KEYNOTE ARTICLE

Bilingual language acquisition and theories of diachronic change: Bilingualism as cause and effect of grammatical change*

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Children acquiring their first languages are frequently regarded as the principal agents of diachronic change. The causes and the precise nature of the processes of change are, however, far from clear. The following discussion focuses on possible changes of core properties of grammars which, in terms of the theory of Universal Grammar, can be characterized as reflecting different settings of parameters. In such cases, learners develop grammatical competences differing from those of speakers of the previous generation who provided the primary data serving as input for the developmental processes. It has been argued that reanalyses of this type must be conceived of as instances of transmission failure. Yet acquisition research has demonstrated that the human Language Making Capacity is extraordinarily robust, thus leading to the question of what might cause unsuccessful acquisition. Changing frequencies in use or exposure to data containing ambiguous or even contradictory evidence are unlikely to suffice as causes for this to happen. Language acquisition in multilingual settings may be a more plausible source of grammatical reanalysis than monolingual first language development. The study of contemporary bilingualism can therefore contribute to an explanation of diachronic change. Yet one such insight is that simultaneous acquisition of two languages (2L1) typically leads to a kind of grammatical knowledge in each language which is qualitatively not different from that of the respective monolinguals, obliging us to look for other sources of transmission failure. 2L1 acquisition in settings where one language is "weaker" than the other has been claimed to qualify as such. But I will argue that even such problematic cases do not provide convincing evidence of reanalysis. If, on the other hand, children receive sustained input from second language learners, or if their onset of acquisition is delayed, this can indeed lead to incomplete acquisition. I conclude that successive acquisition of bilingualism plays a crucial role as a source of grammatical change. In order for such changes to happen, however, grammar-internal and language-external factors may have to concur.

Keywords: diachronic syntax, bilingual first language acquisition, parametric change

1. Bilingual acquisition and grammatical change

Language development happens in many different contexts and takes on a considerable number of different forms, and the language sciences have branched out into a corresponding number of disciplines, each dedicated to one type of development, e.g. monolingual and bilingual first language acquisition, second language acquisition, impaired language acquisition (SLI), the genesis of pidgins and creoles, and diachronic change. In fact, it may not be unreasonable to also include instances of regression

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rather than expansion, e.g. language attrition or loss. Each of these phenomena is commonly studied by different subfields of linguistics. This diversification is justified by the fact that in each of these cases different factors are operative in determining the course of development. But there can be no doubt that important commonalities also exist, shared in part or totally by the various types of development. Consequently, the division of labour among research disciplines may represent an obstacle to achieving an adequate understanding of the driving forces and the mechanisms determining linguistic development. In fact, it is very likely that deeper insights into the mechanisms of development can only be attained by taking into consideration not merely the particularities of one type but also the commonalities across several or all of them.

In this paper, I intend to discuss issues which are potentially of common interest for studies of grammatical development in language acquisition, especially in bilingual settings, on the one hand, and for diachronic language change, on the other. In both cases, an adequate treatment of the phenomena under investigation depends on whether we can identify structural areas particularly susceptible to change, the actual processes of reanalysis, and, crucially but most difficult, language internal as well as external factors causing such modifications of the system. If this happens at a remote point in time, a direct observation and analysis of such processes is obviously impossible. But since it can be argued that bilingualism is possibly a necessary though not sufficient cause and certainly a necessary consequence of grammatical change, as will become apparent in what follows, my claim is that insights gained by the study of contemporary bilingualism – whether acquired simultaneously or successively – can contribute in essential ways to an explanation of diachronic change. In other words, by examining the present, we may be able to explain what happened in the past (see Labov, 1975), and, reversing the perspective, chronologically distant developments can put problems on current research agendas which might otherwise be neglected. In the one case we have relatively easy access to the results of developments but not to the processes which have brought them about, and in the other, we are able to study ongoing processes but we do not necessarily know their ultimate results.

The issue I want to focus on is the problem of the learnability of morphosyntactic systems. The very notion of grammatical development implies that speakers of a language, at a given point in the course of development, rely on a system which differs in at least one aspect from those at earlier or later points. Consequently, different generations of speakers of this language must acquire systems which differ from the ones used by the previous generations, and each state of the developing system is subject to learnability conditions. Formulated in this way, this statement may appear trivial, but its interest should immediately become apparent if one looks more closely at the conditions for the implied process of change to become possible. Adopting the theoretical perspective suggested by the theory of Universal Grammar (UG), an obvious requirement is that each of the grammatical systems in question conforms to the principles of UG which, by definition, spell out the properties of the human language faculty. Structural considerations alone, however, will not suffice. Rather, it is necessary to demonstrate that the structural changes in question are actually implemented in the grammatical knowledge system of the speakers of the language concerned. In other words, it needs to be shown that the mental representations of such knowledge system can be reorganized accordingly.

Note that by adopting this perspective focusing on the reorganization of mental grammars, this study is designed to investigate change at the level of grammatical knowledge or of I-language, an internal entity of the individual, as opposed to E-language, "E" suggesting "external", i.e. the overt products in language use; see Chomsky (1986). Changes reflecting different types of use, e.g. an increase or decrease in the frequency of occurrence of specific forms or constructions are thus not the object of our discussion. Nor will cases be dealt with where surface devices encoding a specific grammatical notion change but the underlying notion remains unaffected, e.g. if overt case markers are dropped or replaced by other kinds of devices. Some instances of grammaticalization also correspond to this second case. If, for example, referential lexical items turn into markers encoding an already available grammatical function, this does not involve a change of the type to be discussed here. To avoid possible misunderstandings, these are not only legitimate but indeed crucial issues for diachronic studies of language – yet they are not directly relevant to the question pursued in this paper, which is concerned with the emergence of new grammars.

We can speak of a "new" grammar if it differs from the previous one in at least one of the structural options which it generates. The type of variation across grammars is constrained by the nature of the human language faculty, and any adequate theory of grammar needs to specify the properties shared by all human grammars as well as those in which grammars of various languages differ. The latter are the ones which concern us here since any feature occurring in human grammars can, in principle, emerge in the course of development of a specific language, and children may be expected to explore all the options offered by the Language Making Capacity (LMC). These options are the ones which also define the range of variation across grammars. The theory of UG attempts to explain this variation in terms of grammatical parameters.

Universal Grammar comprises invariant principles designed to capture formal properties common to all grammars, as well as parameterized principles. The idea

is that some principles of UG do not account exhaustively for the grammatical properties to which they refer; instead, parameterized principles offer several options, i.e. parameters are left unspecified by UG and must be set to one of the possible values in each individual grammar. It is important to note that the principles as well as the parameterized options are given by UG. This can be illustrated by the probably most frequently discussed example, the Null-Subject Parameter. A principle of UG states that a sentence necessarily contains a structural subject. Languages differ, however, in whether they require that this structural position be lexically filled or not. This option, namely the possibility to grammatically license a lexically empty subject position, distinguishes null-subject from non-null-subject languages and can be thought of as the result of a syntactic parameterization.

An important feature of the notion of parameter as suggested by Chomsky (1981, p. 6) is that parameters and their possible values are defined at an abstract level of grammatical structure rather than in terms of surface properties of the target language. As a consequence, setting a parameter to a specific value typically causes a CLUSTER of superficially unrelated grammatical properties to appear in the language. Subsequent developments of Parameter Theory (PT) have led to doubts about the theoretical well-foundedness of classical parameters like the Null-Subject Parameter, more recently referred to as "macroparameters", favouring instead more narrowly and locally defined ones. The idea of "microparameters" goes back to the suggestion by Borer (1984) and Chomsky (1989), who proposed that parameters should be defined exclusively in terms of properties of functional elements. More specifically, it has been argued that parameters refer to uninterpretable features of functional heads, like T (Tense) or C (Complementizer). The placement of finite verbs can serve as an illustration of what this means. It has been suggested that the feature [+F] (finiteness) may be located in either T, as in Romance languages, or in C, as in German. A principle of UG requires that finite verbs be moved to a functional head above VP; the parametric choice states that [+F] may be instantiated in either of these functional elements. A comprehensive and widely accepted version of Parameter Theory is currently not available, but it seems that both micro- and macroparameters need to be made available by grammatical theory; see the discussion in Biberauer (2008). Importantly, both types of parameters can account for the clustering effect, i.e. the fact that a number of surface phenomena depend on the setting of a single parameter. What matters for the present purpose is that grammatical variation – synchronically across languages as well as diachronically in language acquisition and historical change – can be described and hopefully explained in terms of parametric variation.

Returning now to the issue of emerging grammars in language development, ontogenetically or phylogenetically, a crucial observation which can serve as the starting point of our discussion is that parameter settings do not change across the lifespan. It has been shown repeatedly that parameters once fixed on a specific value cannot be reset in the course of first language development; see, for example Clahsen (1991) and Meisel (1995) for a summary of this debate. More importantly, in the present context, there is no evidence that syntactic parameters set to the target value of a native language can be changed in the course of adult life. Patterns of language use, on the other hand, may change, e.g. in response to alterations of the speech norms of the community. As Sankoff (2005) and Sankoff and Blondeau (2007) have demonstrated, individuals may, in fact, adapt their language use during adulthood to innovative patterns resulting from generational change. Such lifespan changes may have profound consequences, but they do not involve reanalyses of grammars, i.e. we do not find evidence suggesting that mental representations of parameterized grammatical knowledge are subject to modifications after childhood. Even attrition of syntactic knowledge only seems to affect a person's ability to USE the knowledge developed early on in life; see Flores (2008, 2010).

The conclusion which I draw from these observations is that grammatical change involving reanalyses of syntactic patterns and leading to the reorganization of mental grammars, is most likely to occur in the process of language transmission. This is in tune with the claim commonly made in generative studies of diachronic change, according to which first language (L1) learners are the locus of change. The well-attested robustness of the LMC, however, suggests that in order for this to take place, the ambient language(s) and thus the primary linguistic data accessible to the learners must contain information triggering the required analyses. Bringing together two claims defended in the literature, that children acquiring their L1 are the locus of change and that language contact is a crucial if not a necessary factor triggering change, I suggest turning to bilingual acquisition as a plausible setting favouring morphosyntactic change. Yet contrary to what has been suggested in the literature on historical linguistics, I will argue that the SIMULTANEOUS acquisition of two or more languages, i.e. bilingual first language acquisition, typically leads to a kind of grammatical competence which does not differ qualitatively from that of the respective monolingual L1 learners. My claim is that cross-generation reanalysis of grammars is most likely to happen in SUCCESSIVE acquisition of bilingualism or if second language speakers provide a substantial amount of input in monolingual or bilingual first language development.

The structure of this paper is as follows: First, I outline some hypotheses about diachronic change characterizing

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current work in historical linguistics, leading to the claim that the language learning child can be seen as the principal agent of grammatical reanalysis. Section 3 argues that identifying language acquisition as the locus of grammatical change does not necessarily lead to a more adequate understanding of the emergence of new grammars. Only if triggers of reanalyses can be discovered in the primary linguistic data, will we get closer to this goal. A brief summary of three frequently mentioned causes of grammatical reanalysis, changing frequencies in language use, exposure to primary data containing ambiguous or contradictory evidence, and language contact, concludes that neither of these can plausibly be argued to suffice as an explanation of reanalysis. Section 4 therefore explores the claim according to which diachronic reorganization of grammars results from acquisition failure. Three scenarios are examined where this is likely to happen. A review of studies dealing with cases where one of the languages of bilinguals appears to be "weaker" than the other, leads to the conclusion that they do not exhibit imperfect transmission nor do they show cross-linguistic influence between grammatical competences. If, on the other hand, the onset of acquisition is delayed, or if children are primarily or exclusively exposed to sustained input from second language (L2) learners, incomplete acquisition may indeed be the result. Finally, in cases of reduced access to the primary linguistic data, the available evidence is inconclusive. In consideration of these findings, I hypothesize in Section 5 that grammatical change of the sort discussed here is most likely to happen either if substantial parts of the speech community are themselves L2 learners, or if the data available contain evidence not compatible with any of the grammars being acquired, e.g. in case of input from L2 learners of the target language(s). This entails that both child and adult learners can be agents of morphosyntactic change. The important role attributed to L2 learners, however, leads to the prediction that parametric changes occur less frequently than is normally assumed. This prediction is corroborated by the fact that a number of alleged instances of diachronic changes of settings of syntactic parameters can be explained differently. The main claims and findings are briefly summarized in Section 6.

2. The developmental problem in diachronic change

The developmental problem, as it is understood today, refers to the notion of a grammatical system constituting the core of the linguistic competence of the speakers of a linguistic community. It is therefore only fairly recently that historical linguistics has begun to focus on the issues related to such concerns, when learnability became a primary concern of linguistics after the COGNITIVE TURN in the 1950s and 1960s. In this respect, current research possibly shares more common interests with studies carried out in the nineteenth and early twentieth century than with early structuralist work, especially since philological research, which was almost entirely dedicated to the study of historical change of languages, included approaches which, in modern terms, can be qualified as "psycholinguistic" ones.[1]

However, a hypothesis crucial for the current debate was put forth already in the nineteenth century by Paul (1880) who suggested that processes operating in first language acquisition play an essential role in an explanation of language change.

> Es liegt auf der Hand, dass die Vorgänge bei der Spracherlernung von der allerhöchsten Wichtigkeit für die Erklärung der Veränderung des Sprachusus sind, dass sie die wichtigste Ursache für diese Veränderung abgeben. (Paul, 1920, p. 34)[2]
>
> [It is obvious that the processes of language acquisition are of prime importance for the explanation of changes in language use, that they represent the primary cause of these changes.]

More recently, Andersen (1973) proposed an influential model of diachronic change in which a similar claim is made. Since children do not have direct access to the mental grammars underlying the language use of their parents' generation, they need to reconstruct this grammar, based on the output produced by the adults and guided by their innate language making capacity. This process results in grammatical change if the language learning children interpret the data differently, as compared to the adults' grammar and develop a grammatical system which can be understood as involving a REANALYSIS of parts of the target grammar.

Importantly, reanalysis need not lead to differences in use. In other words, although this scenario implies the existence of two different grammars across generations, the language use based on these grammars need not differ, i.e. the output may be superficially identical in both cases, in at least some contexts. This can be illustrated by the use of SVO order in main clauses of verb-second (V2) languages, like German, and in non-V2 languages, like most modern Romance languages; see Kaiser (1998, 2000, 2002). In V2 languages, only a single major constituent can precede the finite verb. Traditionally, this fact is captured by stating that both the initial constituent and the finite verb appear in the pre-clausal field ("Vorfeld" in the terminology of the German Structuralist tradition). In more recent grammatical theorizing, this

[1] Scholars like Heymann Steinthal or Wilhelm Wundt viewed language as reflecting psychological properties, although their psychological notions were, of course, rather different from those of current psycholinguistics; see Lightfoot (2006, pp. 39f.).

[2] For Hermann Paul, however, it is the individual's "mental grammar" which is the object of linguistics, and this is constantly changing; see Murray (2010) for a discussion of these views.

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corresponds to the Complementizer Phrase (CP), whereas the clause proper is constituted by the Tense Phrase (TP). Here, the V2 effect is explained as resulting from movement of the finite verb to C, the head of CP, whereas in non-V2 languages it is moved to the head of TP, i.e. it remains within the clause proper. The potentially problematic case for language acquisition emerges when the target-conforming structural position of the verb (in the pre-clausal field, i.e. in CP, rather than within the clause, i.e. in TP) is not unambiguously signalled by surface order. This situation arises when the initial position is occupied by the subject. In this case, the resulting surface order is SV, in V2 as well as in non-V2 languages, because in the latter both the subject and the verb appear in the pre-clausal field. Thus, in spite of substantially different structural properties, the surface order of subject, verb, and object may be identical in both cases. Only if a constituent other than the subject is initialized, e.g. an object, an adverb or an embedded clause, will the underlying differences become apparent in surface word order: in V2 languages the subject then FOLLOWS the finite verb in second position (XVS) and it PRECEDES the verb in non-V2 languages, resulting in a sequence with the verb in third position (XSV). However, even an XSV sequence may be ambiguous, as argued by Platzack (1995), because, subsequent to cliticization of pre-verbal subjects, these are claimed to have been incorporated into the finite verb. However, children exposed to utterances of this type may fail to analyze the subject clitic (SCL) as incorporated into the finite verb and interpret it, instead, as an independent constituent; see Kaiser (2002, p. 94). Thus, children may have analyzed a Middle French sentence as in (1) by assigning a clause-internal position to the verb, as opposed to adults in whose grammar the verb is raised to the pre-clausal field (C), assuming Old or Middle French were indeed V2 languages; see (2).

(1) En vérité, **il** **a** esté et est
in truth he has been and is
bon valeton.
good servant.DIMINUTIVE
"He has, in fact, been and is a good servant."

(2) *Adult grammar*
$[_{CP}$ (XP) $[_{C'}[_{COMP}$ SCL+$V_i]]$ $[_{TP}$ $t_i]]$
Child grammar
[(XP) $[_{TP}$ SCL V]]

Leaving further details aside, we may retain three points from the discussion in the literature on language change briefly alluded to here. The first consists of the hypothesis, broadly accepted at least among researchers following the generative approach, asserting that the language learning child is the LOCUS of change. The second point refers to possible CAUSES of grammatical changes. In the generative literature, a frequently entertained hypothesis is that structural ambiguity is a major reason for this to happen. The third point concerns the actual PROCESS by which the transition from one system to the other may occur. In this case, a commonly held view is that children analyze the primary data encountered in their linguistic environment differently from the grammars actually underlying the adult language use. All this demonstrates clearly that the task of explaining the developmental problem in diachronic language change has been transferred to language acquisition studies since grammatical reanalysis must be understood as a process happening in the course of acquisition. From this, in turn, it follows that the plausibility of the scenario suggested as an explanation of grammatical change needs to be tested against what is known about the mechanisms of language development.

Note that, from what has been said so far, it might appear as if the adequate point of reference for diachronic change was monolingual first language acquisition. In reality, however, the contexts which might possibly favour structural change are bilingual situations. At any rate, the scenario outlined above implies that different grammars are used across generations, although this may not be immediately apparent in language use.[3] Assuming this to be an adequate account of the facts of diachronic change, one must conclude that it leads, at least temporarily, to cross-generation bilingualism which is likely to persist for extended periods of time. Moreover, one may reasonably question the assumption that all children facing this kind of learning context will be induced simultaneously to reanalysis, all focusing on the same structural properties of the target grammar, and all of them performing the same changes. More plausibly, one should also expect different grammars to emerge even within the same generation. These considerations necessarily lead to the conclusion that explaining language change by reanalysis in the course of language acquisition results in bilingualism which, in turn, is a prerequisite for diachronic change to occur, triggered by system-internal factors.

But even if it can be argued that grammatical change necessarily happens in bilingual settings, the question remains as to whether language contact or language internal variation will suffice as a cause for grammatical reanalysis. Remember that this seems to imply that children fail to develop the grammatical knowledge underlying the speech of their parents' generation, speech providing the input to their acquisition process. In what follows, I will argue that, at least as far as the setting of parameters is concerned, "transmission failure" (see Section 4, below) is unlikely to happen in simultaneous

[3] The different grammars can underlie different languages or different dialects of one language. Throughout this paper, my assumption is that dialects in contact can play the same role for diachronic change as languages in contact.

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first language acquisition. Only in successive acquisition of bilingualism might L2 learners fail to reconstruct the target grammar, based on the information provided by the primary linguistic data. Alternatively, monolingual or bilingual children may develop a grammar distinct from that of the previous generation if they are exposed to an L2 variety of the target language. In this case, however, change is not the result of transmission failure but due to exposure to different triggers. The latter scenario corresponds to the suggestion by Weerman (1993), Kroch and Taylor (1997), Lightfoot (1997), or Kaiser (1998, 2000, 2002) who argued that reanalysis only happens when children are exposed to data containing conflicting evidence. Since this situation arises only if L2 learners are involved, Weerman (1993) and later also Kroch and Taylor (1997) have suggested that what causes grammatical change is the exposure of children to speakers who are themselves "second language learners with an imperfect command" of the target language. In other words, the crucial data are not merely structurally ambiguous, they contain structural information favouring analyses which cannot be generated by the adult native grammar.

3. (Bilingual) first language acquisition as a testing ground for theories of diachronic change

Let me now turn to the question of whether the scenario of language change outlined in the preceding section can indeed be corroborated by findings from acquisition research. Recall that the crucial issue under review here is the developmental problem, i.e. the explanation of the transition from one system to another. By shifting the problem from diachrony to ontogeny, one faces an at least apparent paradox which has been termed the "logical problem of language change" (Niyogi & Berwick, 1995). As Brandner and Ferraresi (1996, p. 14) put it:

> If every generation acquires the grammar of their parents, how can languages change? It should be expected that grammars remain constant, since linguistic change implies that there is at least one generation whose grammar is different from that of the parental generation and who thus acquire a "wrong" grammar.

Note that by addressing this conceptual difficulty in the context of language acquisition studies, we need to reverse the habitual perspective aiming at an explanation of what enables children to acquire successfully the adult grammatical system, and we must attempt, instead, to explain in a non-ad-hoc fashion the possibility of unsuccessful or, rather, partially successful acquisition. What is intended by the expression "partially successful" is that the children acquire grammatical knowledge which is not fully equivalent to the grammars underlying the production of the utterances which served as input for the learning process.

Such a change of explanatory goals is by no means a trivial matter. It is generally assumed in acquisition research that first language development happens relatively fast and uniformly across individuals, and that it is ultimately successful in non-pathological cases. These characteristics – rate, uniformity and success – are commonly attributed to the guidance by the innate language faculty. In the theoretical framework adopted here, Universal Grammar plays an essential role in this, since all human grammars, including developing ones, must conform to the principles of UG. In this way, one can account not only for the uniformity of development but also for rate and success, since a substantial part of grammatical knowledge need not be learned inductively, by trial and error, but is assumed to be genetically transmitted. From this it follows that the content of principles of UG is not learned in the usual sense. But, as mentioned in the preceding section, some of these principles are underspecified by UG, i.e. they offer more than one option, and the implication for acquisition is that the child has to set these parameters to the value required by the target grammar. In other words, although the options offered by the parameterized principles are given by UG, the choice results from the child's linguistic experience. Parameter setting may therefore be understood as experience-driven triggering of implicit knowledge available prior to experience. For this reason, it is a conceptually and empirically important domain of acquisition research: it represents the intersection of innate and inductively acquired knowledge. Assuming this perspective, language acquisition is characterized, first, by universally invariant properties defined by non-parameterized principles, and secondly by language particular aspects which need to be learned by experience. Parameter setting thus represents a third type of acquisitional process exhibiting both characteristics. What matters in the present context is the question of how parameter setting is triggered. As Roberts (1993, pp. 158f.) has pointed out, reanalysis, as illustrated by (2), above, can be thought of as

> relations between the E-language of one generation (ambiguous trigger experience susceptible of a 'simpler' analysis . . .), and the I-language of a subsequent generation.

Reanalysis need not necessarily imply changes of parameter values, but, conversely, it is a necessary condition for changes in parameter settings to happen, and it is this type of change which characterizes radical or "catastrophic" or "bumpy" (Lightfoot, 1997, 2006) diachronic change, for only analyzed structures, or reanalyzed ones in this context, can serve as triggers for parameter setting. Raw data do not function as input for learners, they are merely acoustic events (in case of oral productions); only once they have been assigned a structural interpretation by learners, will they serve as input for learning processes; see Carroll (2001). This observation applies to all types of possible input, including

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triggers for the setting of parameter values, i.e. they need to be defined in terms of their structural properties, as is also argued by Fodor (1998).

An important question, with respect to the issues at stake here, is whether parameters can be set to a wrong value in normal cases of monolingual or bilingual first language development. In the literature on monolingual acquisition, it has been argued repeatedly that the notion of parameter requires that for every possible setting of parameters, there must exist a specific structural configuration triggering it, see Meisel (1995) for a summary of the arguments supporting this argument. In fact, Fodor (1998) has presented strong support for the idea of "unambiguous triggers". This, in turn, has occasionally been understood as excluding the possibility of erroneous settings. Note, however, that this need not be correct. If ambiguous data of the sort illustrated by example (1) above do occur in the child's linguistic environment, it is, in principle, possible that the child learner arrives at only one of the possible analyses. If this happens to be one which differs from that required by the adult grammar, i.e. in case of reanalysis, and if it contains the structural configuration which functions as the trigger for a specific parameter setting, the result is an instance of an erroneous setting of a parameter triggered by an unambiguous trigger. In other words, primary data which are ambiguous in that they allow for more than one structural interpretation may, in principle, cause erroneous parametric choices based on grammatical input functioning as an unambiguous trigger. In view of the importance of this issue for an understanding of language development, it is surprising that only very few studies explicitly address the question of whether such situations actually arise in first language acquisition; but see Fritzenschaft, Gawlitzek-Maiwald and Tracy (1990), Müller (1994), or Tracy (1991, 1995).

Let us now return to the most frequently suggested solutions to the developmental problem in language change, keeping in mind these brief considerations regarding the setting of parameter values and the necessary triggering experience. The main question is what causes changes to happen in (bilingual) language acquisition which can be characterized as instances of reanalysis; see Lightfoot (1991). The prime candidates nominated as possible causes for this type of change are (i) changes in the frequency of use of particular constructions, (ii) structural ambiguity of constructions, and (iii) exposure to conflicting evidence in situations of language or dialect contact.

Frequency, although a much debated issue in historical linguistics, is by itself a poor candidate as a factor causing developmental changes, if the hypothesis is that reanalysis happens in a context where the children's input is the output of a "homogeneous" grammar. This is not to say, of course, that a minimum number of occurrences might not be a necessary prerequisite. But estimates of minimum frequency based on theoretical considerations are not available, and it is even difficult to make an educated guess. Lightfoot (1997), nevertheless, attempts to do just that. Reviewing studies on word order patterns, he concludes that a frequency of 17% is not sufficient to trigger the setting of a parameter to a specific value, whereas 30% of occurrences do seem to have the expected effect. He concludes that "somewhere between 17% and 30% is a phase transition" (Lightfoot, 1997, p. 179). In my view, this line of argument is highly problematic. Most importantly, I see no justification for the implicit claim that the kind of data available for diachronic studies, especially medieval texts, might reveal any reliable information about frequency of use in colloquial language, let alone child-directed speech, given that it is difficult enough to discover solid facts about spoken language. Even more seriously, language acquisition research is not even able to specify a quantitative threshold for parameter settings in contemporary analyses, and analyses of grammatical development have demonstrated again and again that low frequency items are acquired without problems. Decreasing frequency alone is therefore very unlikely to be a sufficient cause of grammatical restructuring. Most importantly, even if we were able to quantify the decrease in frequency of a given construction, it is by no means clear what the implications for language acquisition might be. Unless the primary linguistic data contain some information about alternative options, the child has no choice but to continue analyzing the infrequent one.[4] Finally, the validity of this proposal is further weakened by methodological problems; see Kaiser (1998, 2002), who mentions, among other things, the narrow data base on which the estimate by Lightfoot (1997) is calculated.

My claim, thus, is that a change in frequency of particular phenomena in the primary linguistic data does not, by itself, suffice as a cause for reanalysis. Rather, the grammatical nature of the data needs to have changed as well, i.e. the learners must be offered alternative options in the input. Put differently, it seems improbable that bilingualism could arise in monolingual settings, even if one takes into account the fact that monolingual settings also exhibit a certain amount of variability of the primary linguistic data and that there is no truly "homogeneous" input. This variability has led Roeper (1999) to postulate the idea of "universal bilingualism". Similarly, Tracy (1998), who, referring to register variation in languages, concludes that this implies "syntactic diglossia within individual authors" – in other words, dialectal 'multilingualism'; see Kroch (2001, p. 722) for a similar argument. Note, however, that the decisive factor is the presence of conflicting evidence in the

[4] This point has been brought to my attention by Georg Kaiser (personal communication).

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child's linguistic environment, more specifically structural triggers for different parameter settings. In conclusion, then, frequency changes may only be expected to cause reanalysis if reinforced by one of the other two factors mentioned, structural ambiguity or presence of more than one grammatical system in the linguistic environment of the learner.

Consider then the second possible factor causing change, namely structural ambiguity. It should not be difficult to see that this hypothesis too is problematic in a number of ways. Most importantly, in order for it to be considered as a plausible solution to the developmental problem, it must predict in a non-ad-hoc fashion which of the possible analyses learners will prefer. It has been argued that this can be achieved if one assumes that, faced with structurally ambiguous constructions, children opt for the less complex or simpler solution; see Roberts (1993), among others. Surprisingly, however, this solution attempts to explain the preference for one of the options in terms of principles of UG (Economy of Derivation) and defines the Least Effort Strategy (LES) in syntactic terms, referring to length of syntactic chains, although it is recognized that "simplicity", in this context, relates to principles of acquisition, notably the LES. This is clearly not satisfactory, for one would expect learning principles to be defined in terms of learnability or processing considerations and to be empirically corroborated by psycholinguistic and acquisition research. Given that this kind of evidence is lacking, an explanation of the learner's implicit choice in case of structural ambiguity is a mere stipulation when it refers to the principle of economy. Perhaps even more importantly from the perspective of language acquisition, it is not obvious how this approach would explain how the less economical option could ever be chosen by the language learning child, as is clearly the case in the acquisition of V2 languages which exhibit the kind of ambiguity illustrated by example (1). If one was to postulate a subsequent reanalysis driven by further experience with the primary linguistic data, this would run into further serious acquisition problems since "unlearning" of acquired grammatical knowledge is a notoriously difficult problem for which no satisfactory solution has been proposed as yet. In other words, psycholinguistic considerations do not support the proposal of economy-driven change as a convincing solution to the problem of explaining morphosyntactic change.

Yet even if one puts such considerations aside, one finds that from a theoretical perspective, this proposal does not fare much better. In fact, Hale (1998) as well as Lightfoot (2000), referring to the choice between overt *versus* covert verb movement, argue that reanalysis cannot be explained in terms of the LES. Hale (1998, p. 13) observes that in order for learners to be able to assign the simplest parse to an input string, they need to posit a numeration, determine that this numeration can converge at L(ogical)F(orm), and posit the appropriate features on the functional heads, allowing convergence at P(honetic)F(orm). He concludes: "As Chomsky (1995: 227) has pointed out, Economy of Derivation is relevant only to the evaluation of derivations involving the same numeration. It cannot, therefore, be invoked to choose between these two competing hypotheses since they involve different numerations" (Hale, 1998, p. 14).

Some objections against this approach might perhaps be overcome by combining the ambiguity with the frequency argument, claiming that high frequency leads to reanalysis if the type of construction triggering a different setting of a parameter, as compared to the value required by the grammar of the previous generation, occurs significantly more frequently in the child's linguistic environment. Leaving aside the problem of explaining what might cause such shifts in frequency (see Kaiser, 2002, pp. 114ff.), this suggestion is still flawed by a number of serious weaknesses. An obvious one is that the argument only holds if the most frequently used pattern is NOT ambiguous, for, otherwise, BOTH parameter values are favoured by the increasing number of uses. Most importantly, the primary data incontestably still contain unambiguous evidence favouring the setting of the parameter to the value required by the grammar of the previous generation – evidence which the child would have to ignore. The latter assumption, however, is in conflict with findings in acquisition research which has shown that high frequency is not a necessary requirement for children to be able to set parameters; see, for example, Carroll (1989), Fodor (1998) and Meisel (1995). In fact, this is precisely what is generally seen as an essential difference between inductive learning as opposed to triggering, and Fodor (1998) argues convincingly that, in case of structural ambiguity, the acquisition mechanism refrains from fixing the parameter on one of the possible values until unambiguous evidence is encountered. In sum, if certain constructions allow for more than one grammatical analysis, our current understanding of processes of first language acquisition suggests that this should not entice the child to opt for the apparently simpler or less complex solution but for the one favoured by unambiguous evidence, even if this happens to be used significantly less frequently.

The third factor suggested as an explanation of the developmental problem in language diachrony which I want to consider here is language or dialect contact, i.e. the presence of more than one grammatical system in the child's linguistic environment. The basic idea is that, in contrast with structural ambiguity, conflicting evidence may constitute sufficient cause of reanalysis, provided that triggers for opposing parameter values are contained in the input because learners encounter data from two or more different systems in the acquisitional

setting. In some respects, this situation is not entirely different from the one just discussed, and some of the objections raised there also apply here. First of all, if more than one analysis of the input is possible, no matter whether this is due to ambiguity or to a situation of language contact, there is no *a priori* reason for the child to opt for a specific one of them. At best, one should predict that the children of the new generation will choose one OR the other analysis. In this case, one still needs to explain why the one differing from that of the previous generation eventually wins. Recall that neither frequency nor simplicity provide a solution to this problem. More importantly, the presence of conflicting information concerning the value a parameter should be set to, is, quite obviously, a defining characteristic of bilingual first language acquisition. We can therefore refer to a considerable body of research carried out over the past decades. For reasons of space, I must refrain from summarizing even the most pertinent results; see Meisel (2001) for a critical overview. The punch line, with respect to the present discussion, is that conflicting input typically does not lead to the children incorporating fragments (e.g. specific parameter values) of one grammar into the other, as is assumed by Lightfoot (1999, p. 12), who imagines children to "converge(d) on a single grammar . . . , in a kind of creolization". All the available evidence suggests that fusion of grammatical systems is not what normally results from the simultaneous acquisition of two or more languages. Rather, it indicates that children are capable of differentiating the grammatical systems from early on, and conflicting evidence on parameter values has been argued to be the major cause of the differentiation of systems and for not treating this type of variability as a property of a single system; see Meisel (1993).

In sum, this short review of three possible causes for grammatical reanalysis – changes in the frequency of use of particular constructions, structural ambiguity of constructions, or exposure to conflicting evidence in contact situations – suggests that none of them, taken alone, suffices as an explanation of grammatical change as a change of parameter settings. The evidence scrutinized here is, of course, not sufficient to definitely rule out that morphosyntactic change can be caused by one of these factors, or to deny the possibility of internally motivated change. Rather, the purpose of this brief look at possible causal factors has been to ask whether they can help to explain reanalysis in the course of transmission of grammatical knowledge, if we assess their possible roles in the light of what is actually known about mechanisms of grammatical development, rather than entertaining stereotypical notions of language acquisition. The answer is that none of them qualifies by itself as a plausible explanation of change when examined from the acquisition perspective. Dialect or language contact, for example, may indeed be a necessary cause of grammatical change, see Thomason and Kaufman (1988) for a detailed discussion of this issue, but in view of the results of extensive research on first language development in bilingual settings, one must conclude that it is certainly not a sufficient condition for reanalysis to happen. In the following section, I will therefore examine simultaneous and successive bilingual acquisition in more detail, in search of additional factors which, in combination perhaps with the ones mentioned above, might account for grammatical reanalysis resulting in morphosyntactic change.

4. The quest for transmission failure

The present discussion proceeded from some reflections on the developmental problem as it presents itself with respect to studies attempting to explain language change. It has become apparent that the notion of "reanalysis" plays a crucial role in a possible solution to the problem and that children acquiring first languages are suspected to be the principal agents in this process of reorganizing grammars. The surprising result, in my judgement, of the ensuing brief review of possible causes of the changes in question is that apparent solutions become increasingly opaque rather than transparent as one examines them from an acquisitional perspective. The relative ease and the ultimate success of grammatical development in first language acquisition as well as the incontestable ease with which children acquiring two or more languages simultaneously succeed in differentiating grammatical systems, precisely these positive results turn out to be major obstacles for explanations of language change which is "by definition a failure in the transmission across time of linguistic features" (Kroch, 2001, p. 699). Phrased a bit more crudely, we apparently have to rely on the possibility of systematic failure in acquisition in order to be able to explain grammatical reanalysis in the course of L1 development, i.e. profound and radical changes of the underlying system rather than merely quantitative shifts in usage. In fact, the insight that grammatical systems are considerably less prone to radical changes than might appear is not entirely new in historical linguistics. From a generative perspective, this amounts to saying that parametric changes are not as common as had previously been claimed; see Kaiser (1998, 2002). Longobardi (2001), in his Inertial Theory, even asserts that syntactic change should, ideally, not happen at all and must therefore be caused by external factors. Since we know that, in the reality of the history of languages, such changes do arise, we must continue our quest for the causal factors. Consistent with the claim that bilingualism is a necessary condition for change, the previous discussion incites us to investigate the implications of this hypothesis. As mentioned at the end of Section 2, I will argue that one possible scenario

implies that monolingual or bilingual children encounter the crucial structural information in L2 varieties of the target languages in their linguistic environment. This, however, is not an instance of "transmission failure"; rather, the triggering experience for reanalysis is provided by successive bilinguals. But before turning to this case, I will discuss in more detail the possibility of failing transmission of grammatical knowledge, scrutinizing simultaneous as well as successive bilingualism in search for cases where bilingual acquisition is not entirely successful, thus putting a fairly neglected issue on the research agenda, as can also be deduced from the remarks in the following passage:

> Studies of language acquisition generally take for granted that the evidence to which the learner is exposed is sufficient to ensure accurate learning by a competent language learner; that is, a child within the critical age period. This assumption is perfectly reasonable under normal circumstances but language change shows that there are limits to its validity. We do not know what these limits are, however, and it is not clear how to find them, given that experimentally manipulating the evidence presented to learners is neither practical nor ethical. (Kroch, 2001, p. 700)

Kroch summarizes clearly the questions which need to be answered, but he limits his attention to monolingual acquisition. In multilingual acquisition, however, it is indeed possible to study cases where one of the languages acquired is used less proficiently, and it is only reasonable to inquire whether it has also been acquired less successfully. Much of the research on early bilingualism over the past thirty years investigated whether it is possible to develop a competence and a proficiency in use in each of the languages qualitatively equivalent to that in the respective monolinguals. These studies have demonstrated beyond any reasonable doubt that this is indeed possible and that bilingual children achieve these goals without going through a phase of confusion, fusion, or whatever threatening scenarios had previously been developed; see Meisel (2001, 2004). From this, however, it does not follow that less successful cases cannot exist. But it is important to know that under the normal conditions of first language development, simultaneous acquisition of two or more languages can easily be attained. In fact, only based on this knowledge are we able to adequately formulate questions as to what exactly happens in cases where children do not succeed in the expected fashion. In order to do so, it is necessary to carefully describe the structural properties in which the language use of these individuals appears to differ from that of other bilinguals and from monolinguals. To the extent that such differences can be qualified as differences in grammatical competence, one can proceed by investigating the causes for what might possibly be a lack of ultimate success.

Multilingual acquisition, however, not only allows us to investigate possible cases of incomplete acquisition in one of the "first" languages of individuals developing more than one competence simultaneously, it also enables us to assess the role of what is referred to in the above quitation from Kroch as "the critical age period". By analyzing successive acquisition of bilingualism, it should become possible to decide whether delayed onset of acquisition can result in transmission failure. In Section 4.2, below, I will argue that this is indeed the case, whereas it is unlikely to happen in simultaneous acquisition of bilingualism, as I hope to show in Section 4.1.

4.1 The case of the weaker language

What emanates from the preceding discussion is that in order to maintain the hypothesis according to which the language learning child is the main agent of grammatical reanalysis in diachronic change, acquisition research must demonstrate that transmission failure is indeed a likely phenomenon to happen. Yet this does not seem to hold true for first language development, neither in monolingual (L1) nor in bilingual (2L1) settings; see de Houwer (1995) or Meisel (2004) for summaries of the relevant research on 2L1. In cases where one of the languages appears to be significantly "weaker" than the other(s), however, this need not be so. In fact, the development of the weaker language might even resemble that of a second language (L2), and for L2 acquisition it has indeed been claimed that it is fundamentally different from L1 (Bley-Vroman, 1989) and that L2 learners acquire an incomplete grammatical knowledge of the target language (Schachter, 1990). For the purpose of this discussion, I adopt this Fundamental Difference Hypothesis (FDH) without justifying this decision; but see Meisel (1991, 1997). My quest for transmission failure will thus begin by examining alleged cases of unbalanced child bilingualism.

One of the scenarios for which only partial success in grammatical development has been suggested is the one where one of the languages of a multilingual person appears to be the WEAKER language (WL) because it develops more slowly or exhibits characteristics in which it appears to differ markedly from that of the respective monolinguals or "balanced" bilinguals. The question then is whether the features attributed to the weaker language represent qualitative rather than quantitative differences, like slower development or higher frequency or more persistent use of a particular phenomenon otherwise also attested in other types of acquisition.

In order to avoid terminological confusion, let me try to briefly clarify the notion of weakness as it is used here. As I have argued elsewhere (Meisel, 2007a), it should be distinguished from language DOMINANCE by which I refer to the predominance of one language in a multilingual setting, e.g. in terms of number of speakers

or communicative opportunities. Moreover, it should not be confounded with language PREFERENCE, referring to the pattern of language choice of a multilingual person. Thus, whereas dominance and preference reflect the sociolinguistic and communicative settings as well as attitudes or motivations determining a speaker's language use, respectively, the term WEAKER LANGUAGE refers to the type of grammatical knowledge acquired by a bilingual, more specifically to a case of only partially successful grammatical acquisition. Our question then is whether there is indeed evidence demonstrating that one of the languages in simultaneous acquisition of bilingualism will develop as the weaker one, as defined here.

Schlyter (1993) was the first to address this issue explicitly, and together with her associates, e.g. Bernardini and Schlyter (2004) or Schlyter and Håkansson (1994), she presented some of the most detailed and interesting analyses of the WL. In her seminal paper, Schlyter (1993, p. 305) states that "the *stronger language* exhibits all the characteristics of normal L1 development, as regards the central grammatical phenomena such as finiteness, word order, and placement of negation; whereas the *weaker language* exhibits great variation in these respects, from complete non-existence of the grammatical phenomena mentioned to a lower occurrence of them in a corresponding sample of the stronger language". Some of the characteristics of the weaker language mentioned by Schlyter (1993), like the tendency to omit subjects, do not qualify as qualitative features of the sort we are looking for. But the acquisition of finiteness or verb placement might indeed count as such. For reasons of space, I will only address the latter one here.

Schlyter and Håkansson (1994) present a detailed discussion of verb-second placement, contrasting word order patterns in the data of six Swedish–French bilingual children with word order in the language of two other groups of children acquiring Swedish, namely five monolinguals and five child L2 (cL2) learners (onset of acquisition between age 4 and 5). Focusing on the placement of the finite verb, they observe different patterns of usage in L1 as compared to child L2 learners. As for the bilingual children, they state that the three children whose weaker language is Swedish behave more like the L2 learners whereas the ones with Swedish as the stronger language pattern with the L1 children. If this claim can be confirmed, verb placement is indeed a likely candidate for the type of transmission failure we are looking for.

The facts leading to this conclusion mainly refer to the position of verbs with respect to subjects (SV/VS). Since Swedish, as a V2 language, requires VS order when a constituent other than the subject appears in initial position, failing to use VS normally results in ungrammatical XSV (*V3) order. Occurrence of *V3 and the relative frequency of VS as opposed to SV indeed constitute the principal criteria applied by Schlyter and Håkansson (1994) in order to distinguish between acquisition types. They find that Swedish monolinguals use *V3 in less than 2% of the relevant contexts, whereas L2 children use *V3 more often, its frequency ranging from 3% to 11.8%. The three children for whom Swedish is identified as the stronger language behave like the monolinguals in that they hardly ever fail to place the verb in pre-subject position. The picture is less clear for the three children who acquire Swedish as their weaker language. Their usage of the word order patterns under discussion is much more variable, across the three children as well as in the speech of each of them across time.

There can be no doubt that Schlyter and Håkansson (1994) have demonstrated that one of the languages of bilinguals may not only develop more slowly but that it may also exhibit usages in which it differs from the speech of the respective monolinguals and of balanced bilinguals. The question, however, is whether these observations justify the claim that the V2 parameter is set to a wrong value in "weak Swedish" (Schlyter & Håkansson, 1994, p. 55).

The first observation casting doubts on such a conclusion is that the developmental chronology does not seem to support it. With respect to the SV/VS ratio, for example, which supposedly reveals the acquisition of the grammatical knowledge required for V2 constructions, one finds that the three children for whom Swedish is the weak language use VS order from early on and in virtually every recording. The V2 phenomenon thus emerges in the WL during the same developmental period (in terms of MLU values) as with monolinguals or balanced bilinguals. The same observation can be made when investigating *V3 constructions, i.e. XSV sequences where the verb has failed to move into pre-subject position. As mentioned above, learners acquiring Swedish as the weaker language use *V3 more frequently than monolingual children. But V2 constructions are used in the WL from early on and, in fact, predominantly over most of the time spans recorded. This fact calls into question the conclusion of Schlyter and Håkansson (1994, p. 59) that these children either fail to set the respective parameter or do so later than normally. It is difficult to see why later instances – and also those attested in the speech of Swedish monolinguals – should represent evidence for grammatical knowledge about V2, but not the earlier ones.

Given this negative result, we are facing a methodological problem. It is obviously not possible, for principled reasons, to demonstrate that incomplete acquisition of grammatical knowledge will NEVER happen. Note that all authors who advocate the possibility of a weaker language or of cross-linguistic interaction allegedly resulting in an altered type of grammatical knowledge in bilinguals, e.g. Hulk and Müller (2000), admit that this affects only some children, but not all;

see Meisel (2007b) for a discussion of such claims. Unfortunately, however, no one has been able as yet to explain what causes it to happen with some children but not with others. In view of this theoretically unsatisfactory situation, all that can be done, in addition to examining closely alleged cases of WL development, is to analyze grammatical development in the non-preferred and non-dominant language of unbalanced bilinguals.

Two of the children in our corpus DuFDE (Deutsch und Französisch – Doppelter Erstspracherwerb/German and French – Simultaneous First Language Acquisition) qualify as such.[5] Growing up in Northern Germany in families where the mother addressed them in French and the father in German, they both spoke little and eventually no French for several months, starting at around age 2;5 (years; months). They later resumed speaking French, and the recordings made previously and subsequently to this period were analyzed in order to determine whether the children's language use showed signs of incomplete acquisition; see Meisel (2007a). For reasons of space, I will summarize very briefly only the results referring to the development of French word order. Bonnesen (2007) was able to show that neither of the two children used word order patterns deviating from the target norm. There was no evidence of German word order regularities being transferred into French, and both children placed finite verbs before and non-finite verbs after the French negative element *pas*, indicating that finite elements had been raised out of VP in accordance with the requirements of the target grammar. Bonnesen (2009) further examined two phenomena which have been argued to reveal differences between L1 and L2 acquisition, namely the use of French subject clitics and the rate of omission of subjects. Here too, he provided strong evidence for the claim that no qualitative difference exists between these children's acquisition of French and the development of French in monolingual or balanced bilingual children.

A number of other studies, however, have made observations similar to those in Schlyter (1993), although they do not necessarily interpret these findings as suggesting an L2 type of acquisition. Döpke (1998, 2000a, b), for example, reports on "untypical" or "unusual acquisition structures" in the speech of German–English bilinguals, mainly referring to target-deviant placement of finite and non-finite verbs in German. If these constructions could be argued to result from different parameter settings, as compared to the German target grammar, they might indeed represent the kind of evidence necessary in order to support the idea of reanalysis as a consequence of language contact. Possible candidates are word order patterns like those in (3a), where the non-finite verb precedes the complement in the main clause, $^{*}V_{inf}$ XP rather than standard XP V_{inf}, or like (3b), where the finite verb follows the negator, *NEG V_{fin} instead of German V_{fin} NEG, or like (3c), where non-finite verbs appear in clause-second (V2) position.

(3) a. *ich möchte tragen dich
I want carry you
"I want to carry you"
b. *Hund nicht kommt rein
dog not comes in
"(the) dog doesn't come in"
c. *das arbeiten ich
that work.INF I
"that I am working"

Constructions of this sort cannot be accounted for in terms of grammars of either German or English. On the one hand, finite verbs are undoubtedly raised to the V2 position (the head of CP), as required by German grammar, but this appears to happen with non-finite verbs as well (see (3c)). On the other hand, finite verbs do not consistently appear in V2 position, as is evidenced by (3b). This example provides evidence that the verb has indeed been moved since it appears to the left of its particle, but it does not precede NEG and has thus not been raised above NegP. German grammar does not offer a landing site compatible with this surface pattern, and the grammar of English does not allow V raising at all. Moreover, VP appears to be head-initial, as is evidenced by constructions like (3a).

How are we then to interpret these findings? Note, first of all, that the phenomena under discussion do not occur frequently, as is already suggested by the term "unusual constructions". In fact, except for constructions like those illustrated by (3a), the frequency across the four children studied by Döpke (2000a, p. 213) ranges from "a few instances" to between 5% and 10% of the children's utterances. Moreover, they surface, according to Döpke (2000a, b), most frequently during specific phases, i.e. during Phases III (MLU 2.75–3.74) and IV (MLU 3.75–4.74). In other words, they emerge at a point of development when longer and more complex utterances begin to be used. Importantly, the children are, at that time, already capable of producing the corresponding target structures, and they soon abandon the use of the "unusual" ones. Note further that, as far as head directionality is concerned, the developmental pattern indicates that the respective parameters have been set to the correct values from early on, e.g. OV in German and VO in English during Phase II. These observations constitute strong evidence against the assumption that

[5] The DuFDE study was carried out at the University of Hamburg, supported by a research grant from the Deutsche Forschungsgemeinschaft (DFG, German Science Foundation) to the present author from 1986 through 1992. The support from both the DFG and the University of Hamburg is gratefully acknowledged. A summary of the project and its methodological approach is given by Köppe (1994).

the target-deviant structures indicate different settings of the respective parameters. Not only is repeated resetting highly improbable for principled reasons, as mentioned in Section 1 above (see Clahsen, 1991, or Meisel, 1995, for a discussion of this issue); setting a parameter to a specific value should, furthermore, lead to dramatic changes in usage, not to alternating use of two options. Finally, the temporary emergence of VO order speaks against the possibility of attributing to the children two parallel grammars, one exhibiting VO, the other OV ordering. Unless one can identify the trigger for the emergence of a parallel grammar and, even more importantly, for its attrition, one must conclude that, in view of the fact that the children continue being exposed to the same kind of language use, such a claim amounts to no more than postulating an otherwise invisible third system, simply because the two target grammars cannot account for the observed usage.

Thus, the conclusion to be drawn from the discussion of both the Swedish–French and the German–English data is that they do not offer evidence supporting the hypothesis that the weaker language is an instance of second language learning. Consequently, cases of bilingual development where one language is weaker than the other(s) do not seem to be prone to lead to transmission failures of the sort which might explain reanalysis in diachronic change. The arguments in support of this conclusion rely primarily on the developmental pattern observed in both cases. Not only are the constructions under discussion used infrequently, they emerge only after a phase during which the target constructions had already been used; in fact, both types are used simultaneously, and the "unusual" ones are eventually abandoned by the children. This temporary usage cannot possibly be explained in terms of parametric changes. Not only is the repeated resetting of parameters a highly improbable option for principled reasons, as argued above, fundamental reorganizations of mental grammars are particularly costly processes in terms of the cognitive capacities needed (see Pienemann, 1998).

Interestingly, the target-deviant patterns emerge during developmental periods when more complex utterances begin to be used. This brings me to the hypothesis which I want to suggest as an alternative explanation of these constructions, namely that they reflect specificities of language processing in bilingual production – a suggestion probably not in conflict with what is intended by the authors of the discussed studies themselves. In fact, Schlyter and Håkansson (1994, pp. 55f.) consider the possibility that the explanation of the observed phenomena could "be a question of lack of control", and Döpke (2000a, p. 219) attempts to explain the ones studied by her in the framework of the Competition Model proposed by Bates and MacWhinney (1989), arguing for "cross-language cue competition on the surface of utterances". This is obviously not the occasion to discuss the Competition Model. What matters in the present context is that the type of cross-linguistic interaction postulated here happens in language production and does not reflect properties of the bilingual children's grammatical knowledge. Indeed, Döpke (1998, p. 556) refers to the Competition Model as to a processing theory. I prefer to refrain from speculations about its true nature, but I do want to take up this suggestion which is indeed corroborated by other studies.

In fact, this hypothesis is further supported by earlier work by Hulk and van der Linden (1996) and Hulk (2000). They also find "deviant word orders" in their analyses of the simultaneous acquisition of Dutch and French. The bilingual child studied by these authors exhibits variable order in French, including OV patterns, with finite as well as non-finite verbs. Hulk and van der Linden address the question of whether this can be due to cross-linguistic influence from Dutch. They point out, however, that the same type of constructions appears in monolingual child French too, although OV patterns appear more frequently in the speech of the bilingual child. Hulk and van der Linden take this difference in frequency as evidence for an INDIRECT influence of Dutch, and Hulk (2000, p. 74) suggests "that the XP_V orders in bilingual French–Dutch children are not an example of transfer of basic Dutch OV-orders nor of missetting of a parametric value on the basis of the Dutch input". She attempts to explain them instead as resulting from processing mechanisms, i.e. "one language is activated while the other is inhibited. However, inhibition is never complete" (Hulk, 2000, p. 75). This, of course, supports my hypothesis, especially since it can account for the developmental patterns described above; see also Meisel (2007a). One can further conclude that it seems to be easier to differentiate mental representations of grammatical knowledge of two or more languages than to process this knowledge separately in actual language use, especially since both languages of the bilingual individual are permanently activated, albeit to different degrees; see Grosjean (2000), Hermans et al. (1998).

To sum up, the conclusion to be drawn from our first attempt in the quest for transmission failure is that even in cases where one language appears to be weaker than the other(s), no convincing evidence could be found supporting the idea of partially successful or incomplete acquisition, possibly resulting in restructuring of the type which could explain diachronic change. Let us therefore turn to the second scenario where transmission failure might happen, namely delayed onset of acquisition.

4.2 Successive acquisition of languages

A plausible point of departure for this second quest for transmission failure is to ask why successive language acquisition should at all be a source of incomplete

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acquisition. The obvious answer is to refer to the Fundamental Difference Hypothesis, mentioned in the preceding section. However, in view of the fact that this hypothesis and indeed most of L2 research is based on adult second language acquisition, this appears to be in conflict with the claim that the language learning CHILD is the LOCUS of diachronic grammatical change. But as I will argue in this section, one can in fact detect properties in the grammatical knowledge of child second language learners in which cL2 learners resemble adult second language (aL2) learners and differ fundamentally from both monolingual and bilingual first language learners.

Before addressing this issue in a little more detail, let me attempt to be somewhat more specific about what "fundamentally different" is supposed to mean, even if it is obviously not possible here to summarize 25 years of second language acquisition research. The basic idea is that the human Language Making Capacity, of which UG is arguably a central component, becomes accessible to the child as a result of neural maturation, but does not indefinitely remain fully accessible. In other words, this approach adopts the idea of a critical period for language acquisition, and it establishes a connection between the maturation of the brain and of the cognitive system on the one hand, and grammatical development on the other; see Meisel (2008b).

Importantly, the claim of fundamental differences does not refer to "language" across the board, but specifically to grammatical competence and, more precisely, to those parts of grammatical knowledge which are subject to maturational change. In other words, the claim is that access to UG is ruled out only partly, not completely. This obviously obliges us to find principled reasons explaining which parts of UG are predicted to be affected. Following Smith and Tsimpli (1995), Towell and Hawkins (1994), and Tsimpli and Roussou (1991), only parameterized principles are concerned when fundamental differences between L1 and L2 acquisition emerge. Moreover, Smith and Tsimpli (1995) argue that parameterized principles are the only ones subject to maturation, thus establishing a causal relationship between neural maturation and linguistic development. Based on these proposals, my hypothesis is that L2 learners do not have direct access to options provided by parameterized UG principles. Thus, although they can make use of previously acquired grammatical knowledge, they cannot fix the value of parameters not instantiated in L1, and they cannot "reset" those parameter values in which the two grammars differ. Instead, they have to make use of other cognitive resources in order to compensate for those not available anymore. This means that they may have to rely on inductive learning where triggering of implicit knowledge has become impossible. Non-parameterized principles of UG, on the other hand, constrain L2 acquisition in essentially the same way as in (2)L1.

From all this it follows that L2 knowledge is a HYBRID system in that it conforms only in part to principles of UG, whereas other parts are not constrained by domain-specific cognitive principles but are the result of domain-general operations. Consequently, when contrasting (2)L1 and L2 acquisition, we should expect to find similarities and differences, and the differences can be predicted to emerge in areas of grammar related to parameterized principles of UG, although they need not be restricted to this domain.

Returning now to child L2 acquisition, further considerations must be taken into account because our current knowledge about maturational constraints on language development suggests that not all the properties of grammar which are subject to such changes will be affected simultaneously; see Hyltenstam and Abrahamsson (2003). Rather, optimal periods for the instantiation of specific grammatical properties are predicted to fade out at different points of development. Based on results from linguistic as well as neurophysiological evidence, the prediction is that the age ranges at around 6–7 and at approximately 3–4 years are the most crucial ones for syntax and morphology; see Meisel (2008b). Consequently, we should expect to find that cL2 acquisition resembles (2)L1 development in some respects and aL2 acquisition in others.

Unfortunately, child second language acquisition is a seriously under-researched topic, although a number of studies investigating successive language acquisition by children under the age of 10 were already carried out in the 1970s, see also Lakshmanan (1994). Only quite recently, however, has the issue of how cL2 differs from (2)L1 or from aL2 attracted more attention; see Unsworth (2005) for a more comprehensive review of work on cL2. What matters for the present discussion is that a critical period at around age 7 has been confirmed repeatedly as a cut-off point, and that at least some studies also point to an earlier age range. In fact, Krashen (1973) already posited that crucial changes happen at around age 5. Neurophysiological as well as some linguistic findings suggest, indeed, that a sensitive period for some grammatical phenomena begins to fade out as early as between age 3 and 4 years; see Meisel (2004, 2008a, 2009).

In view of what has been said so far, the essential point with respect to the question of incomplete acquisition is that this possibility indeed exists in successive acquisition. Depending on the age of onset (AO) of acquisition, it seems to become increasingly difficult for children to acquire a complete native grammatical competence. The most obvious question at this point is what might possibly be the underlying developmental logic determining onset and offset of optimal phases during which specific grammatical phenomena can be acquired easily and successfully by mere exposure to the relevant triggering

data. To my knowledge, neither grammatical theory nor neurological evidence offers any insights enabling us to determine a developmental schedule of this sort. Because of this unsatisfactory situation, we must proceed inductively in trying to discover which grammatical phenomena are affected at what age range. With respect to morphosyntactic properties, the above-mentioned age period between 3 and 4, seems to be the earliest critical one.

Schwartz (2004) arrives at a similar conclusion, referring to the age range from 4 to 7 as child L2 acquisition. Based on a review of several empirical studies, she postulates different acquisitional patterns for syntax and morphology. Looking at the course of development, she states that child L2 acquisition is like adult L2 acquisition (and both are distinct from child L1 acquisition) in the domain of syntax, but that child L2 acquisition is like L1 acquisition (and distinct from adult L2 acquisition) in the domain of inflectional morphology.

This is obviously not the place for an in-depth discussion of these questions. But if we adopt a notion of a "critical period" as comprising multiple sensitive periods, as suggested above, it necessarily follows that a unitary account of all those grammatical properties which are subject to maturational changes is impossible, and differentiating between syntactic and morphological phenomena is a first step towards a more adequate approach. Yet contrary to the suggestion by Schwartz (2004), even a cursory review of the available results from cL2 studies shows that cL2 patterns with aL2 in at least some areas of inflectional morphology. Whether syntactic parameters determining word order are also affected at this early age requires further inquiry, since, for the time being, no conclusive evidence is available on this issue; see also Meisel (2009).

This is the argument I make in Meisel (2008a), studying the acquisition of French by German L1 children whose first exposure to French happened between age 3;1 and 3;7 in an immersion setting in Germany. The goal was to identify properties which cL2 acquisition shares with aL2 but not with (2)L1. One such feature of cL2 turned out to be the use of clitic subject (SCL) pronouns in combination with non-finite verb forms. SCL in mature French enter into a close relationship with the finite verb, probably assuming affixal status in adult grammar. Whatever grammatical status one may wish to attribute to these elements, they are undoubtedly analyzed as finiteness markers by L1 children. This is evidenced by two facts: just as in the mature language, they are never attached to non-finite verbs in French L1 development, monolingual or bilingual, and as soon as they are used productively, the verb is systematically placed before the negative element *pas* "not" and certain adverbials, indicating that it has been moved out of VP. 6 out of the 10 cL2 learners of French who, at the time of the recordings, had been exposed to the target language for 16 to 28 months, however, did use the illicit combination of SCL and non-finite verbs, a kind of usage familiar from aL2 learners; see Granfeldt and Schlyter (2004). Clearly, these children differ in this respect from L1 and resemble aL2 learners, and arguably finiteness markings fall into the domain of inflectional morphology. At the same time, these children did not exhibit problems with the acquisition of French word order.

In fact, in a more detailed analysis of the acquisition of interrogative constructions in French and German by children with L1 German and Turkish, respectively, Bonnesen and Kroffke (2007) conclude that cL2 learners behave like L1 and not like aL2 learners, if age of onset (AO) happens between 3 and 4 years. A number of other studies arrive at similar conclusions in that they find that OV/VO order or V2 phenomena are acquired fast and without apparent effort; see Haznedar (2003) for the acquisition of English by a Turkish boy (AO 4;3) or Rothweiler (2006), analyzing the acquisition of three Turkish children (AO 2;10–4;05), among others. Kroffke and Rothweiler (2006), based also on an analysis of the acquisition of German by Turkish children, claim that at AO 3 they behave like L1 learners, whereas at AO 6 they resemble aL2 learners. Sopata (2008), on the other hand, does find problems with German OV and V2 order in three Polish child L2 learners (AO 3;8–4;7), contrary to the studies just mentioned. More research is clearly needed in this domain, but it seems safe to conclude that the optimal period for the acquisition of inflectional morphology begins to fade out at around age 4;0 or even earlier; see Meisel (2009).

Support for this claim comes from studies of the acquisition of gender markings, a notoriously difficult task for aL2 learners; see Andersen (1984) or Carroll (1999), among many others. If this is also the case for cL2 learners, it will be of particular interest when attempting to decide on the maturational schedule for syntactic and morphological properties because gender marking relies on morphological as well as on syntactic processes. As is well known, gender acquisition involves two clearly distinct tasks: assignment and concord, the latter being a syntactic operation; see Hawkins and Franceschina (2004). Importantly, gender features are made available by UG as a parameterized option, and languages like English do not select them. Assigning gender to each lexical item in the vocabulary, on the other hand, involves in many languages, including French and German, a morphological task, and in performing it, L1 children acquiring languages which mark gender on nominal suffixes rely heavily on these formal properties of nouns. Note that learners may assign the wrong gender to a given noun, while demonstrating mastery of concord if all determiners and modifiers systematically carry the "wrong" markings. It is, however, not always possible to

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decide which type of process is responsible for non-target gender markings in L2, and unfortunately many studies do not distinguish between the two.

A study which makes a particularly strong empirical argument that gender acquisition by children resembles that of adult L2 learners is the one by Pfaff (1992). She analyzed language acquisition by Turkish and by German children, as well as by children of mixed marriages, all attending a bilingual day-care center (Kita) in Berlin. The children entered the Kita at an age between 0;6 and 1;8, i.e. at an age which places them well below the limit of the critical age range. It is important to note, however, that 90% of them speak Turkish at home and are considered as Turkish dominant, an assessment confirmed by their preferences in language choice. The caretaker staff was composed of Turkish and German native speakers who mostly spoke their respective native language with all children. Pfaff (1992) analyzed the grammatical development of three children, two Turkish-dominant boys (age ranges analyzed 1;8–4;3 and 2;11–5;3) and one virtually monolingual German girl (1;10–3;2). She argued that certain features of the Turkish-dominant children's German nominal and verbal grammars resemble that of L2 learners. But these are partly quantitative differences, e.g. the proportion of zero articles was higher than for the monolingual child, and it persisted longer. More significant, in this respect, is that Pfaff (1992, p. 286) found that gender seems not to be "present as an underlying grammatical category at all for the Turkish children". If this is correct, they have not set the parameter to the value required by the target system, German.

Möhring (2001) explicitly distinguished between assignment and concord in her analysis of gender markings by children acquiring German and French successively. She concluded that children are able to perform like L1 learners if they are first exposed to the L2 (French) around age 3;6 or earlier. This seems to change, however, when age of onset happens at 3;7 or later, but the data base was too slim to draw firm conclusions.

Interestingly, Hulk and Cornips (2006), analyzing the speech of children acquiring Dutch as a second language, age of onset before 4;0, found quantitative and qualitative differences as compared to L1 in gender marking, but not in the acquisition of verb placement in subordinate clauses. Although these authors did not distinguish explicitly between gender assignment and concord, this suggests that the optimal period for the development of verb syntax has not yet begun to fade out whereas the acquisition of the gender system is already affected by age-related changes during this early phase of acquisition.

In a carefully designed experimental study, Blom, Polišenská and Weerman (2008) analyzed gender acquisition by child and adult Moroccan L2 learners of Dutch, contrasting it with monolingual L1 Dutch children. Gender markings appear on articles and on attributive adjectives, but Dutch nouns do not exhibit formal cues signalling to which of the two classes a noun belongs, common or neuter. They argue that gender marked articles are acquired as part of lexical frames, i.e. gender assignment is an instance of lexical acquisition involving the learning of articles. Adjectives, on the other hand, are inflected for gender in a process involving syntactic gender concord (agreement, in their terminology). Their results revealed an age-related asymmetry between the two groups of child learners, on the one hand, and adult L2 learners, on the other – but only with respect to gender concord on adjectives. They suggest that this reflects input-based, lexical learning by adults, whereas children rely on grammar-based representations. Gender marked articles, however, are lexically learned by all three groups of learners. These findings strongly support the claim that the syntactic knowledge required for gender concord, i.e. the parameterized option offered by UG according to Hawkins and Franceschina (2004), is not available to aL2 learners any more. As for child learners, both L1 and L2 children seem to be able to activate the required syntactic knowledge, but the authors of this study suggest that age effects may indeed occur earlier than at around 6–7 years and that the feature [±neuter] must be activated before age 4. A firm decision on this issue is unfortunately not possible because the age of onset of acquisition of Dutch by these cL2 learners (age at time of testing ranging from 4;2 to 8;4) could not be determined exactly. Although some of them were born in the Netherlands, it was concluded on the basis of a questionnaire administered to their teachers that, growing up in immigrant families, they had no "substantial" exposure to Dutch before school age.

To sum up, the conclusion to be drawn from this second attempt in the quest for transmission failure is that solid evidence suggests that gender markings are indeed subject to age effects, and this refers specifically to the task of acquiring the operations involved in inflectional morphology and syntactic concord. Moreover, the critical age range seems to be at around age 4 or earlier. Let me add that in acquiring languages like French where morpho-phonological cues on the noun provide information relevant for gender assignment, as opposed to Dutch, where this is not the case, child L2 learners are able to make use of these cues if onset of acquisition happens before age 4; see Möhring (2001) and Meisel (2007c, 2009). In other words, to the extent that the target system requires morphological and not only bottom–up lexical learning as in Dutch, age effects can be detected in the acquisition of gender assignment, as well. We can thus conclude that successive acquisition of languages does indeed result in acquisition failure if age of onset occurs around age 4. The grammatical domains

which are vulnerable at this early age include inflectional morphology and probably some aspects of syntax.

4.3 Reduced accessibility of the target language

Let me finally mention, at least briefly, a third scenario which has been claimed to lead to incomplete acquisition of grammar, namely settings in which children growing up bilingually only have very limited exposure to one of their languages. If, namely, exposure to the appropriate kind of data during the optimal developmental period is a necessary prerequisite for a native grammatical competence to be attainable, exposure to the primary linguistic data containing the grammatical information triggering the setting of the relevant parameters may have to attain a minimal threshold in order to be effective. Drastically limited exposure to the target language during the sensitive periods may therefore result in acquisition failure. That this is not an implausible assumption is suggested by studies on L1 acquisition with severely reduced input caused by *otitis media* during the first year of life; see Ruben (1997) cited by Hyltenstam and Abrahamsson (2003). Ruben found that this resulted in deficiencies in verbal memory and phonetic perception, and speculated that insufficient early phonological input might result in incomplete acquisition of syntax. Although it is difficult if not impossible to define adequately what may count as sufficient input, it is plausible that a quantitative threshold should exist with respect to the amount of data required for successful acquisition, even in the case of simultaneous acquisition of bilingualism.

I have already addressed this issue indirectly (in Section 4.1), when discussing the acquisition of a "weaker" language. One might have predicted that the reluctance to speak one of the languages leads to a reduced amount of interaction in this language which, in turn, reduces the amount of exposure. In the case of the weaker language this prediction was not borne out. Remember that the WL may develop more slowly and that its use may exhibit target-deviant utterances, but this does not seem to indicate incomplete learning and deficiencies in the acquired knowledge systems. Moreover, these effects are observed in only some children, not in all those who grow up in a setting which might have been expected to cause them to happen.

Thus, although this does not seem to be the case with so-called weaker languages, it remains to be seen whether the non-dominant ones are not fully acquired and – if this is indeed the case – whether this can be attributed to insufficient exposure to the primary linguistic data. One of the cases reported on above might qualify as an example of this type, the one studied by Pfaff (1992). Turkish-dominant children did not succeed in acquiring the German gender system although they started being exposed to German before age 2;0. Based on the available information about these children, it is not possible to determine whether quantity of input is indeed a causal factor for this acquisition failure. But this is perhaps not an implausible hypothesis in the given setting of social bilingualism where the majority language (German) appears to be largely absent in the families and the day-care center may not have provided sufficient exposure. In fact, a number of other studies investigating minority children in similar contexts but without exposure to the majority language (German or Dutch) in day-care centers assume these children to be L2 learners of the majority language, e.g. Blom et al. (2008), Hulk and Cornips (2006) or Kroffke and Rothweiler (2006), and deliberately leave this question undecided and refer to them as "between 2L1 and child L2". Yet if they are L2 learners of the majority language, we are back to the previous scenario of successive acquisition of languages.

However, we are facing a different situation if we look at the reversed pattern of dominance, settings where the minority language is the non-dominant ambient language for the child. This may be the situation in the case of heritage languages, see Montrul (2004), Silva-Corvalán (1994), among others. In a number of studies, Montrul and associates argue that the heritage language, Spanish in this case, is acquired incompletely, and they identify reduced input as a major though not the sole cause of this fact, e.g. Montrul and Potowski (2007). Somewhat surprisingly, they claim that simultaneous bilinguals are closer to L2 learners than sequential bilinguals because they receive less input in the heritage language. As mentioned above, it is indeed trivially true that simultaneous bilinguals receive less input in each of their languages than monolinguals, but there is a broad consensus in the literature on this type of acquisition that, except for lexical learning, this typically does not result in incomplete acquisition; see Meisel (2004) for a state-of-the art summary of this research. Let us nevertheless assume that in settings like the ones referred to here, a conspiracy of factors, e.g. the status of the minority language in the society, scarce use of the minority language in the home, lack of a minority speech community outside the home and schooling in the majority language, might indeed result in incomplete acquisition. Can we then regard this as another acquisitional setting which is likely to cause transmission failure to happen?

Unfortunately, I cannot give a straightforward answer to this question. The problem is that the term "heritage speaker" is used to refer to a rather mixed group of learners who differ substantially in their acquisition profiles. It includes simultaneous as well as successive bilinguals, with high or low proficiency in the heritage language, persons whose heritage language has undergone attrition as well as individuals whose acquisition process was interrupted because contact with that language ended before they had reached native competence. It is

therefore not clear whether the detected cases of deficient competence result from attrition, failure to acquire native knowledge in some aspects of grammar, or incomplete acquisition due to the removal of the target language. As Sorace (2004, p. 143) remarks correctly: "More information on the speakers' background and history of learning Spanish would be needed in order to determine what their actual state of competence was before the onset of attrition, and thus to decide between these competing explanations". In fact, Montrul and Potowski (2007) themselves observe that one needs longitudinal studies in order to tease apart differences between incomplete acquisition and L1 attrition. Some such information is, in fact, offered by Silva-Corvalán (2003), who compares the acquisition of tense and aspect by seven Spanish–English children (ages 5;1–5;11 at the time of recording) to the use of tense forms by Spanish–English adults. For two of these children, there are also some longitudinal data (as of 0;11) available. All of them were exposed to Spanish from birth and to English either simultaneously or successively. At the time of recording, English is reported to be the dominant language for four children; in fact, three of them, including the two studied longitudinally, no longer speak Spanish at home. Silva-Corvalán (2003) concludes that the tense-aspect system developed by the adults as well as by the children is "simplified" because their acquisition of Spanish has been interrupted. It remains to be seen whether degree of exposure is really the main or even sole factor causing the observed language use, and we certainly need more detailed information about how language dominance is assessed. But it is plausible that the target system may not be fully acquired if one of the ambient languages becomes only marginally accessible. Interestingly, Silva-Corvalán (2003) finds that in some cases the system used at age 5;6 is reduced as compared to the one accessible at age 3;0–3;3; in other words, we may be looking at the result of attrition rather than of incomplete acquisition. Note also that grammatical tense represents one of the phenomena at the syntax–pragmatics interface, and it is by no means clear whether the observed particularities in the children's use of Spanish reflect deficient knowledge related to grammatical parameters; see also Montrul (2004). So, again, more carefully documented case studies and more longitudinal analyses are needed.

The question of whether the acquisition of heritage languages represents another scenario where acquisition failure is likely to happen can thus not be answered unambiguously, at least not whether the type of "incomplete" acquisition observed here can help to explain grammatical reanalysis in diachronic change. Note that attrition is not a plausible candidate because, as mentioned in Section 1, attrition does not seem to affect the setting of syntactic parameters (see Flores, 2010). Rather, as observed by one of the reviewers, it is a syntax–discourse phenomenon since, as shown by Tsimpli, Sorace, Heycock and Filiaci (2004), interface phenomena are more vulnerable to attrition because the interpretable features can be more easily "corroded" by external factors. Montrul (2004, p. 126) expresses a similar idea when she writes: "while syntax proper is impervious to language loss or attrition, areas where syntax interfaces with other cognitive or extragrammatical areas, such as lexical-semantics, syntax-semantics and discourse-pragmatics, are less resilient". Moreover, it is more likely to lead to language loss than to reanalysis and change. If, however, heritage speakers provide the input for the next generation, their speech may very well contain the kind of conflicting evidence which is likely to trigger reanalysis in subsequent first language acquisition.

5. On reanalysis and diffusion of change by first and second language learners

In the first sections of this paper, I have argued that the developmental problem as it presents itself in studies of diachronic change remains largely unsolved. The further discussion led to the hypothesis that bilingual language acquisition might be a possible source of grammatical reanalysis in cases of "catastrophic change", involving changes of the values of grammatical parameters. But this resulted in a paradoxical situation since research on the simultaneous acquisition of two or more languages has demonstrated that bilinguals, just like monolinguals, normally acquire successfully the languages they are exposed to. In the preceding section, we have then seen several scenarios where the language use of bilingual children deviated from the target norms, but which, nevertheless, did not provide plausible evidence of grammatical transmission failure.

In fact, the perhaps strongest result of the discussion is that the human Language Making Capacity is an extraordinarily robust device. Transmission failure is therefore much less probable and occurs less frequently than is commonly assumed in diachronic linguistics. The Language Making Capacity can, for example, cope with a significant reduction of input. Quite obviously, there must be a minimal threshold, below which the quantity of input will not suffice to trigger parameter setting. Yet exposure to the primary linguistic data during the optimal periods defined by the maturational schedule is significantly more important than the quantity of exposure. Transmission failure is most likely to happen in case of delayed acquisition. Importantly, these windows of opportunity probably begin to close as early as at approximately 3 or 4 years of age, and some changes may indeed happen earlier, especially in phonology. Consequently, child as well as adult second language learners can be the agents of change.

Thus, reconsidering grammatical change in the light of insights gained by language acquisition research yielded results which should incite us to revise at least some of the working hypotheses adopted at the outset of this discussion. Let me first mention one assumption which does NOT have to be modified, namely that morphosyntactic change of the type captured by the notion of parametric change will only happen in the course of language TRANSMISSION. As has been argued in Section 1, no currently available research finding suggests that such changes might occur over the lifespan of speakers, affecting their L1 grammatical knowledge. This, however, does not necessarily imply that child L1 learners are indeed the PRINCIPAL AGENTS of grammatical change. In view of the above-mentioned robustness of the LMC, TRANSMISSION FAILURE is unlikely to happen, especially in monolingual L1 development, although it cannot be ruled out for principled reasons. After all, as has been mentioned in Section 3, it is not impossible that parameters might be set to target-deviant values in L1 development, even if the L1 literature reports on less than a handful of cases where this is claimed to have occurred. Moreover, as discussed in Section 3, changing frequencies in the use of specific constructions or the occurrence of ambiguous structural information cannot be excluded categorically as possible causes for syntactic change. The latter case, however, would not qualify as an instance of transmission failure since the cues – in the sense of Lightfoot (1991 and subsequently, e.g. 2006) – which trigger the change are in fact present in the primary linguistic data. These considerations amount to saying that we cannot preclude from the outset the possibility of internally motivated changes in grammar. But in view of the fact that studies investigating L1 acquisition offer virtually no support for the claim that parameters are set differently in developing grammars as opposed to the mature grammars of the caretakers, the assumption that child L1 learners are the principal agents of grammatical change is not warranted.

This is why I suggested examining bilingual acquisition as a possible cause of syntactic change, thus combining the idea of transmission failure with the widely accepted hypothesis of an influential role of language contact in diachronic change. Yet as summarized above, simultaneous acquisition of bilingualism is no more likely to lead to grammatical reanalysis than monolingual L1 development, not even in settings which are far from being optimal for language development. Thus, from the point of view of acquisition research, the only scenario according to which diachronic change as a result of transmission failure can plausibly be expected to occur is the one which I have described under the heading of "successive acquisition of languages", in Section 4.2, i.e. when children acquire one of the ambient languages as a second language. This includes at least some of the speakers of heritage languages mentioned in Section 4.3. In these cases, child second language acquisition is the locus of change, but the same considerations apply, of course, to adult second language learners. Consequently, the answer which I propose to the question of who are the agents of change is: second language learners, children or adults, at least as far as change via transmission failure is concerned.[6]

On the other hand, second language acquisition can also be the trigger of grammatical change when L2 learners provide the input for subsequent generations of first language learners. This refers, of course, to the proposal by Weerman (1993), adopted by Kroch and Taylor (1997), mentioned in Section 2, according to which L2 input can cause the kind of changes we have been looking for. Under this scenario, children are supposed to be exposed to "wrong" evidence in the speech of second language learners. The claim thus is that the speech of second language learners which serves as input for first language learners contains the triggers necessary for reanalysis, possibly because L2 learners transfer parameter settings from the grammar of their first language into their L2 interlanguage. Note that this scenario presupposes that these L2 speakers represent the only or the strongly predominant source of primary linguistic data for the children acquiring the language and that they are engaged in interactions with the children of a type which qualifies them as the preferred linguistic role models for these learners. For if native data of the target language were simultaneously accessible, the children would still have access to unambiguous triggers, setting parameters to the same values as in the grammar of their parents' generation. In sum, if L2 acquisition is the only locus of transmission failure, grammatical reanalysis can also happen in mono- or bilingual L1 development if the triggering structural information (cue for change) is contained in the samples of speech to which learners are exposed – a situation most likely to occur if L2 learners of the target language are the linguistic role models.

However, if second language acquisition seems to make a significant contribution to the solution of the transmission problem, it apparently also leads to new problems concerning the diffusion of the changes; see Labov (2007). The question is how L2 learners can possibly influence the entire speech community. In order for the scenarios sketched out here to gain in plausibility, language-external factors causing linguistic change need to be taken into account, and it must be shown that the social and demographic factors characterizing imaginable settings favourable for change can indeed be expected to

[6] Adults can also play an instrumental role in the genesis of a lingua franca or a pidgin. Here, too, they are acting as L2 learners, and the creation of new languages of this type are arguably instances of second language acquisition; see the contributions to Andersen (1983).

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prevail. These include a broad and sustained influence of the L2 speakers on the new generation, already during the transmission period, in the case of change triggered by L2 speakers. Similar conditions must be met if child L2 learners are the agents of change. Both scenarios require that the appropriate settings are sufficiently common and long lasting in order for the possible changes to be able to spread.

Studies investigating the history of specific languages will have to demonstrate that these conditions can indeed be met and prevail long enough in order to have an effect on a generation of learners. But I think one can, in fact, cite examples which suggest that the scenarios developed here are not as unusual or improbable as might appear at first sight. To mention a contemporary example, the majority of today's Basque speakers in the Basque Country are arguably L2 learners of the language, and this is probably also true for the larger part of the caretakers of Basque children. And although studies of ongoing grammatical changes in Basque are scarce, at least some research of this type exists, and we do not have to rely entirely on anecdotal evidence. Almgren and Barreña (2005), for example, report that bilingual as well as monolingual children increasingly use present tense forms in order to refer to future events, a use which is not acceptable in present-day adult Basque and which seems to be an innovation due to the influence by "new" speakers of Basque.

The Basque situation is certainly not unique; it may, in fact, be more common than one would suspect, as has been pointed out by one reviewer, since similar processes can be observed in various parts of the world as a result of efforts to revitalize endangered languages. In the case of Basque, political changes brought about the specific linguistic situation. But in small societies with only several hundred people per language and in which exogamy is institutionalized, so that every marriage brings a speaker of some other language into the community, such customs can result in a situation where L2 learners can indeed influence the linguistic community as a whole.[7] My hypothesis is that in larger and more complex societies, situations in which L2 learners exert a major influence on a language are most likely to emerge in periods of substantial demographic changes. Contemporary labour migration may appear to be such a case, but it is primarily the minority language which is affected here. Majority languages or more generally autochthonous languages are likely to be affected only in constellations of profound upheavals of these societies (and linguistic communities), e.g. as a result of the loss of large parts of the population. The migration of the peoples would certainly count as an example, and one can speculate that it had an impact on the formation of the various Romance languages. To mention another example, it is perhaps not a coincidence that we find that several European languages, e.g. French and English, underwent substantial changes during the 14th century and that grammatical innovations abound in texts written during the third quarter of the century. This is precisely the period when the Plague led to massive migrations, primarily within countries, but the "other language" may of course also be another dialect. The disease reached Sicily in 1347 and subsequently spread towards Western Europe. Its various attacks between 1350 and 1550 resulted in repeated decimation and subsequent growth of populations in many parts of Europe, as is observed by Johansson (1997), who discusses the example of eastern Normandy (Johansson, 1997, pp. 133ff.), where the population level fell around the year 1385 to 45% as compared to 1314 and rapidly grew to 65% around 1410, although it did not exceed 80% of the 1314 level around 1550.[8] These dramatic demographic changes may well have led to situations like the ones described above. I will refrain from further speculations, hoping that the ones presented here will suffice to show that it is plausible that situations may arise where L2 speakers of a language will exert an important influence on this language.

6. Conclusions and consequences

In conclusion, let me briefly return to the point of departure of this discussion, which was that in order to achieve deeper insights into language development, the various subfields of developmental linguistics need to cooperate more than is commonly the case, and that cross-disciplinary cooperation must necessarily be reciprocal in nature. Findings from diachronic studies put issues on the research agenda of acquisition studies which have been neglected or not been addressed at all, as is the case with the problem of accounting for transmission failure. Conversely, results from work investigating bilingual language acquisition can instigate new explanations of diachronic change, lead us to reject some of the previous ones, or corroborate others. Investigating processes of language development in the present, indeed helps us to understand processes in the past, including the external factors necessary for such processes to be triggered.

In this paper, I have discussed the claim that the language learning child should be identified as the LOCUS of grammatical change. I hope to have shown that this is not necessarily true, although language acquisition can be argued to play an essential role in the processes leading to reanalysis. The most likely scenarios for a reorganization

[7] I am grateful to the reviewer who reminded me of this fact.

[8] I want to thank Gisela Håkansson for referring me to the work of Christer Johansson, who also discusses the effects of language contact and changes in population levels for language change and who explicitly refers to the Black Death in his computer simulation of the loss of case markings in Normandy and in Scandinavia.

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of grammars to happen, however, are the ones involving bilingual or multilingual acquisition. This refers, on the one hand, to situations where non-native speakers of the language to be acquired by children constitute the predominant group in their linguistic environment, in other words to a specific case of L1 development; on the other hand, this also includes settings where learners acquire one of their ambient languages as a second language, i.e. in successive acquisition of bilingualism by either children or adults.

Whether these scenarios are indeed plausible ones to have occurred in the history of different languages and to have persisted long enough to cause such effects, remains to be seen. In the literature on historical linguistics, one finds, unfortunately, a striking contrast between the sophistication of the morphosyntactic analyses and the murkiness of the scenarios suggested to account for possible causes of change. This is where research on bilingual acquisition can make a significant contribution to a more adequate understanding of language development, in acquisition and in diachronic change. Some suggestions in this regard have been proposed here, and although much remains to be done, one consequence emanating from our discussion is that, in view of the constraints which we have imposed on plausible scenarios for change, we can predict that grammatical changes, particularly reanalyses involving parametric changes, happen less frequently than is commonly assumed. It will not suffice, for example, to point to language contact in order to construe a convincing argument in support of the claim that a particular phenomenon is the result of diachronic change. Note that this comment refers not only to parametric change but to morphosyntactic change, more generally. Poplack and Levey (2010), for example, have shown that in many alleged cases of contact-induced syntactic change, no change has actually occurred. Rather, claims to this effect overlooked the fact that a postulated "new" construction had long existed in the language, yet it had not been noted in the description of the standard norm of the language in question; or apparent changes in the frequency of use of patterns result from the fact that colloquial speech had previously not been analyzed adequately. These authors therefore suspect that contact-induced change is in reality much less common than the literature suggests.

My claim is that the same conclusion is warranted for alleged instances of change implying the resetting of parameters. A closer look at Old French (OF), for example, reveals that the evidence for the claim that it differs from contemporary French in its settings of the Null-Subject or the Verb Movement Parameter is far from being convincing. For reasons of space, I only refer to the latter one here, but see also Kaiser and Meisel (1991) or Sitaridou (2005) for similar conclusions. It has frequently been claimed that OF and, in fact, the medieval varieties of all or most Romance languages exhibited the V2 effect, supposedly due to contact with Germanic languages; see Diez (1882), Thurneysen (1892). Although this analysis of OF was never generally accepted, see Richter (1903), it is also defended in generative studies, e.g. Adams (1987) or Roberts (1993), and Bowern (2008) explains it as an effect of borrowing from Old Germanic. The loss of this property (in the early 16th century, according to Roberts, 1993, p. 199) would thus be an instance of parametric change. The main reason for viewing OF as a V2 language is the occurrence of post-verbal subjects, analyzed as reflecting verb movement to a high structural position in the clause (e.g. C°). The subject may be placed either in pre-verbal position (SpecCP) or in post-verbal position (SpecTP or Spec*v*P) if a non-subject constituent occurs sentence-initially. Modern French is argued to have lost the first option, i.e. the finite verb moves only to T°, and the subject generally occupies the pre-verbal position (SpecTP). As a result, verb-third (V3) orders become possible (Adams, 1987; Roberts, 1993, among others). Yet V3 patterns which are not licit in a V2 language are also attested in OF. This has led Kaiser (1998, 2002) and others to reject the V2 analysis for medieval Romance languages, arguing that VS order in OF can be explained differently. Note that XP–V–S-sentences also occur in non-V2 null-subject languages like Spanish. Here, they are commonly explained as resulting from finite verb raising to T° with the post-verbal subject in its base position (Spec*v*P). Rinke and Meisel (2009), investigating syntax and information structure of inversion constructions in OF and in modern Romance null-subject languages, demonstrate that apparent verb-second placement in OF has never been the result of movement of the verb and some other constituent to the CP-domain. Just like Modern Romance languages but in contrast to Modern French, Old French allowed the association of the subject DP with a focus reading in its *in situ* position, Spec*v*P. Moreover, it is highly implausible to assume that XV in OF emerged under Germanic influence. Not only could Hinterhölzl and Petrova (2008) show that the verb-second property was not yet fully grammaticized in Old High German, Elsig (2009), comparing word order in OF and Middle High German (MHG), found that these two languages differed significantly in the use of XV and V3 patterns. He analyzed charters dating from the thirteenth century and stemming from the region most likely to mirror effects of language contact, i.e. the area surrounding the French–German language border. According to the proponents of the transfer hypothesis, Germanic settlers in this area exerted massive linguistic influence on the Romanic speaking population during the second half of the first millennium. Yet XV and V3 clauses turned out to constitute the most clearly differentiating contexts between the two languages. In sum, OF exhibits V3 constructions not licensed by Germanic V2 grammars,

and apparent V2 patterns can be analyzed as reflecting VS orders typically found in modern Romance null-subject languages, as was to be expected since OF is generally regarded as a null-subject language. These findings lead to the conclusion that OF was not, in fact, a V2 language and that, consequently, this parameter has not been set to a different value in the course of diachronic change in French.

To conclude, I believe that I have presented evidence suggesting that, although bilingual acquisition in situations of language contact can be argued to be of significant importance for explanations of grammatical change, reanalysis affecting parameter settings is much less likely to happen than is commonly assumed in historical linguistics. If this is correct, it corroborates the claim that a closer cooperation between various subfields of developmental linguistics promises to produce deeper insights into the mechanisms of linguistic development.

References

Adams, M. (1987). *Old French, null subjects, and verb second phenomena*. Ann Arbor, MI: UMI Dissertation Services.

Almgren, M., & Barreña, A. (2005). El desarrollo de la morfología de futuro en castellano y euskera en niños monolingües y bilingües. *Cognitiva*, 17, 127–142.

Andersen, H. (1973). Abductive and deductive change. *Language*, 49, 765–793.

Andersen, R. W. (ed.) (1983). *Pidginization and creolization as language acquisition*. Rowley, MA: Newbury House.

Andersen, R. W. (1984). What's gender good for, anyway? In R. W. Andersen (ed.), *Second languages: A cross-linguistic perspective*, pp. 77–99. Rowley, MA: Newbury House.

Auer, P., & Schmidt, J. E. (eds.) (2010). *Language and space: An international handbook of linguistic variation* (vol. 1): *Theories and methods*. Berlin: Mouton de Gruyter.

Bates, E., & MacWhinney, B. (1989). Functionalism and the competition model. In B. MacWhinney & E. Bates (eds.), *The crosslinguistic study of sentence processing*, pp. 3–73. Cambridge: Cambridge University Press.

Bernardini, P., & Schlyter, S. (2004). Growing syntactic structure and code mixing in the weaker language: The Ivy Hypothesis. *Bilingualism: Language and Cognition*, 7 (1), 49–69.

Biberauer, T. (ed.) (2008). *The limits of syntactic variation*. Amsterdam: John Benjamins.

Bley-Vroman, R. (1989). What is the logical problem of foreign language learning? In S. M. Gass & J. Schachter (eds.), *Linguistic perspectives on second language acquisition*, pp. 141–168. Cambridge: Cambridge University Press.

Blom, E., Polišenská, D., & Weerman, F. (2008). Articles, adjectives, and age of onset: The acquisition of Dutch grammatical gender. *Second Language Research*, 24, 297–331.

Bonnesen, M. (2007). V2 ou V3? La position du verbe fléchi en français chez des enfants bilingues français–allemand. *AILE (Acquisition et Interaction en Langue Étrangère)*, 25, 103–128.

Bonnesen, M. (2009). The status of the "weaker" language in unbalanced French/German bilingual language acquisition. *Bilingualism: Language and Cognition*, 12 (2), 177–192.

Bonnesen, M., & Kroffke, S. (2007). The acquisition of questions in L2 German and French by children and adults. *Working Papers in Bilingualism*, 83. University of Hamburg, Research Center on Multilingualism.

Borer, H. (1984). *Parametric syntax*. Dordrecht: Foris.

Bowern, C. (2008). Syntactic change and syntactic borrowing in generative grammar. In G. Ferraresi & M. Goldbach (eds.), *Principles of syntactic reconstruction*, pp. 187–216. Amsterdam: John Benjamins.

Brandner, E., & Ferraresi, G. (1996). Introduction. In E. Brandner & G. Ferraresi (eds.), *Language change and generative grammar*, pp. 7–21. Opladen: Westdeutscher.

Carroll, S. E. (1989). Language acquisition studies and a feasible theory of grammar. *Canadian Journal of Linguistics*, 34, 399–418.

Carroll, S. E. (1999). Input and SLA: Adults' sensitivity to different sorts of cues to French gender. *Language Learning*, 49, 37–92.

Carroll, S. E. (2001). *Input and evidence: The raw material of second language acquisition*. Amsterdam: John Benjamins.

Chomsky, N. (1981). *Lectures on government and binding*. Dordrecht: Foris.

Chomsky, N. (1986). *Knowledge of language: Its nature, origin and use*. New York: Praeger.

Chomsky, N. (1989). Some notes on economy of derivation and representation. *MIT Working Papers in Linguistics*, 10, 43–74.

Chomsky, N. (1995). *The Minimalist Program*. Cambridge, MA: The MIT Press.

Clahsen, H. (1991). Constraints on parameter setting: A grammatical analysis of some acquisition stages in German child language. *Language Acquisition*, 1, 361–391.

de Houwer, A. (1995). *Bilingual language acquisition*. In Fletcher & MacWhinney (eds.), pp. 219–250.

Diez, F. (1882[5]). *Grammatik der romanischen Sprachen. Drei Theile in einem Bande*. Bonn: Weber.

Döpke, S. (1998). Competing language structures: The acquisition of verb placement by bilingual German–English children. *Journal of Child Language*, 25, 555–584.

Döpke, S. (2000a). Generation of and retraction from cross-linguistically motivated structures in bilingual first language acquisition. *Bilingualism: Language and Cognition*, 3 (3), 209–226.

Döpke, S. (2000b). *The interplay between language-specific development and crosslinguistic influence*. In Döpke (ed.), pp. 79–103.

Döpke, S. (ed.) (2000c). *Cross-linguistic structures in simultaneous bilingualism*. Amsterdam: John Benjamins.

Elsig, M. (2009). Verb second effects in Old French and Middle High German: Considerations from the language border. Ms., Universität Hamburg.

Fletcher, P., & MacWhinney, B. (eds.) (1995). *The handbook of child language*. Oxford: Blackwell.

Flores, C. (2008). A competência sintáctica de falantes bilingues luso–alemães regressados a Portugal. Um estudo sobre erosão linguística. Ph.D. dissertation, Universidade do Minho, Braga.

Flores, C. (2010). The effect of age on language attrition: Evidence from bilingual returnees. *Bilingualism: Language and Cognition*, 13 (4), 533–546.

Fodor, J. D. (1998). Unambiguous triggers. *Linguistic Inquiry*, 29, 1–36.

Fritzenschaft, A., Gawlitzek-Maiwald, I., & Tracy, R. (1990). Wege zur komplexen Syntax. *Zeitschrift für Sprachwissenschaft*, 9, 52–134.

Granfeldt, J., & Schlyter, S. (2004). Cliticisation in the acquisition of French as L1 and L2. In Prévost & Paradis (eds.), pp. 333–370.

Grosjean, F. (2000). The bilingual's language modes. In J. L. Nicol (ed.), *One mind, two languages: Bilingual language processing*, pp. 1–15. Oxford: Blackwell.

Hale, M. (1998). Diachronic syntax. *Syntax*, 1, 1–18.

Hawkins, R., & Franceschina, F. (2004). Explaining the acquisition and non-acquisition of determiner–noun gender concord in French and Spanish. In Prévost & Paradis (eds.), pp. 175–205.

Haznedar, B. (2003). The status of functional categories in child second language acquisition: Evidence from the acquisition of CP. *Second Language Research*, 19, 1–41.

Hermans, D., Bongaerts, Th., de Bot, K., & Schreuder, R. (1998). Producing words in a foreign language: Can speakers prevent interference from their first language? *Bilingualism: Language and Cognition*, 1 (3), 213–229.

Hinterhölzl, R., & Petrova, S. (2008). From V1 to V2 in Older Germanic. Ms., Humboldt University Berlin.

Hulk, A. (2000). *Non-selective access and activation in child bilingualism: The syntax*. In Döpke (ed.), pp. 57–78.

Hulk, A., & Cornips, L. (2006). Between 2L1 and child L2 acquisition. In Lleó (ed.), pp. 115–137.

Hulk, A., & Müller, N. (2000). Bilingual first language acquisition at the interface between syntax and pragmatics. *Bilingualism: Language and Cognition*, 3 (3), 227–244. [Special Issue, F. Genesee (ed.), *Syntactic aspects of bilingual acquisition*.]

Hulk, A., & Van Der Linden, E. (1996). Language mixing in a French–Dutch bilingual child. In E. Kellerman, B. Weltens & Th. Bongaerts (eds.), *EUROSLA 6: A selection of papers. Toegepaste Taalkunde in Artikelen*, 55 (2), 89–102.

Hyltenstam, K., & Abrahamsson, N. (2003). Maturational constraints in second language acquisition. In C. Doughty & M. H. Long (eds.), *Handbook of second language acquisition*, pp. 539–588. Oxford: Blackwell.

Johansson, C. (1997). *A view from language: Growth of language in individuals and populations*. Lund: Lund University Press.

Kaiser, G. A. (1998). Verb – Zweit-Effekte in der Romania: Eine diachronische Studie mit besonderer Berücksichtigung des Französischen. Habilitation thesis, University of Hamburg.

Kaiser, G. A. (2000). Dialect contact and language change: A case study on word order change in French. *Working Papers in Multilingualism*, 3. University of Hamburg, Research Center on Multilingualism.

Kaiser, G. A. (2002). *Verbstellung und Verbstellungswandel in den romanischen Sprachen*. Tübingen: Niemeyer.

Kaiser, G. A., & Meisel, J. M. (1991). Subjekte und Null-Subjekte im Französischen. In S. Olsen & G. Fanselow (eds.), *Det, Comp und Infl: Zur Syntax funktionaler Kategorien und grammatischer Funktionen*, pp. 110–136. Tübingen: Niemeyer.

Köppe, R. (1994). The DUFDE project. In Meisel (ed.), pp. 15–27.

Krashen, S. (1973). Lateralization, language learning and the critical period: Some new evidence. *Language Learning*, 23, 63–74.

Kroch, A. S. (2001). Syntactic change. In M. Baltin (ed.), *The handbook of contemporary syntactic theory*, pp. 699–729. Oxford: Blackwell.

Kroch, A., & Taylor, A. (1997). Verb movement in Old and Middle English: Dialect variation and language contact. In A. van Kemenade & N. Vincent (eds.), *Parameters and morphosyntactic change*, pp. 297–325. Cambridge: Cambridge University Press.

Kroffke, S., & Rothweiler, M. (2006). Variation im frühen Zweitspracherwerb des Deutschen durch Kinder mit türkischer Erstsprache. In M. Vliegen (ed.), *Variation in Sprachtheorie und Spracherwerb. Akten des 39. Linguistischen Kolloquiums in Amsterdam*, pp. 145–154. Frankfurt/M: Peter Lang.

Labov, W. (1975). On the use of the present to explain the past. In L. Heilmann (ed.), *11th International Congress of Linguists*, pp. 825–851. Bologna: Il Mulino.

Labov, W. (2007). Transmission and diffusion. *Language*, 83, 344–387.

Lakshmanan, U. (1994). *Universal Grammar in child second language acquisition*. Amsterdam: John Benjamins.

Lightfoot, D. (1991). *How to set parameters: Arguments from language change*. Cambridge, MA: The MIT Press.

Lightfoot, D. (1997). Catastrophic change and learning theory. *Lingua*, 100, 171–192.

Lightfoot, D. (1999). *The development of language: Acquisition, change, and evolution*. Oxford: Blackwell.

Lightfoot, D. (2000). How long was the nineteenth century? *D.E.L.T.A.*, 16 (No Especial), 81–98.

Lightfoot, D. (2006). *How new languages emerge*. Cambridge: Cambridge University Press.

Lleó, C. (ed.) (2006). *Interfaces in multilingualism*. Amsterdam: John Benjamins.

Longobardi, G. (2001). Formal syntax, diachronic minimalism and etymology: The history of French *chez*. *Linguistic Inquiry*, 32, 275–302.

Meisel, J. M. (1991). Principles of Universal Grammar and strategies of language use: On some similarities and differences between first and second language acquisition. In L. Eubank (ed.), *Point–counterpoint: Universal Grammar in the second language*, pp. 231–276. Amsterdam: John Benjamins.

Meisel, J. M. (1993). Simultaneous first language acquisition: A window on early grammatical development. *D.E.L.T.A.*, 9 (No Especial), 353–385.

Meisel, J. M. (ed.) (1994). *Bilingual first language acquisition: French and German grammatical development*. Amsterdam: John Benjamins.

Meisel, J. M. (1995). Parameters in acquisition. In Fletcher & MacWhinney (eds.), pp. 10–35.

Meisel, J. M. (1997). The acquisition of the syntax of negation in French and German: Contrasting first and second language acquisition. *Second Language Research*, 13, 227–263.

Meisel, J. M. (2001). The simultaneous acquisition of two first languages: Early differentiation and subsequent development of grammars. In J. Cenoz & F. Genesee (eds.), *Trends in bilingual acquisition*, pp. 11–41. Amsterdam: John Benjamins.

Meisel, J. M. (2004). The bilingual child. In T. K. Bhatia & W. C. Ritchie (eds.), *The handbook of bilingualism*, pp. 91–113. Oxford: Blackwell.

Meisel, J. M. (2007a). The weaker language in early child bilingualism: Acquiring a first language as a second language? *Applied Psycholinguistics*, 28, 495–514.

Meisel, J. M. (2007b). On autonomous syntactic development in multiple first language acquisition. In H. Caunt-Nulton, S. Kulatilake & I.–H. Woo (eds.), *Proceedings of the 31st Boston University Conference on Language Development*, pp. 26–45. Somerville, MA: Cascadilla Press.

Meisel, J. M. (2007c). Morphology as a problem space in child second language acquisition. Presented at the University of Toronto (Department of Linguistics), November 30, 2007.

Meisel, J. M. (2008a). Child second language acquisition or successive first language acquisition? In B. Haznedar & E. Gavruseva (eds.), *Current trends in child second language acquisition: A generative perspective*, pp. 55–80. Amsterdam: John Benjamins.

Meisel, J. M. (2008b). Âge du début de l'acquisition successive du bilinguisme. Effets sur le développement grammatical. In M. Kail, M. Fayol & M. Hickman (eds.), *Apprentissage des langues premières et secondes*, pp. 245–272. Paris: Editions du CNRS.

Meisel, J. M. (2009). Second language acquisition in early childhood. *Zeitschrift für Sprachwissenschaft*, 28, 5–34.

Möhring, A. (2001). The acquisition of French by German children of pre-school age: An empirical investigation of gender assignment and gender agreement. In S. Foster-Cohen & A. Nizegorodcew (eds.), *Eurosla Yearbook*, 1, pp. 171–193. Amsterdam: John Benjamins.

Montrul, S. (2004). Subject and object expression in Spanish heritage speakers: A case of morphosyntactic convergence. *Bilingualism: Language and Cognition*, 7 (2), 125–142.

Montrul, S., & Potowski, K. (2007). Command of gender agreement in school-age Spanish–English bilingual children. *The International Journal of Bilingualism*, 11, 301–328.

Müller, N. (1994). Parameters cannot be reset: Evidence from the development of COMP. In Meisel (ed.), pp. 235–269.

Murray, R. W. (2010). *Language and space: The Neogrammarian tradition*. In Auer & Schmidt (eds.), pp. 70–86.

Niyogi, P., & Berwick, R. C. (1995). *The logical problem of language change*. MIT, Center for Biological and Computational Learning: AI Memo No.1516/C.B.C.L Paper No. 115.

Paul, H. (1880, 1920[5]). *Prinzipien der Sprachgeschichte*. Halle a.S.: Niemeyer. [1975[9], Tübingen: Niemeyer.]

Pfaff, C. W. (1992). The issue of grammaticalization in early German second language. *Studies in Second Language Acquisition*, 14, 273–296.

Pienemann, M. (1998). Developmental dynamics in L1 and L2 acquisition: Processability Theory and generative entrenchment. *Bilingualism: Language and Cognition*, 1 (1), 1–20.

Platzack, C. (1995). The loss of verb second in English and French. In A. Battye & I. [G.] Roberts (eds.), *Clause structure and language change*, pp. 200–226. Oxford: Oxford University Press.

Poplack, S., & Levey, S. (2010). *Contact-induced grammatical change: A cautionary tale*. In Auer & Schmidt (eds.), pp. 391–418.

Prévost, P., & Paradis, J. (eds.) (2004). *The acquisition of French in different contexts: Focus on functional categories*. Amsterdam: John Benjamins.

Richter, E. (1903). *Zur Entwicklung der romanischen Wortstellung aus der lateinischen*. Halle a. S.: Niemeyer.

Rinke, E., & Meisel, J. M. (2009). Subject-inversion in Old French: Syntax and information structure. In G. A. Kaiser & E.-M. Remberger (eds.), *Proceedings of the workshop "Null-subjects, expletives, and locatives in Romance"* (University of Constance, Working Paper 123), pp. 93–130.

Roberts, I. G. (1993). *Verbs and diachronic syntax: A comparative history of English and French*. Dordrecht: Kluwer.

Roeper, T. (1999). Universal bilingualism. *Bilingualism: Language and Cognition*, 2 (3), 169–186.

Rothweiler, M. (2006). The acquisition of V2 and subordinate clauses in early successive acquisition of German. In Lleó (ed.), pp. 91–113.

Ruben, R. J. (1997). A time frame of critical/sensitive periods of language development. *Acta Otolaryngologica*, 117, 202–205

Sankoff, G. (2005). Cross-sectional and longitudinal studies in sociolinguistics. In U. Ammon, N. Dittmar, K. J. Mattheier & P. Trudgill (eds.), *An international handbook of the science of language and society*, pp. 1003–1013. Berlin: Mouton de Gruyter.

Sankoff, G., & Blondeau, H. (2007). Language change across the lifespan: /r/ in Montréal French. *Language*, 83, 560–588.

Schachter, J. (1990). On the issue of completeness in second language acquisition. *Second Language Research*, 6, 93–124.

Schlyter, S. (1993). The weaker language in bilingual Swedish–French children. In K. Hyltenstam & A. Viberg (eds.), *Progression and regression in language: Sociocultural, neuropsychological and linguistic perspectives*, pp. 289–308. Cambridge: Cambridge University Press.

Schlyter, S., & Håkansson, G. (1994). Word order in Swedish as the first language, second language and weaker language in bilinguals. *Scandinavian Working Papers on Bilingualism*, 9, 49–66.

Schwartz, B. D. (2004). On child L2 development of syntax and morphology. *Lingue e Linguaggio*, 3, 97–132.

Silva-Corvalán, C. (1994). *Language contact and change*. Oxford: Oxford University Press.

Silva-Corvalán, C. (2003). Linguistic consequences of reduced input in bilingual first language acquisition. In S. Montrul & F. Ordóñez (eds.), *Linguistic theory and language development in Hispanic languages*, pp. 375–397. Somerville, MA: Cascadilla Press.

Sitaridou, I. (2005). A corpus-based study of null subjects in Old French and Old Occitan. In C. D. Pusch, J. Kabatek &

W. Raible (eds.), *Romance corpus linguistics II: Corpora and diachronic linguistics*, pp. 359–374. Tübingen: Narr.

Smith, N., & Tsimpli, I.-M. (1995). *The mind of a savant: Language learning and modularity*. Oxford: Blackwell.

Sopata, A. (2008). Finiteness in child second language acquisition. Presented at the Colloquium on Language Acquisition and Change: Across the Lifespan and across Generations, University of Hamburg, June 2008.

Sorace, A. (2004). Native language attrition and developmental instability at the syntax–discourse interface: Data, interpretations and methods. *Bilingualism: Language and Cognition*, 7 (2), 143–145.

Thomason, S. Grey, & Kaufman, T. (1988). *Language contact, creolization, and genetic linguistics*. Berkeley, CA: University of California Press.

Thurneysen, R. (1892). Zur Stellung des Verbums im Altfranzösischen. *Zeitschrift für romanische Philologie*, 16, 289–307.

Towell, R., & Hawkins, R. (1994). *Approaches to second language acquisition*. Clevedon: Multilingual Matters.

Tracy, R. (1991). *Sprachliche Strukturentwicklung: Linguistische und kognitionspsychologische Aspekte einer Theorie des Erstspracherwerbs*. Tübingen: Narr.

Tracy, R. (1995). Child languages in contact: Bilingual language acquisition (English/German) in early childhood. Habilitation thesis, University of Tübingen.

Tracy, R. (1998). Transfer versus coexistent systems. *Bilingualism: Language and Cognition*, 1 (3), 185–186.

Tsimpli, I.-M., & Roussou, A. (1991). Parameter resetting in L2? *UCL Working Papers in Linguistics*, 3, 149–169.

Tsimpli, I.-M., Sorace, A., Heycock, C., & Filiaci, F. (2004). First language attrition and syntactic subjects: A study of Greek and Italian near-native speakers of English. *International Journal of Bilingualism*, 8, 257–277.

Unsworth, S. (2005). *Child L2, adult L2, child L1: Differences and similarities. A study on the acquisition of direct object scrambling in Dutch*. Utrecht: LOT.

Weerman, F. (1993). The diachronic consequences of first and second language acquisition: The change from OV to VO. *Linguistics*, 31, 901–931.