SIMULTANEOUS FIRST LANGUAGE ACQUISITION: A WINDOW ON EARLY GRAMMATICAL DEVELOPMENT*

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ABSTRACT: Na perspectiva da Teoria de Princípios e Parâmetros, a aquisição simultânea de duas primeiras linguas requer que a criança seja capaz de fixar um parâmetro duas vezes, seja de forma idêntica, seja de forma oposta. Este trabalho enfoca a colocação do verbo, na aquisição do alemão e do francês, aspecto em que as duas linguas diferem substantivamente, envolvendo várias propriedades. O trabalho corrobora as predições da Teoria da Construção da Estrutura, segundo a qual, nos estágios primários as crianças não têm acesso a categorias funcionais. A aquisição destas depende da implementação de novos traços em categorias inicialmente sub-especificadas. A comparação dos resultados com o que ocorre em aquisição monolingüe do francês e do alemão atesta, ainda, que a gramática das crianças bilíngües é a mesma das monolíngües, em cada estágio do desenvolvimento, não havendo evidências, nem mesmo temporárias, de fusão de gramáticas.

0. Language acquisition research: more than one type

Studies on language acquisition normally focus on the linguistic development of monolingual children (1L1), or they investigate the learning of a language subsequently to having successfully acquired a first language, i.e. second language acquisition (L2) by children or by adults, in naturalistic or in classroom settings. A closer look at these two types of language acquisition readily reveals that distinguishing between them is not an easy matter in all instances - a child aged 3;0 (years;months) moving to a new linguistic environment, will it learn a second or another "first" language? Nonetheless, there is general consensus that L1 and L2 acquisition differ substantially in qualitative aspects. This is to say that differences are not confined to rate and ultimate success; they also extend to the order in which certain grammatical phenomena are acquired and to the kind of "errors"

learners make, to mention only two examples. When it comes to explaining what causes the observed differences between first and second language acquisition, however, one encounters considerable disagreement. One of the controversial issues is the question as to whether or to what extent particularities of L2 learning are due to the fact that more than one language is present in the learner's environment, possibly resulting in a more complex learning task when the two have to be kept apart. Moreover, the most crucial issue at stake here is to determine the nature of the underlying knowledge in language acquisition. Contrasting similarities and differences between the two types of acquisition should reveal whether the same type of knowledge is accessible to the learner, in L1 as well as in L2, in childhood and after puberty, and progress made in an attempt to answer these questions will deepen our insights into what constitutes the human language faculty.

If this assessment is basically correct, it follows naturally that language acquisition research should strive to get access to data from a variety of types of acquisition (and of attrition, one might add). The analysis of such data, of interest in itself, is likely to yield theoretical insights not readily available to studies restricted to one acquisitional type. It is from this perspective that I propose to look at *bilingual* language acquisition in this paper, focusing on the simultaneous acquisition of two (or more) languages in early childhood (2L1) as a specific case of first language acquisition, guided by the same kind of underlying principles and mechanisms as monolingual L1 development. The fact that 2L1 also shares certain properties with second language acquisition, if only because more than one language is present in the child's environment, makes it the ideal candidate for a mediating position in any study contrasting L1 and L2. In the present context, however, I will restrict my attention to problems of first language acquisition[1].

The first modern study of a bilingual child I am aware of is presented in the book by Jules Ronjat (1913), investigating his son's simultaneous acquisition of French and German. Since then, the study of child bilingualism has been neglected by linguists and by language acquisition researchers, leaving it to interested laymen, mostly parents, who have described individual cases of children growing up bilingually, frequently focusing on the more exotic aspects like language mixing. A good summary of this research in this area can be found in Grosjean (1982). Notable exceptions to this generalization are the works by

Pavlovitch (1920) (Serbian/French) and, of course, the classic study by Leopold (1939) (English/German). It is not until the sixties that a number of linguists and psychologists return to the topic of child bilingualism. But modern studies too, at least until the late seventies, have paid attention primarily to pedagogical and sociolinguistic questions and tend to pass over grammatical problems rather superficially. As a result, our understanding of the acquisition of grammar by bilinguals is still quite fragmentary, even though a number of studies have been carried out during the last ten to 15 years, see Pupier et al. (1982), Taeschner (1983), de Houwer (1990), Meisel (ed.) (1990, to appear a,b), and, again a few earlier publications, e.g. Mikes (1967). One can only speculate as to the reasons why these issues stimulated the interest of only a small number of researchers. It is, after all, an omnipresent phenomenon, given that the majority of the world's population grows up with more than one language. I suspect that many scholars interested in grammatical development are hesitant because of what is perceived as the "messiness" of a situation where two or more languages are acquired simultaneously and might interfere with each other. Such considerations overlook the fact, however, that the presumed homogeneity in monolingual L1 is in part a useful abstraction from what is regarded as contingencies of the specific situation. In part, however, it is also a myth. Competent speakers of a language are all bi- or rather multilectal being able to use a number of situational and perhaps also social and regional varieties. In countries like Germany or Italy, for example, many children will be exposed simultaneously to two dialects, the regional and the standard variety; they can be as different from one another in crucial grammatical properties as one Romance language is to another. At any rate, in view of the well-known poverty of the input data in all types of L1 acquisition, it is not very illuminating to merely point to the alleged messiness of the 2L1 situation. On the contrary, what promises to lead to significant insights into the nature of the language faculty is to gain a better understanding of how children cope with the complexity of the situation in differentiating between the linguistic systems involved.

1. Parameters in monolingual and bilingual first language acquisition

In this section, I will briefly sketch some of the tasks children are facing when acquiring the grammar of a first language. There can be no doubt, I believe, that they come to this task already equipped with a substantial body of knowledge about language which cannot be learned

substantial body of knowledge about language which cannot be learned inductively since the relevant information is not contained in the primary linguistic data, nor is it present in the context in which acquisition happens. The theory of universal grammar (UG), as developed by Chomsky (1981, 1986 a,b) and others, formulates this genetically transmitted *a priori* knowledge constituting the initial state of the language faculty in terms of principles and parameters which determine what is a possible human language. It is this version of UG, i.e. principles and parameters theory (PPT), which provides the theoretical framework for the ensuing discussion.

UG, understood in this fashion, distinguishes between phenomena related to non-parameterized universal principles and those that depend on parameters of UG. Quite obviously, there also exist language-specific properties of grammar. Assuming, then, that children's and adults' grammars are basically of the same type, i.e. adhering to the continuity assumption as formulated by Pinker (1984:7), non-parameterized principles define the range of phenomena which are predicted to be invariably present in child and adult grammars, provided they are instantiated in the respective grammatical systems. At the other extreme one finds the language-specific phenomena, including the phonetic shape and certain grammatical properties of lexical items, which have to be learned inductively by the child. The third group of phenomena comprises those related to parameterized principles of UG, and this is what I will be concentrating upon. From an acquisitional perspective, they are of particular interest, since it is here where *a priori* knowledge and inductive learning interact: the principle in question is given by UG, the space of variation across grammars thus being tightly narrowed. The choice between the parameterized options, however, is made on the basis of information available in the primary linguistic data.

This is where the simultaneous acquisition of two (or more) languages poses specific problems for the learner who has to differentiate the two grammatical systems which, in some cases, have set parameters to identical values, whereas in other cases the grammars differ in the value which is chosen for a particular parameter. The obvious question is whether this will confuse the child, resulting, temporarily at least, either in the fusion of the grammars into a single system, or in transferring parameter settings from one grammar to the other. If we succeed in answering questions of this sort, we will not

hope to contribute to language acquisition theory, in particular to parameter theory (PT). This would be a more than welcome result in itself since there does not yet exist a generally accepted version of this theory. Let me therefore mention some of the assumptions about PT I will be making in what follows; for a more detailed discussion of these issues, see Meisel (to appear b).

Parameterized options are defined at an abstract level of grammar, and the setting of a parameter value will typically cause a cluster of superficially unrelated grammatical properties to appear in the language; see Chomsky (1981:6). As for the initial setting of parameters, at least some of them may exhibit a default value, much as proposed by Lebeaux (1988). This is to say, one of the values is active by default before the parameter is set as a result of the child's experience with data. Once, however, setting has occurred and the parameter is fixed to a specific value, resetting it is not an option any more, as has been argued by Clahsen (1991) and Müller (1993a,b; to appear); instead, in order to retreat from a mis-set parameter value, the child has to learn the relevant information inductively. Parameter setting, in contrast, is thought of as happening in a a quasi-automatic fashion, triggered by the identification of the appropriate grammatical information in the data. As suggested by Roeper & Weissenborn (1990: 151), it is, in fact, assumed that, for a given parameter, there is one unique trigger. One may think of each parameter value as of a lock which opens instantaneously when the right key is inserted; in our case, the key is a specific type of grammatical information encountered by parsing the input data by means of the currently available grammatical knowledge. Finally, PT tightly restricts the range of parametric variation by claiming that parameters only relate to the lexicon, probably even to functional heads; see Borer (1984), Chomsky (1989), and Ouhalla (1991). Consequently, it is this area, namely the grammatical properties depending on functional categories, which I will examine here in some detail, asking how children acquiring two languages simultaneously succeed in setting parameters correctly to the values required by each of the grammars involved.

2. Data collection and subjects

Before entering the discussion of specific grammatical problems, let me briefly introduce the data and the empirical methods employed; for a detailed description, see Meisel (ed.) (1990, to appear a).

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This research is based on a corpus of naturalistic data gathered longitudinally with bilingual (French-German) children of preschool age. 13 children have been studied by the research group DUFDE[2], beginning at around age 1;0-1;5 (years;months,days), ending at approximately age 5;0-6;0.[3] The children are growing up in middle-class families. The native language of the mothers is French; the fathers' first language is German. Each parent uses his or her respective native tongue when communicating with the children. The language of communication between father and mother is usually German, but in some cases, the parents speak mostly French to each other.

The children were videotaped every second week while interacting with adults and occasionally with other children. The recordings consist mainly of free interaction in play situations; they last for approximately 60 minutes each, half in each language. The well-known principle of "une personne - une langue" is observed. This means that two researchers participate in each recording, one speaking only one language with the child, the other consistently sticking to the other. Both linguistic and nonlinguistic interactions and the relevant context are transcribed. At least one recording per month is transcribed and analyzed. If preliminary analyses indicate that important changes in the linguistic behavior of the child occurred during this period, more than one recording per month is included in the analysis. If necessary, additional sources of data are available. Every two or three months, the parents made audiorecordings without the children being aware of this. Finally, the parents kept language diaries during the first years of our study. These notes can also be included in the analysis.

3. Verb placement in German and in French

Let us now look at a specific example of grammatical development, the placement of verbs. For a number of reasons, this is an obvious choice in the context of the present discussion. First of all, it is an issue of significant interest for the theory of grammar; secondly, a natural consequence of the first point, one can draw on a substantial number of research studies dealing with theoretical aspects of the problem and with specificities of the two languages studied here,

3.1. The acquisitional tasks: from the initial state to the adult grammars

To begin with, I will try to outline in a summary fashion what exactly the tasks of the bilingual child are in acquiring the language-specific properties of the two languages. This will be done in two steps. First, the target grammars will be characterized in terms of parameter settings involved and of the resulting surface orders appearing in the input; secondly, some assumptions about the initial state will be made explicit.

3.1.1. *The target systems.* It is generally agreed that French has underlying SVO order, whereas German is a "verb-second" (V2) language with underlying SOV order. Non-finite verbal elements occupy final position in both main and subordinate clauses in German. According to the usual analyses, see (1) and (2) below, both are verb-raising languages, i.e. the finite verb moves to INFL. This is normally the surface position of the finite verb in French as well as in German subordinate clauses which exhibit verb-final surface order. The V2 phenomenon of German main clauses is derived by further movement of the verb into COMP, the head of CP, together with movement of a maximal projection (X^{max}), e.g. the subject NP, into SpecCP. In German subordinate clauses, the verb remains in INFL, the COMP position being occupied by a complementizer. As for French, the finite verb can only be moved to COMP in exceptional cases, i.e. in so-called "inversion" constructions (see Rizzi & Roberts 1989).
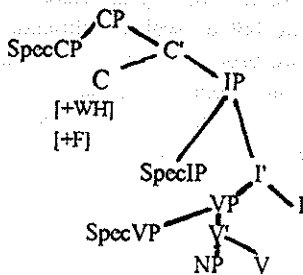
(1) German   (2) French
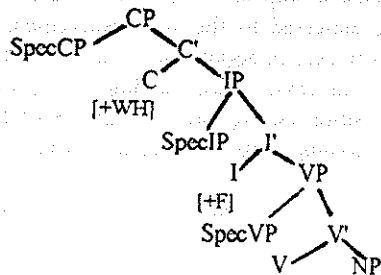
Note that two features are largely responsible for the differences between the two languages. One is that *headedness* is specified differently for INFL in French (head-initial) and in German (head-final).

Note that two features are largely responsible for the differences between the two languages. One is that *headedness* is specified differently for INFL in French (head-initial) and in German (head-final). Another difference concerns the position of [±finite]. Platzack & Holmberg (1989) suggest a *finiteness parameter* which specifies the placement of the operator [+F], either in INFL, as in French and English, or in COMP, as in German. According to their analysis, it is the position of this operator which determines whether a language exhibits V2 phenomena or not. This brief description thus leads to the conclusion, leaving other problems aside, that the child faces the following acquisitional problems:

(3) a) The choice between the headedness options for all
       projections of X-bar structure.
    b) The setting of the finiteness parameter.
    c) Language-specific overt markings for agreement,
       tense, etc.

Note that surface word-order patterns do not easily reveal the kind of information needed in order to be able to perform tasks 3a) and b). French, here, appears to be the easier case since it adheres rather strictly to SVO order. Complications, nevertheless, arise because of clitic placement and dislocation. Object clitics (OCL) appear in preverbal position, resulting in an SoV pattern (small letters indicating the position of clitics). Dislocation of subjects and objects is an extremely frequent feature of the spoken language[4]; the dislocated element appears to the left or to the right of IP, and a pronominal copy is cliticized to the verb. Movement of the NP as well as cliticization both lead to significant variation in the word order patterns encountered by the child. Merely adding the option for adverbials to appear in initial position and ignoring a number of further possibilities, now yields the following patterns, several of which deviate from the basic SVO order:

(4) SVO, AdvSVO, SsVO, sVOS, SoV, OSoV, SoVO

In German, dislocation is possible but much less common than in French, and there are no word order changes due to cliticization. In spite of this, German clearly offers a more complex picture than French. Again ignoring a number of further possibilities, the following patterns

(5)a) matrix clause:
$$SV_{+fin}O(V_{-fin}) , OV+_{fin}S(V_{-fin}),$$
$$AdvV_{+fin}SO(V_{-fin})$$

b) subordinate clause:
$$CompSO(V_{-fin})V_{+fin}$$

What (4) and (5) are meant to illustrate is the following. In French, the child has to be able to distinguish between clitics and non-clitics; otherwise the patterns in (6) a) appear to be possible. In German, a distinction between finite and non-finite verbs must be made, as well as between matrix and subordinate clauses; failing to do so lets the patterns in (6) b), among others, seem grammatical, including verb-initial sequences in interrogatives.

(6) a) French: SVO, VOS, OSV, AdvSVO
   b) German:SVO, SOV, OVS, AdvVSO- VSO

3.1.2. *The initial state*. As has been mentioned in section 1, parameters relate to functional heads. This includes the possibility that not all functional categories made available by UG will be implemented in the grammar of every language. If this is correct, it follows for language acquisition that children have to discover the set of categories required by the grammar of their language - grammars, in the case of multilinguals. In other words, UG makes the entire set of functional categories accessible to the child, but s/he has to decide for each of them whether to make use of it or not. Within the framework of the above outlined version of parameter theory, the prediction about the child's initial grammar is that no functional category is implemented; positive evidence is needed in order to make this parametric choice. Early grammars, thus, are hypothesized to contain only projections of referential categories, most importantly verbs and nouns. Focusing, for the purpose of this discussion, on verbal categories, one can say that sentence structures like (1) and (2), above, are VPs dominated by functional categories. One should therefore expect that early sentence structures resemble VPs. This corresponds in essence to what Guilfoyle & Noonan (1988) called the "Structure Building Hypothesis"; see also Radford (1986, 1990). It now follows that, in addition to the tasks already listed in (3), the child, first of all, faces the following problem:

Radford (1986, 1990). It now follows that, in addition to the tasks already listed in (3), the child, first of all, faces the following problem:

(7) The implementation of the set of functional
     categories (e.g. I, C) required by the
          particular grammar.

Note that, contrary to what is suggested by Ouhalla (1991), I am assuming that the hierarchical order of functional categories is given by UG and is not subject to parametric variation.

3.2. Developmental sequences in German-French bilinguals

I will now turn to the data from the DUFDE-project and summarize the findings concerning verb placement for four of the children studied, Caro, Pierre, Ivar, and Pascal.
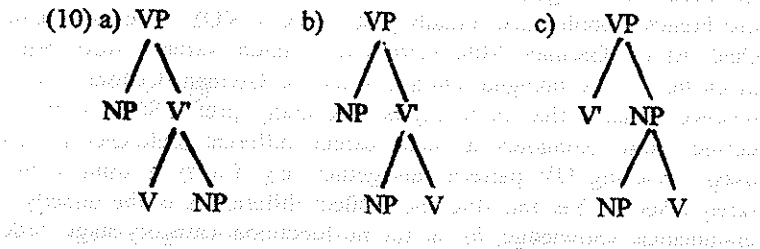
3.2.1. No functional categories. The analysis begins at the point where children start using multi-word utterances containing verbal elements, usually around age 1;10[5], approximately at MLU 1.75.

Early usage exhibits considerable intra- and inter-individual variation in both languages; see (8) and (9)[6].

(8)	a)	nounours dort/	Iv 2;00,02
		'teddy sleeps'	
	b)	dort bébé/	Iv 2;00,02
		'sleeps baby'	
(9)		schlaft/schlaft der bär/	C 2;00,09
		'sleeps. sleeps the bear.'	

VS patterns, however, are not found in the speech of all children, and they disappear soon. There is, in fact, a tendency from early on to prefer one particular order. In French, this is SVO, but some VOS patterns are already attested as well; in German, SVO or SOV is preferred, depending on what child one is looking at. Note that normally only one of the verbal arguments is realized, yielding mostly SV or VO, OV patterns. Although a number of the precocious SVO-patterned utterances are probably rote-learned since they are of the type *das ist N(P)* 'that's N(P)', the data suggest that the children, at this point, have not yet complied with task 3a), concerning headedness of

Sportiche 1991), one has to conclude that the order of elements within VP is not yet fixed, allowing for all three possibilities given in (10).

(10) a)
```
        VP
       /  \
      NP   V'
          /  \
         V    NP
```
b)
```
        VP
       /  \
      NP   V'
          /  \
         NP   V
```
c)
```
        VP
       /  \
      V'   NP
     /  \
    NP   V
```

This is, in fact, what Ouhalla (1991) predicts, quite in tune with the claim that parameters should relate only to functional categories. Rather than having the head-direction parameter apply to the VP, verb placement depends on the internal structure and on the position of the functional category to which the verb is moved. Assuming that first grammars lack functional categories, early child utterances are correctly predicted to exhibit variable verb placement patterns. It is only when IP, AgrP, or some other functional phrase of this type has been implemented that the verb will assume a fixed position corresponding to the position of the functional head.

Looking back, now, at what we expected to find according to the input data, see (6), two observations can be made. First, we indeed find only patterns which are predicted to occur; but the two languages are already differentiated since certain patterns (SOV, VOS) exist in one language only. This may not be perceived as a significant achievement for it could be argued that the children simply repeat what they hear; but it does indicate that language differentiation is possible at this early point. More importantly, and this is the second observation, considering input alone does not explain why certain patterns in (6) are *not* used yet, namely those which require movement out of VP. In order for this to be possible, functional categories have to be available to which elements can be moved. Our empirical data, thus, show that children's early utterances are constrained by grammar, rather than merely reflecting surface properties of input data; moreover, these empirical findings support the claim that these early grammars still lack functional categories.

Comparing the bilinguals' language use with that by monolinguals reveals that there are no qualitative differences, i.e. they do not employ

Comparing the bilinguals' language use with that by monolinguals reveals that there are no qualitative differences, i.e. they do not employ structures monolinguals would not use as well. Clark (1985) reports that French monolinguals initially prefer SVO or VOS, depending on the child. As for German, Mills (1985) finds initial variable word order, much like in the bilingual children's use of German. Clahsen (1982), however, claims that monolinguals generally prefer SOV; if this is correct, some bilinguals, at least, exhibit different preference in their usage, avoiding OV patterns altogether (e.g. Caro) or using it only rarely (Pierre). Yet this does not reflect differences in the underlying grammatical knowledge, for at the no-functional-category-stage, order is expected to be variable, and once the verb raises to a functional head, all children, including Caro, do use verb-final constructions.

3.2.2.Implementing functional categories. The next question to ask, then, is when functional categories can be shown to be used and how they are acquired. In the present context, I will focus my attention on the problem of whether bilinguals differ, in this respect, from monolinguals, and I will ignore the more principled issues involved. Let me summarize the crucial points as follows. There is good evidence that CP is implemented later than IP; in fact, this does not seem to be controversial among researchers who adhere to some variant of the Structure Building Hypothesis, e.g. Roeper & Weissenborn (1990), Clahsen (1991), and several contributions to Meisel (ed.) (1992). Whether IP should be split into several categories and if so into how many and exactly which, on the other hand, is far from being clear. What matters for the present purpose is that finite verbs may appear in at least two different positions below CP, see Clahsen (1991), Meisel & Müller (1992); I will return to this point immediately. Since subject-verb agreement comes in before tense, see Meisel (to appear a), the lower one may be the head of AgrP[7]; as for the higher one, I will continue to call it IP, rather than TP, FP, etc.

Returning to the DUFDE-children again, we thus need to know when and how finiteness emerges as a grammatical notion. Recall that I adopted the claim that it is the finiteness parameter, i.e. placement of the operator [+F] either in INFL or in COMP, which decides where the verb moves to. Since I furthermore accepted the claim that the headedness parameter refers only to functional categories, both acquisitional tasks - see (3) a) and b), above - have to be faced with the emergence of functional categories. And in the case of French-German
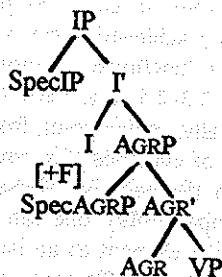
3.2.3. Implementing IP. An analysis of the data from the DUFDE corpus reveals that the theoretical assumptions concerning the relation between finiteness and verb movement (Mills, 1985; Clahsen, 1986) are indeed confirmed in a rather stunning way. "Finiteness" has been shown to depend crucially on person agreement, more specifically on the possibility of distinguishing between at least two grammatical persons (Meisel[8] to appear a). Once this is achieved, there is ample evidence for verb raising into the head of a functional category above VP. This normally happens between ages 2;3-2;5 (e.g. Caro 2;4, Ivar 2;5); MLU values tend to increase dramatically, at this point, from just under 2.0 to 3.0 and above. One crucial bit of evidence, for both languages, is the position of verbs in relation to the negative elements *pas* and *nicht*. Following Weissenborn & Verrips (1989), one can use the position of verbs with respect to the negative element as an indicator of finiteness and verb raising since finite verbs, in German main clauses and in French, precede the negator, and infinitival verbal elements normally follow it. This is exactly the pattern one finds as of now:

(11) (a)   Ivar darf nich tee   Iv 2;04,23
           Ivar may not tea
           'Ivar may not drink tea'
     (b)   paßt nich auch   Iv 2;05,07
           fits not also
           'this doesn't fit either'

Also in both languages, modals, which are generally assumed to appear in the head of IP, begin to be used by the children at this time. As for French, the emergence of finiteness is further indicated by the productive use of subject clitics which can be argued to be a spell-out of agreement; see Kaiser (to appear). This is confirmed by the fact that the use of VOS patterns ends at exactly the point when agreement is claimed to be present. Instead of VOS, the children now use sV(O)S structures; this confirms our claim that VOS patterns should be interpreted as instances of subject right-dislocation with the subject clitic missing[9]. Let me add that right-dislocation of subjects also happens in German, but only very rarely, and there are only isolated instances of left dislocation in French and none at all in German, as far as I can tell. These frequencies are apparently a reflection of adult usage.

We can conclude, then, that setting the parameters under discussion apparently happens without any detectable effort in French, once the necessary functional categories are available. Assuming that both AgrP and IP are required, the children's grammar, at this point, can be hypothesized to produce structures of the following type:

(12) French

```
              IP
             /  \
        SpecIP    I'
                 /  \
               I    AGRP
             [+F]   /  \
              SpecAGRP  AGR'
                       /  \
                     AGR   VP
```

3.2.4. CP in French. A comparison with (2), above, readily reveals that (12) differs from the adult grammar only in that CP has not yet been implemented. According to the usual analyses of French syntax, this should prevent the child from using embedded clauses, introduced by CP, as well as constructions where an element is moved into the CP, e.g. interrogatives with wh-words in initial position, "inversion" of verbs and subjects, among other things. Some analyses also rule out fronting of adverbials, treating it as an instance of wh-movement (to SpecCP); yet it may also be explained as an adjunction operation, in this case to IP. Evidence for the availability of CP in child grammars is found a few months after the emergence of IP. In fact, CP seems to enter French grammar no more than two months later[10], around age 2;6. Children now use subordinate clauses headed by a complementizer and wh-questions. Object clitics also make their appearance now, and it has indeed been suggested that this fact is related to the presence of CP in the sentence structure; see Müller, Crysmann & Kaiser (1993). AdvSV(O) patterns are present, as well, but they tend to occur earlier, thus confirming the adjunction hypothesis. A potentially conflicting bit of evidence consists in the fact that some wh-questions are attested before the supposed point of emergence of CP; but they are restricted to what is probably a rote learned pattern, namely "where is X?" type questions, i.e. *ou est X? où l'est* X?. I will return to this problem below when dealing with the German data. It appears, then, that the relevant parameters are again set

without much effort in French. The head of CP is consistently placed to the left, just as in IP, and the finiteness operator can remain in INFL.

3.2.5. Functional categories in German. In German, on the other hand, the learner apparently encounters a number of additional complications related to the setting of these parameters. The implementation of functional categories, however, is achieved as early and as easily as in French, as has already been shown, citing negative constructions and modals as evidence. This is further corroborated by the fact that, in addition to the SVO and SOV patterns, one now also finds VS order in yes/no questions.

(13)   is die blume kaputt↑ / C 2;04,22
         'is the flower dead?'

Yet although these observations clearly indicate that a functional category is available to which the verb is raised, a first complication arises with respect to headedness. Whereas in French the relevant projections all exhibit head-final ordering, German verb placement requires both, a position following and one preceding the verbal complement. Since we decided to relate headedness exclusively to functional projections, it follows that we will need at least two such categories offering these possibilities. Good candidates are AgrP and IP, and a plausible hypothesis is to assume that the headedness parameter of AgrP is set to a different value, as compared to French, namely head-final. This is indeed confirmed by the data, and the children seem to discover it easily. As of the moment when, according to our hypothesis, functional categories are available, all children use SOV patterns, even Caro who did not have SOV order until then. More importantly, what lends strong support to the claim that AgrP is ordered head-finally in early grammars is that three of the five children studied occasionally place finite German verbs in final position; e.g. by Ivar and Pascal in 4% of their utterances.

(14) dies da drauf is/   C 2:10,00
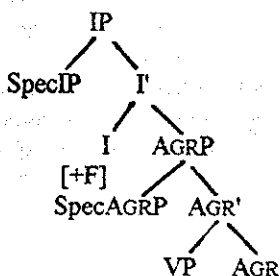   'this one is there on top'
(15) [dun] dann der kran (runter) geht/ Iv 2;10,24
     and then the crane down goes
     'and then the crane goes down'
     carried it out of the room'

(16) die baum kletter(t)/   Pa 2;01,28
     this tree climbs
     this one climbs the tree

In other words, in sentences like (14)-(16), the verb has remained in AgrP, failing to move further up; see Meisel & Müller (1992). Yet this is where another problem arises: where is the finite verb supposed to move to? Recall that in adult German, it is placed in second position (V2), and this is achieved by raising it into the head of CP, with the subject or some other major projection appearing in SpecCP. If we want to maintain that CP is not yet accessible, how are we to explain modal constructions and $V_{+fin}O$, VS, and $V_{+fin}Neg$ orders? There can be no doubt that the children's grammar must make available a position above VP and to the left of the VP complement where the finite verb can move to. Yet the head of CP is not the only possibility. It has been shown for a number of languages, e.g. Yiddish (Diesing, 1990) and Icelandic (Platzack 1983) that accounting for the V2 effect does not require the presence of CP. Children may therefore choose the same option and place the finiteness operator in INFL rather than in COMP. A number of researchers, e.g. Clahsen (1991), Meisel & Müller (1992), Müller (1993a, to appear), concluded that IP, although head-final in adult German, as shown in (1), is head-initial in child grammars, yielding a structure like (17).

(17) German

```
                        IP
                       /  \
                  SpecIP    I'
                           /  \
                          I    AGRP
                        [+F]   /  \
                        SpecAGRP   AGR'
                                  /  \
                                VP    AGR
```

In the context of the present discussion, the crucial problem, however, is not whether it is IP or CP which is head-initial. I want to maintain that what matters is that there is conclusive evidence in favor of the assumption that two distinct functional categories are available in the children's grammars, and that the headedness parameter is set

differently for them in German but not in French. The question of how to label these categories is a fascinating one, but it is unlikely to reveal differences between 1L1 and 2L1.

The obvious question, at this point, is when and how grammars are reorganized in order to merge with the mature system as exemplified in (1). Several new structures begin to appear, but most of them can be generated by a grammar of type (17) where the verb is moved to the head of INFL, and the specifier of IP may be an A-position as well as an A-bar position. One such example is the topicalization of adverbials and of objects, yielding V2 patterns, with the verb following its subject. There are a few exceptions in the speech of Ivar and Pascal who then put the verb in third position. Note that Clahsen (1982) and Mills (1985) report that monolingual German children, too, occasionally fail to place the finite verb in second position when an interrogative pronoun, an object, or an adverbial has been fronted. Bilinguals, thus, do equally well as or better than monolinguals. This is quite noteworthy in view of the fact that similar constructions appear simultaneously in French; but there the verb is placed consistently in third position, as required by the target system.

(18) (a)   da ist 'n loch/   P 2,09,02
           'there's a hole'
     (b)   maintenant le cochon   P 3;02,11
           [le] saute la kangourou/
           'now the pig (it) jumps over the kangaroo'

Another type of construction, VSO, surfacing during the period under review is related to the XVS pattern just mentioned. In these sentences, the topic is not expressed (null topic), but the verb has been placed in V2 position. Most of these utterances are acceptable in spoken adult language.

(19)   schenk ich dir/   C 2;07,06
           give I you (dative)
           'I give (this) to you as a present'
(20)   nein. wär die da unten/   P 3;01,25
           no, were she there down
           no, she should be down there

If none of these structures provides the decisive bit of information enabling us to decide on whether or not CP is accessible at a given point of development, the crucial kind of evidence seems to be contained in indirect wh-questions and in subordinate clauses introduced by complementizers. This is the hypothesis developed by Müller (to appear), based on theoretical arguments put forth by Rizzi (1991). Rizzi distinguishes between non-selected wh-elements in main clauses and lexically selected wh-elements in embedded clauses. In the former, wh-specification is in INFL, in the latter it is in COMP. Müller concludes that developing grammars may, for some period of time, only make use of non-selected [+WH], contained in the head of IP, together with [+F]. As a result, V2 phenomena and root interrogatives in non-mature grammars of V2 languages like German, as well as "inversion" in residual V2-languages like French can all be handled within IP. This explains why, on the one hand, root interrogatives are used during a period when children omit wh-words and complementizers in embedded questions and in subordinate clauses, respectively; see (21) for an example. It also explains why the above mentioned *V3 placements in some of the utterances by Ivar and Pascal disappear when complementizers begin to be used in German (Pa 2;9, Iv 2;11, C 3;1, P 3;2[?]).

(21)   guck mal 0 ich hab/   C 2;06,22
            'look (what) I have

I would like to emphasize that, by this account, the implementation of COMP and its projections is only superficially related to the acquisition of complementizers. On a more abstract level, and in grammatical terms, CP is triggered by the grammatical feature [+WH] and by the mechanisms licensing it. In a first step, it is integrated into the grammar in autonomously licensed position (Rizzi, 1991), yielding a number of new structural possibilities. In a second step, then, the necessity for a lexically licensed wh-position triggers CP.

4. Bilingual first language acquisition: a window on underlying principles of grammatical development?

Let me try to sum up what I think are the results of the studies reported on in this paper concerning similarities and differences between monolingual and bilingual first language acquisition as well as specificities of bilingual L1 development. I will subsequently highlight

some insights which are possibly of crucial relevance for theories of grammar and of language acquisition.

4.1. Monolingual-bilingual first language acquisition

One potentially important result is, in a certain way, a negative one. The sequences of grammatical development in each of the bilingual's languages are the same as in monolingual children's acquisition of the respective language and is guided by the same underlying logic. In other words, no qualitative differences could be found between 2L1 and 1L1. Consequently, it seems to be appropriate to regard early bilingualism as a case of simultaneous acquisition of two first languages.

There is one apparent counterexample to this generalization. One of the French-German children, Ivar, deviates from the developmental pattern familiar from monolinguals and other bilinguals at the point when, according to the analysis presented here, the CP should be made available in the child's grammar. Whereas the other children, without ever making errors, place both non-finite and finite verbs in final position in German subordinate clauses, as required by the target adult grammar, Ivar uses, for an extended period of time, COMP+V2 order. Müller (1993, to appear a) suggests that this is caused by the child's failure to identify early complementizers as functional categories, treating them as prepositions (or PPs), instead. Independently of whether or not one accepts this explanation, there are good reasons to believe that this particular acquisitional pattern is not a result of the child's being bilingual. Firstly, the structures used are not simply transferred from French. In those cases where a constituent other than the subject precedes the verb, the resulting order in Ivar's German subordinate clauses is COMP+X+V+S, whereas in French one would find COMP+X+S+V. Secondly, the same type of structures have also been encountered in monolingual German children; see Fritzenschaft et al. (1989) and Gawlitzek-Maiwald et al. (1992). These facts give strong support to the claim that these are cases of parameter-mis-setting rather than being a particularity of bilingual L1 acquisition.

We have, nevertheless, found at least one instance where bilinguals do seem to behave differently, as compared to monolinguals, i.e. at least some bilinguals, when beginning to use multi-word-utterances, hardly ever use verb-final order in German, and many

certainly do not use it predominantly. If it can be maintained that this order is initially preferred by monolinguals, we may indeed have identified an area where the two types of language acquisition differ. It is, in fact, conceivable that in cases where the two languages overlap in one option offered by the respective grammars (i.e. SVO), children may strongly prefer this option over the ones which are generated by only one of the two grammars, especially when this common pattern is a particularly frequent one. But this is clearly a quantitative, not a qualitative difference; in other words, it is a property of language use, not reflecting different types of grammatical knowledge. Note that the language-specific options, i.e. French VOS and German SOV are never carried over to the other language. Most importantly, the preference for SVO, even in cases where SOV is totally absent in the beginning (Caro), does not induce the learner to assume underlying SVO order for German, as appears to be the case in the acquisition of German as a second language. None of the ensuing problems with German word order familiar from L2 learners, see Clahsen & Muysken (1986), du Plessis et al. (1987), Schwartz & Tomaselli (1988), are encountered here.

I would like to add that it is obviously too early to close the files on this issue. More in depth analyses comparing monolingual and bilingual grammatical acquisition are needed in order to arrive at a final conclusion. Some observations, for example, seem to suggest that certain non-target usages reported from 1L1 studies are not found in 2L1 data; although it is not always clear how to account for them in terms of properties of developing grammars. One such case is mentioned by Mills (1985) who found that the finite verb sometimes incorrectly precedes the non-finite one when there are several verbal elements in German subordinate clauses. If such reports can be confirmed, and if a grammatical explanation can be given, one might hypothesize that bilingual language use exhibits less variability in each of the two languages. Yet, again, no evidence has been offered, so far, indicating that the grammatical knowledge acquired by bilinguals differs, at any point of development, from that in monolinguals.

4.2. Language differentiation

The starting question asked in chapter 1 had been whether having to acquire two grammatical systems simultaneously might possibly confuse the child, resulting, temporarily at least, either in the fusion of

the two grammars into a single system, or in transferring parameter settings from one grammar to the other. The problem is closely related to the previous one, summarized in the preceding section. Given that 2L1 acquisition follows the same developmental logic as 1L1, the answer to the question is quite obviously that bilingual children are capable from very early on of differentiating the two grammatical systems.

It should be noted that this is by no means a trivial result. In fact, until recently the generally held belief had been that bilingualism inevitably brings about a phase of grammatical fusion, as suggested by Volterra & Taeschner (1978). In their influential paper, they proposed a three-stage model for early phases of language development, according to which, at the first stage, the child has only one lexical system comprising words from both languages; at the second stage, two distinct lexical systems develop, although the child still applies "the same syntactic rules to both languages" (Volterra and Taeschner, 1978: 311); only at the third stage is differentiation of two linguistic systems, lexical as well as syntactic, said to occur. It is only recently that detailed analyses of various longitudinal corpora revealed that early differentiation is not only possible but the normal case; see Genesee (1989), Meisel (1989), de Houwer (1990). Note that this claim refers to the grammatical knowledge of children, not to language use. Bilinguals do, of course, mix languages. The best studied type of mixing is code-switching which has been shown to be constrained by grammatical as well as by pragmatic principles, and children become quite good at that, already before age 3;0; see Köppe & Meisel (to appear). But the notion of "switching" itself implies that there are two separate systems between which the bilingual can go back and forth. Mixing resulting from fusion of two or more grammars into one, however, has yet to be shown to exist.

4.3. Setting parameters in two languages simultaneously

To conclude, then, I believe I have shown that children acquiring two languages simultaneously succeed, apparently without much effort, in differentiating the two grammatical systems from early on, developing the same grammatical knowledge as monolinguals in each of these languages. This conclusion leads us back to the theoretically crucial question as to how this is accomplished in terms of parameter setting.

Adopting the constrained version of parameter theory according to which parameterization relates exclusively to functional categories, led quite naturally to the conclusion that the language learner has to select, out of the repertoire offered by UG, the subset of such categories required by the target grammar. Since, in this paper, I have tentatively adopted the split-INFL hypothesis, the assumption is that both French and German require at least three projections of functional categories, AgrP, IP, and CP.

In order to understand how the child discovers these facts, it is necessary, I believe, to remember that all categories, functional as well as referential, are really bundles of features, rather than being monolithic entities; the repertoire of features, too, being specified by UG. Although this is, in itself, not a controversial claim, the ensuing consequences for language acquisition have not yet been explored in sufficient detail. One important aspect has been pointed out by Felix (1990); since languages differ with respect to the distribution of grammatical features across various syntactic positions, language learners have to discover how they are distributed for their respective target grammars. Moreover, one has to allow for the possibility that developing grammars contain underspecified functional projections, as compared to the respective mature grammars; this has been suggested by Clahsen (1991), Gawlitzek-Maiwald et al. (1992), Roeper (1992), and Müller (to appear). In other words, the Structure Building Hypothesis needs to be reinterpreted in such a way as to predict that structure building in grammatical development proceeds feature by feature, rather than obliging the learner to select from fully specified categories. This amounts to saying that the learner really has to solve a twofold problem, i.e. to determine the number of functional heads and the feature specification of each of them[11].

A detailed analysis of the feature specification of functional categories is clearly beyond the scope of this paper. I will, nevertheless, attempt to pull together some of the facts touched upon in the preceding sections, and I will also speculate on how the findings might fit into a theory of language development. Following Grimshaw (1991), functional categories may be verbal or nominal in nature, as expressed by their categorial features. (22) and (23) illustrate this; I will ignore here the indication of levels of projection given in (23) (a).

(22) (a)   V   [+V -N]   {F0} (L0)
           V'   [+V -N]   {F0} (L1)
           VP   [+V -N]   {F0} (L2)
     (b)   I   [+V -N]   {F1} (L0)
     (c)   C   [+V -N]   {F2} (L0)

(23) (a)   N   [-V +N]   {F0} (L0)
     (b)   D   [-V +N]   {F1} (L0)
     (c)   P   [-V +N]   {F2} (L0)

The categories we are concerned with, V, INFL, and COMP, are all verbal in nature. They form what Grimshaw calls an extended projection, differing only in their referential (lexical, in her terminology) *versus* functional status, expressed by the features {F0}, {F1}, and so forth. Depending on whether or not one adopts the split INFL hypothesis and, if yes, which version of it, other maximal projections forming part of the verbal extended projection may be TP, AgrP, and NegP. What matters for the present discussion is the F value. Yet labelling it as such is not really revealing; it does not tell us, what its defining properties are, the ones the child would have to detect in order to know that another head is part of the sentence structure. A few things, however, can be deduced from the theory of extended projections. First, implementing functional categories does not require the discovery of additional categorial features; instead, it is a projection process, comparable to projection from X^0 to X^{max}. Second, the extended projection is the domain within which the head can move. It acts as a form of structure preservation (Emonds, 1976), as Grimshaw (1991: 33) herself points out, requiring that "the category of the moving element and the category of its landing site must agree." This is crucially relevant for the issues under discussion since the position of verbal elements represents a decisive piece of evidence indicating the availability of functional categories. The necessity to place the verb in a higher position is likely to trigger extensions of a projection.

But this leads to the next question, namely what creates this necessity, i.e. what forces the verbal element to appear in a given position? The theory of grammar tells us that it is the presence of elements like [+F], the finiteness operator, [±WH], etc. But, as we have seen, these can appear in different positions, across languages and even language-internally, e.g [+F] being located in IP in French and in German subordinate clauses, but in CP in German main clauses. In

other words, because of the above mentioned twofold problem -
number of functional heads and their feature specification - discovering
the presence of a feature still does not tell the child unambiguously
whether a further functional projection is required. Thus, the problem
remains unsolved from the acquisitional perspective unless we can
identfy the specific type of grammatical information triggering the
correct setting of parameters.

This quest for the unique trigger might best be initiated by
referring back to the empirical findings reported on in section 3.2.,
above. One well-documented observation is the close developmental
relationship between verb placement and finiteness. The former refers
to the position of auxiliaries and modals, to the placement of [±finite]
verbs with respect to the negator, and to the distribution of [±finite]
verbs with respect to complements in German. "Finiteness" is normally
defined in terms of agreement and/or tense; see Meisel (to appear a). In
acquisition, it may initially relate to person agreement only or, to be
precise, to the availability of markers distinguishing at least two gram-
matical persons; these markers can be verbal affixes or clitic pronouns;
see Meisel (to appear a). On the assumption that the grammatical status
of "agreement" may be rendered as a feature [±AGR], [+AGR] seems
to trigger the projection of a verbal functional category subcategorizing
VP.

"Triggering" quite obviously does not simply stand for the
learning of a piece of data. Rather, it implies that the data are assigned a
grammatical interpretation by means of the grammatical knowledge
about the target grammar already available and, of course, principles of
UG. Once a distinction is made between [±finite] verbs, a number of
structural patterns are discriminated instantaneously; cf. (4) and (5) as
opposed to (6) in section 3.1.1. In conjunction with several principles of
UG (Move-alpha, Head-Movement-Constraint, Structure Preservation,
etc.), this results in a raising analysis for verbs, and the projection of
verbal functional categories. The need for two distinct categories,
possibly AgrP and IP, also arises with the recognition of various
structural patterns indicating that verbs may surface in two different
positions above VP. Further restructuring of the previous VP-only
grammar is required by other UG principles. To mention only one
example, both subject-verb agreement and nominative Case assignment
require the subject to appear, at some point, in the specifier position of
IP with the finite verb in its head.

In sum, then, it seems to be possible to explain the implementation of IP and perhaps AgrP as resulting from the emergence of "agreement" as a grammatical notion, whereby data analysis interacts with grammatical knowledge from UG and G_{LI}. At the same time, it appears to be impossible to tear apart the different acquisitional tasks described in (3) and in (7), above. As soon as functional categories are accessible, both the headedness and the finiteness parameter must be set. Again, this follows from constraints imposed by principles of UG. Headedness as well as the position of the finiteness operator are related to Case assignment - among other things - and must therefore be decided upon when the finite verb and the subject are raised. Headedness is apparently not problematic in French. Probably because of the rather rigid SVO surface order, both IP and AGRP are easily identified as head-initial, and [+F] is placed in I. German, on the other hand, offers conflicting evidence in the input data since verbal elements appear in various positions. AGR is nevertheless analyzed as head-final, from the very beginning onwards. Given the observed surface orders (OV, VO, V2, and V-initial) and assuming that V lowering is an unlikely possibility (Chomsky, 1989), this is not really puzzling. Note, however, that it leads to the head-initial setting of IP. What complicates the learner's task of discovering that not only AGRP but also IP is head-final is the V2 phenomenon. Given the lack of COMP and the UG option of placing [+F] in INFL, the input data are successfully analyzed on the assumption of a head-initial setting of IP.

As for CP, it is tempting to claim that it becomes available with the emergence of [±WH], much in the same fashion as AgrP/IP is triggered by the discovery of agreement. Yet UG allows both IP and CP to be specified for WH, and the empirical analysis summarized above suggests that the WH feature is initially indeed placed in IP. It is not until embedded WH clauses emerge that one finds conclusive evidence for the accessibility of CP in developing grammars. Consequently, the hypothesis is that the implementation of CP is triggered by a grammatical feature [+WH], in conjunction with UG principles, here especially licensing conditions for lexically selected WH. Once CP is available, it is also specified for [+F]. This is, again, required by UG. Interestingly, Müller (to appear) observed that by the time COMP emerges, "finiteness" in child grammars of German and French refers to agreement as well as to tense, as required by the target systems. This is to say that the tense operator [+T] appears more or less

simultaneously with COMP. Given that the highest verbal functional category needs to be specified for [+T], it is placed in CP.

At this point, a problem arises concerning headedness. CP, in German as well as in French, is head-initial, and this is unambiguously indicated by surface word order. In fact, precisely these data were said to trigger head-initial setting of IP as long as it was the topmost functional node of the clause; see (17) in 3.2.5. Yet in mature grammars of German, IP is head-final, see (1) in 3.1.1. Although this apparently requires resetting of the headedness parameter, an option which was eliminated above (see section 1.), this is not necessarily so. As has been suggested by Clahsen (1991), what we used to label "IP" may, in fact, be an underspecified functional projection which, when specified for [+WH] and [+F], has all the properties customarily attributed to CP. A head-final IP may then be inserted below CP, unless IP and AgrP cannot be conflated. A more detailed discussion of this issue is not possible here, for reasons of space. But note that as a consequence of the feature approach to the Structure Building Hypothesis, category labels are somewhat arbitrary. What matters is the specific combination of features hosted by a functional head.

As a last point, let me return once more to the question of why [+F] is initially placed in IP in German, rather than in CP. Given that these children are bilingual, one might suspect that this results from transferring the French parameter setting to German. At first sight, this is not entirely implausible in view of the fact that, for most of the children studied here, French, their mothers' language, is the dominant language of the environment until sometime during the third year of life. Yet this cannot explain why German monolinguals make the same parametric choices as the bilinguals. More importantly, perhaps, there is abundant empirical evidence indicating that the two languages are differentiated from very early on, language-specific word order patterns only being used in one language, and only in the appropriate one. Transfer is therefore not a convincing explanation. Another explanation for why children place the finiteness operator in IP, in German too, could be that this is the default option of the parameter. Yet this is only a possibility if the non-default option is at all available. In the absence of a CP node, this is not the case. Appealing to a default option thus amounts to claiming that CP, although available, continues not to be used. It appears to me that such an approach can, at best, be said to make the same empirical predictions as the Structure Building

Hypothesis, while at the same time making strong additional assumptions. In other words, the Structure Building Hypothesis is the most parsimonious solution. Since UG allows for [+F] to be placed in INFL, it predicts that this fact prevents the learner from discovering the necessity for a CP as long as the grammar lacking COMP suffices to analyze the input data.

5. Conclusion

The purpose of this paper has been to examine language acquisition in bilingual children in order to determine whether they develop the same kind of grammatical knowledge in each of the two languages as monolinguals respectively. I believe I have shown that there is, indeed, good evidence that this is the case. The children studied exhibit only quantitative differences in their preference for certain types of patterns in language use, as compared to monolinguals. They do differentiate the two languages from early on, and their grammatical knowledge at each point of development appears to be the same as in monolinguals. There are no reasons to believe that fusion of the two grammatical systems might occur at a certain developmental stage. Instead, the type of language acquisition studied here is justifiably classified as an instance of simultaneous acquisition of two first languages.

This result strongly suggests that the human "language making capacity" is well equipped for handling variability of the input data, a fact which seems to be captured adequately by parameter theory. Variability is obviously not a property of the parameter itself but of language use. This can lead to ambiguity with respect to the potential triggering data which may be structurally ambiguous. Interestingly enough, although I have not found evidence for transfer of parameter setting across languages, mis-setting of parameters within one language (German) has been reported for monolinguals as well as for bilinguals. Language acquisition, as well as historic change, in fact, may very well require the possibility that "unique triggers" for opposing values be present in the data, leading to the implementation of distinct sub-grammars. In fact, the individual's ability to set one parameter on contradictory values may well be a necessary condition for becoming a bilingual. In other words, this type of evidence for conflicting parameter settings might enable the bilingual child to conclude that separate grammatical systems are underlying the incoming data. Otherwise, the

learner might indeed attempt to integrate them into one grammar (fusion).

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NOTES

* This is an expanded version of a paper presented at the GALA conference (Generative Approaches to Language Acquisition) at the University of Durham, September 17, 1993.
1. Commonalities and differences between 2L1 and L2 are explored in a research project, BENZ (Bilingualer Erstspracherwerb und Natürlicher Zweitspracherwerb - Bilingual First Language Acquisition and Natural Second Language Acquisition), currently under way. It contrasts the simultaneous acquisition of French and German by bilingual children with the learning of the same languages by adult immigrants from Spain to France and and from Italy, Portugal and Spain to Germany. This research is supported by a grant from the Deutsche Forschungsgemeinschaft (DFG) to Jürgen M. Meisel; other members of the research group are Natascha Müller and Achim Stenzel; see Müller (1993b).
2. The research group DUFDE (Deutsch und Französisch - doppelter Erstspracherwerb/German and French - the simultaneous acquisition of two first languages) was established at the University of Hamburg in 1981. From 1986 until 1992, this research has been funded by a research grant to the present author by the DFG.
3. When referring to specific utterances, I usually also give days, in addition to years and months. This is not to pretend that a couple of days might make an important difference; rather, it serves to identify a specific recording session.
4. Subject dislocation appears to be more frequent than object dislocation, and objects, when they are dislocated, appear more often to the left than to the right.
5. P's linguistic development is extremely slow, as compared to other children. He is initially six to eight months slower than average, but he catches up between age 3;0 and 4;0.
6. The following conventions are followed in quoting examples: "/" denotes the end of an utterance; parts of an utterances appearing between parentheses "(word)" cannot be interpreted unambiguously in the recording; incomprehensible sequences are marked as "(X)"; a dot "." indicates a pause within an utterance, a hyphen "word-" that the utterance was discontinued.

"_" marks rising intonation, and phonetically transcribed sequences appear between square brackets "||".

7. I do not, in fact, see compelling reasons for assuming the existence of an AGRP; rather, as I argue in Meisel (to appear a), agreement denotes a grammatical relation and can be marked on verbs in VP as well as in IP or CP.

8. A number of authors, see Clahsen (1986), Meisel (1990), found that, initially, children only use markings for one grammatical person, typically 3rd sg. I believe I have shown, see Meisel (to appear a) that this is a default marking for VP-internal specifier-head relationship. What matters in the present context is that verb movement occurs only after more than one person is morphologically marked.

9. Pierce (1989) contradicts this interpretation of similar data in the corpus she analyzes. Yet in her tables too one finds that OVS structures disappear as sOVS patterns emerge.

10. I ignore here the special case of Ivar, studied in great detail by Müller (1993a, to appear).

11. I am assuming here that the set of features itself is not parameterized. Otherwise, the learner would have to select from UG the appropriate subset of features.

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