my hypothesis then that children use subparameters of language A in language B. Formulations such as "that the presence of OV patterns in the Dutch input of this bilingual child may very well be the factor that "pushes up" the production of [XP V] patterns in the child's French" or that "there is a form of interaction between the two languages: it is not mixing of the structure of one language into the other however, but rather "activation" of a possible, but rare pattern in one language by the input of a superficially similar, frequent pattern in the other" (Hulk & Van der Linden, 1996, p. 100) are very vague and compatible with what I proposed. They may suggest, however, that crosslinguistic influence is viewed by these authors as being performance-driven, rather than competence-driven.

### Are monolinguals bilingual?

Some commentators find it contradictory to explain the errors in subordinate clauses in terms of crosslinguistic influence in bilinguals because the same type of errors are also evidenced in monolingual German children. I disagree with this objection because I think it is plausible to assume some kind of crosslinguistic influence in monolinguals as well. Within a theory of language where universal (and partly parametrized) principles are assumed to exist, all individuals, monolinguals and bilinguals, know about the "core" range of language (non)variability. Children may adopt intermediate analyses which do not match those of the adult models since they may analyze the linguistic environment in such a way as to set a parameter one way, but later, with greater maturity of the child's capacities to analyze the input, and with more parameters set, revise earlier decisions.

We may hypothesize then that there are degrees of "monolingualism" or "bilingualism". Ivar, one of the bilingual children studied, learns two different languages, French and German. Crosslinguistic influence is meant to be influence of one language on the other. Benny, the monolingual German child, is exposed to two German dialects. Is he a monolingual child? Here, crosslinguistic influence may be defined in terms of influence of one dialect on the other. Recently, Roeper (1997) has defended the view that "monolingual" speakers are also "bilingual". All researchers who have worked on child data know the phenomenon, namely that children evidence a form of "bilingualism" when they appear to be between stages of language development. A "stage B child" may still use constructions to a large extent characteristic of the previous stage A. Consequently, crosslinguistic influence could be defined in terms of influence of one (previous) grammar (grammar of stage A) on a more advanced grammar (grammar of stage B). In the target article I tried to show that monolingual German children have to acquire two different representations for a type of construction, subordinate clauses, one where the finite verb surfaces clause-finally and another where the finite verb shows up in the structural position of root-clauses. In this case, two different grammars are involved, where one grammar is not necessarily a grammar of previous stages of linguistic development. This view of first language acquisition opens interesting perspectives to a parallel treatment of "monolingual" and bilingual first language development. Perhaps, it also reduces the special role of bilingualism defined in terms of two different languages attributed to language change in time (see the commentary by Suzanne Schlyter), since phonological distinctness of the varieties does not seem to be a condition for language change to take place: "... speakers learning a language in the course of a gradual change learn two sets of well-formedness principles for certain grammatical subsystems and that over historic time pressures associated with usage (presumably processing or discourse function based) drive out one of the alternatives. We must then ask, however, what would cause learners of a superficially homogeneous dialect to postulate two mutually exclusive grammars for it rather than one grammar which allowed for variation, especially as stable inherent variation is widespread in grammar. ... This same question, of course, arises with respect to bilingual and diglossic environments, since children in such environments learn the dialects they hear without mixing the rules. In these cases, phonological distinctness of the varieties may seem enough of a cue to prevent confusion, but it should be evident upon reflection that the appeal to phonology just poses the same learning question at a different level of language structure. In any case, where competing syntactic and morphological subsystems coexist without overt cues, the only answer to the learning question that is currently available is that the learners' innate dispositions, as specified by UG, force them to analyze the competing variants in the linguistic environment as evidence for two linguistic systems" (Kroch, 1989, p. 349).

### Conclusion

I am deeply grateful to all the commentators. They have pointed out interesting questions with respect to my transfer approach. These issues involve both internal and external factors of bilingual language development. I tried to provide answers where possible to their criticism.

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