Diversity and divergence in bilingual acquisition

https://doi.org/10.1515/zfs-2021-2025
Received May 6, 2020; revised December 4, 2020; accepted February 3, 2021; published online April 24, 2021

Abstract: Bilingual settings are perceived as exemplary cases of linguistic diversity, and they are assumed to trigger cross-linguistic interaction. The rationale underlying this assumption is the belief that when more than one language is processed in a brain, this will inevitably affect the way in which linguistic knowledge is acquired, stored and used. However, this idea stands in conflict with results obtained by research on children acquiring two (or more) languages simultaneously. They have been demonstrated to be able to differentiate languages from early on and to develop competences qualitatively identical to those of monolinguals. These studies thus provide little evidence supporting the idea that bilingualism must lead to divergent grammatical development.

The question then is what triggers alterations of bilinguals’ grammars, especially of the syntactic core, possibly resulting in non-native competences. This has been claimed to occur in the acquisition of second languages, weaker languages of simultaneous bilinguals, or heritage languages. These acquisition types differ from first language development in that onset of acquisition of one language is delayed or that the amount of exposure to one language is reduced. I will argue that age at onset and severely reduced amount of exposure are potential causal factors triggering divergent developments, whereas bilingualism on its own is not a sufficient cause of divergence.

Keywords: simultaneous and successive bilingualism, weaker languages, heritage languages, syntactic core, age of onset of acquisition, input/exposure

1 Linguistic theorising and acquisition research

Bilingual settings are by definition instances of linguistic diversity. It may therefore seem obvious that research on bilingual acquisition should be able to make a meaningful contribution to the study of linguistic diversity. Yet understanding di-
versity requires understanding shared as well as divergent properties of linguistic varieties. This can be achieved by scrutinising different types of bilingual acquisition. By identifying common and divergent properties we can determine whether we are dealing with diversity in substance or merely in manifestation. This is the main issue that I will pursue here. As should become apparent in what follows, it is a challenge that requires joint efforts by developmental and theoretical linguistics. My discussion focuses on morphosyntactic aspects of grammatical development in bilingual settings. I will not, however, present a state-of-the-art summary of studies on bilingual acquisition. Rather, I will summarise some insights that are pertinent for the line of argument to be pursued in this paper.

The appeal for cooperation between acquisition research and grammatical theorising is, of course, neither new nor original. It follows naturally from the perspective adopted after the cognitive turn in linguistics, identifying mental grammars as the main object of linguistic research. This entails that an adequate theory of language must not only account for the properties of grammatical knowledge, it must also explain how grammars are acquired and how they are put to use. On this assumption, the study of developmental issues is an integral part of linguistic theorising. Consequently, properties that are not learnable by exposure to primary linguistic data (PLD) cannot be claimed to be part of grammars, unless they can be argued to be provided by the language faculty and thus to be available prior to experience. This is not the occasion to assess the merits of this research program or to evaluate how well it has been executed over the past 50 years. Let me merely emphasise that acquisition research is not merely a testing ground for theoretical claims. Fruitful interaction between theoretical and developmental studies requires action in both directions. Phenomena observed in the speech of language learners call for theoretically motivated explanations, even if the issues at stake are not on the current agenda of linguistic theorising.

2 Linguistic diversity in bilingual settings

Turning to the main topic of this paper, my first observation is that bilingual settings are perceived as prototypical cases of linguistic diversity simply because more than one language is used; cf. Thomason and Kaufman (1988) or Thomason (2001). This is trivially correct, but it does not in itself represent an insight worth pursuing. Rather, what makes it a research topic of special interest is that language contact is frequently assumed to inevitably trigger cross-linguistic interaction, resulting in further diversity within and across linguistic varieties; see Meisel (2011a) for a critical discussion of this claim. One of the predicted effects generating diversity is increased variability in language use. Others imply alterations of
speakers’ grammatical competences, most importantly system-internal restructuring induced by contact, incorporation of new options from another grammar by transfer, or simplification of systems as a result of incomplete acquisition or attrition; see 4.2, below, for more details. The rationale underlying these assumptions seems to be the belief that when more than one language is processed in one brain, this must affect the way in which linguistic knowledge is acquired, stored and used, ultimately altering the nature of the system itself. Note that this view, implying an all-embracing effect of bilingualism on language knowledge or use, is not necessarily propagated explicitly. Yet the fact that cross-linguistic interaction is routinely postulated as the null-hypothesis, reveals that monolingualism continues to be the gold standard in publications on bilingualism.

My objection to this view is based on the fact that findings to the contrary, suggesting a considerable autonomy of each language within individuals or across individuals, are not readily acknowledged across research domains. Not to be misunderstood: autonomy does not exclude the possibility of cross-linguistic interaction. Rather, it implies that language contact in itself is not a sufficient trigger and that interaction does not happen across the board. As is evidenced by studies of contact-induced diachronic change as well as of bilingual acquisition, some aspects of language are considerably more vulnerable than others; see Meisel et al. (2013) for an in-depth discussion of these issues. In fact, variation in use is a more likely effect than restructuring of grammatical knowledge, and morphosyntax counts among the domains least likely to be affected. Furthermore, if acquisition is assumed to be the locus of change, developmental schedules and age of onset of acquisition (AOA) must be taken into account, for grammatical properties are affected differently at different points of development, the probability of such effects increasing with later AOA; cf. Meisel (2011a). Thus, the autonomy hypothesis argues against the assumption of a direct causality between language contact and cross-linguistic interaction affecting grammatical knowledge.

In this paper, the focus lies on issues related to this hypothesis of autonomy of linguistic systems. The autonomy assumption derives from the insight that the human Language (Making) Capacity (LMC) enables bilinguals to acquire and develop distinct grammars. Note that the LMC comprises domain-general as well as domain-specific cognitive principles and mechanisms. However, for the present purposes, I am only concerned with the latter, the language-specific ones, referred to as the Language Acquisition Device (LAD). Its core component is the UG (Universal Grammar); it comprises universal principles constraining formal properties of human languages as well as discovery principles bootstrapping children into grammatical systems; cf. Meisel (2011b). Developmental autonomy has been argued to be enabled and facilitated by the LMC, particularly by the LAD; see Section 3. Thus, although grammatical systems interact, this will ordinarily not result
in alterations representing qualitative differences in comparison to the respective monolingual grammars. The challenge then is to identify the conditions under which even the least vulnerable properties change. In other words, I propose to explore the limits of the LAD, searching for factors that cause changes to happen that do not normally occur.

In what follows, I focus on morphosyntactic properties, more specifically on core properties, the products of narrow syntax, since these can be argued to be most resistant to change. Even if the core-periphery distinction has been the object of controversies, see Culicover (2013), the notion of core is at least methodologically useful in that it allows us to identify the properties envisaged here. They are “deep seated” in the sense that they are universal and “(tie) together a number of linguistic phenomena which, on the surface, appear to be unrelated” (Crain 2010: 67). It is no coincidence that these characteristics are also defining criteria of grammatical parameters. The core can indeed be understood as consisting of the relatively stable state of linguistic knowledge that results from the setting of parameters (Chomsky 1981, Chomsky 1986). In fact, core properties like head-complement directionality or verb-second placement (V2) also count among the ones defining typological diversity of languages. Even more importantly, they are the first syntactic properties to be acquired in first language (L1) acquisition. Tsimpli (2014) actually argues that they are acquired early because they are core properties produced by narrow syntax and thus not subject to interface restrictions and not dependent on extra-syntactic or extra-linguistic resources.

In sum, studying the fate of core properties of syntax in language contact situations not only promises insights into the nature and the limits of the LMC, it can also inform us about how grammar constrains linguistic development. Concerning linguistic diversity in bilingual settings, the study of these issues will help us to decide whether we are looking at the point of departure of divergent developments. The question is whether noncanonical constructions as manifestations of contact-induced variation constitute variants within a unitary system or whether they indicate emergence of a new variety with distinct grammatical properties. Answering this question requires a theoretically informed understanding of the nature of these properties as well as of the factors that favour their emergence.

3 Insights from research on bilingual acquisition

When discussing language change, it should be useful to remember that change ultimately happens in the minds of individuals. Notwithstanding the fact that diffusion among members of a speech community, too, requires explanation,
grammatical change necessarily implies a reorganization of the mental grammars of individuals. And the most promising approach in search of explanations of these alterations of grammatical systems is arguably the study of language acquisition, for major restructurings of grammars are unlikely to occur across the lifespan of adults. To the extent that mature grammars are at all affected by such changes, they concern peripheral rather than core properties; cf. Sankoff (2005; 2019). I will limit the following to some remarks on bilingual acquisition, i.e. simultaneous (2L1) as well successive (L2) acquisition of two or more languages. It is most pertinent in the present context, for it can enable us to disentangle the roles of three variables that are generally assumed to be responsible for transmission failure resulting in grammatical modifications, namely language contact, varying ages of onset of acquisition, and reduced amount of exposure to the target languages.

This is not an occasion to summarise the history of this field, but it is worth remembering that research on child bilingualism was initiated more than 100 years ago when Ronjat¹ (1913) published a case study of his son Louis, acquiring French and German simultaneously. On the advice of his colleague Maurice Grammont, Ronjat suggested the one person, one language method for raising children bilingually, applied successfully since. Importantly, he demonstrated that exposing children to two languages from birth allows them to acquire two native languages simultaneously. Most of the publications that appeared during the following 60 years did not significantly enhance our understanding of child bilingualism. Notable exceptions are the works by Pavlovitch (1920) and Leopold² (1939–1949). In spite of these and other valuable contributions, child bilingualism remained a marginal topic for years to come. This changed with the publication of a number of influential studies in the late 1970’s and early 1980’s. The 1990’s then witnessed “an explosion of published work on BFLA [bilingual first language acquisition]” (De Houwer 2009: 13), and it has grown rapidly ever since.

As mentioned before, processing more than one language in one brain is widely assumed to be a serious challenge, especially for children. It is therefore not surprising that this assumption also dominated research on bilingual acqui-

¹ Jules Ronjat (1864–1925) worked primarily on the history of Provençal. His Grammaire istorique des parlers provençaux modernes, 4 vols. (Montpellier 1930–1941, Geneva/Marseille 1980) is still considered as one of the most important works on this language. In 1914, he moved to Geneva, taught courses at the university and served as proofreader for Ferdinand de Saussure’s Cours de linguistique générale.

² Werner F. Leopold (1896-1984) grew up in Hamburg and studied in Göttingen. After brief periods in Costa Rica and at Marquette University, he taught for the rest of his career at Northwestern University.
sition during the first two decades (1980–1999) of the now firmly established field of child bilingualism. It focused strongly on the issue of language differentiation, investigating whether simultaneous bilinguals are able to separate the two languages in their mental grammars.

The conclusion is that early differentiation is not only possible, it rather represents the typical outcome of simultaneous bilingualism. Contrasting functionally equivalent constructions that exhibit distinct formal properties in the languages of a bilingual provides the required evidence. This can either be achieved by comparing the use of the two languages by the same individual or by contrasting the use of each language of a bilingual with use by corresponding monolinguals. Research along these lines has produced ample evidence indicating that core syntactic properties like head-complement directionality, V2 placement, finiteness, subject-verb agreement or null-subjects emerge very early and as required by the target grammars of the languages of bilinguals. Initially, this evidence stemmed almost exclusively from studies of Indo-European language pairs. In the meantime, earlier findings have been confirmed by analyses of many language pairs, including non-Indo-European languages. The discovery that differentiation is typically achieved early and without apparent effort by children acquiring two languages simultaneously is today generally accepted by acquisition researchers.

During the following two decades (1999–2019) of the past 40 years of research on early child bilingualism, the thematic focus has shifted to issues concerning subsequent developments. Cross-linguistic interaction has since become a frequently investigated and hotly debated concern. Although there can be no doubt that interaction happens in language use, the question whether it can also lead to alterations of grammatical knowledge is a matter of controversy. I will return to this problem in the following section. At this point, what matters is that research on early bilingualism has demonstrated beyond reasonable doubt that children exposed to two or more languages from birth can acquire two or more first languages. They need not go through an initial phase during which they develop a unitary system, they proceed in each of their languages through developmental phases identical to those of corresponding monolinguals, and they ultimately achieve grammatical competences not distinct from those of monolinguals; cf. Meisel (2011b; 2019). From this it follows that language contact, by itself, is not a sufficient cause of cross-linguistic interaction affecting grammatical knowledge. Rather, these findings strongly support the autonomy hypothesis. It remains to be seen how the other two potential causes of change, AOA and reduced exposure to the target language, fare in this respect.

The major insight thus is that the human Language Making Capacity is an endowment for bilingualism, enabling children to develop multiple first languages.
This has consequences for how we approach the study of multilingualism or, more generally, how we deal with diversity in the PLD to which children are exposed. Early differentiation and autonomous development suggest strongly that the LAD comprises mechanisms that enable bilingual children to cope with this kind of diversity encountered in the PLD, i.e. utterances whose structures are generated by different grammatical systems. In reality, heterogeneous linguistic environments are the rule rather than the exception. After all, monolinguals are multilectal, and they are able to keep lects apart. Not to forget the fact that all children acquiring an L1 are exposed to ungrammatical as well as grammatical utterances and need to be able to disregard the former in order to be able to develop their native grammar. The challenge for bilinguals is that they must not ignore all bits of conflicting evidence in the PLD. They must rather focus on the ones that serve as telltale triggers indicating that not all information extracted from the PLD should be integrated in a unique system. At the same time, however, they need to come to grips with the multilectal character of each of their languages.

Note that, so far, we have been wondering how a child can succeed in developing two and more grammars when exposed to a multilingual environment. Yet the more mysterious issue is how exposure to variable data can result in the development of only one mental grammar. The mystery is not how the brain of a very young child can cope with the diversity and complexity of PLD in multilingual settings. Rather, the question is what kind of diversity exceeds this capacity and triggers divergent developments. In other words, now that we know how successful simultaneous bilinguals are in differentiating and developing two or more grammars, it becomes more difficult to explain cross-linguistic effects on mental grammars than the lack of such effects.

4 Grammatical properties defining diversity and divergence

As we have seen, children exposed to two languages from birth are able to develop native competences in both of them. The empirical evidence on which this conclusion is based consists primarily of analyses of children's language use in both languages, as compared to speech samples from monolinguals. This revealed no qualitative differences between the two learner types. Neither L1 nor 2L1 speakers use constructions that are never attested in the speech of the other group. Moreover, they proceed through identical developmental sequences and attain ultimately grammatical knowledge not distinct from the other group.
Table 1: Some acquisition types and possibly distinguishing factors.

|                                                                 | L1 | 2L1 | WL   | HL   | cL2 | L2 | L3 | FL |
|------------------------------------------------------------------|----|-----|------|------|-----|----|----|----|
| More than one language                                           | –  | +   | +    | +    | +   | +  | +  | +  |
| Reduced exposure                                                  | –  | +   | +    | +    | +   | +  | +  | +  |
| AOA, successive acquisition                                      | –  | –   | –    | /+   | +   | +  | +  | +  |
| Previous knowledge                                                | –  | –   | –/+  | +    | +   | +  | +  | +  |
| Instruction                                                      | –  | –   | –    | –    | –/– | +  | –  | +  |

Stating that it is possible to acquire two or more first linguistic competences is obviously not tantamount to claiming that it will always work out this way. And since my goal is to test the limits of what the language faculty can achieve, the challenge is to find settings where bilinguals fail to acquire a native competence in at least one of their languages. More specifically, the task is to identify properties in which L1-like and non-L1-like varieties differ as well as properties that they share. This should allow us to decide whether the varieties in question represent different manifestations of identical kinds of linguistic knowledge or whether they constitute starting points of divergent developments. Once we have identified settings where qualitatively distinct varieties emerge, we can ask what the causal factors are that trigger such developments.

Even the most superficial scrutiny of situations in which two or more languages are acquired (see Table 1 for some examples) shows that the diversity of acquisition types is considerable, at least if one may assume that different labels indeed refer to qualitatively distinct entities: monolingualism (L1), simultaneous bilingualism (2L1), acquisition of the weaker of two languages (WLs), bimodal bilingualism, child second language acquisition (cL2), (adult) second language acquisition (L2), heritage language acquisition (HL), third language acquisition (L3), foreign language learning (FL), and so forth.

Since it is obviously not possible to deal with all of them, I will limit my discussion to the ones that, according to previous research, are most likely to exhibit non-native grammatical properties, possibly even differing from L1 and 2L1 acquisition in core syntactic properties like the ones mentioned earlier: head-complement directionality (VO/OV), ±V2, finiteness, subject-verb agreement, or null-subjects. In fact, I will merely state briefly and without further discussion the alleged non-native characteristics of cL2, L2, WL and HL, reviewing equally briefly the evidence presented in support of these claims. This will hopefully contribute to a clarification of how to define ‘qualitative difference’, a widely used term although there is no agreement on its meaning (Kupisch and Rothman 2018).
4.1 Grammatical properties defining divergence

Researchers agree that these acquisition types differ in at least some properties. Yet the interpretation of the distinguishing features as either contingent or substantive is a matter of controversy that is complicated by the fact that not every difference is pertinent in this respect. Rather, variation indicating distinct acquisition types must be distinguished from individual variation and from variability due to L1 speakers’ multilectal competence that allows them to move in a linguistic variation space determined by situational, regional or sociolinguistic variables. I will not dwell on this issue, but I want to emphasise that it represents a methodological complication rather than a principled obstacle to attempts at identifying distinct acquisition types. That native speakers’ mental grammars are not fully identical (Dąbrowska 2012), is neither a new nor an original insight. Children acquire the grammatical properties underlying the PLD, and they are exposed to various lects, including idiolects; cf. Flores and Rinke (2020). Concluding from inter-individual grammatical variability that acquisition is not guided by universal principles is, however, a *non sequitur*, and guidance by Universal Grammar does not mean that inductive learning plays no role; cf. Meisel (2011b).

Keeping this in mind, let us first ask how L2 acquisition differs from L1 (monolingual) and 2L1 (bilingual L1) development. Summarising succinctly the vast amount of research on this topic, one can say that it is consensus that L2 differs substantively from L1. Whether these differences may be qualified as ‘fundamental’ is, however, a fundamentally controversial issue. Over the past 30 years, this debate focused on the role of Universal Grammar. Under the assumption that UG is the centrepiece of the LAD, it has been argued that crucial (2)L1–L2 differences can be accounted for as resulting from maturational changes to which the LAD is subject, entailing inaccessibility of parameterised UG principles at later AOA. Unfortunately, the UG-or-not-UG discussion has not clarified this issue. This is largely due to uncertainties about core theoretical notions like ‘UG’ or ‘parameter’, even within generative linguistics. It has allowed researchers to adapt these concepts to the needs of desired results. Rather than leading to an at least partial consensus, the discussion just petered out. Here, my intention is to characterise (2)L1–L2 differences in purely empirical terms, the idea being that this should hopefully suffice to reveal which of them qualify as fundamental ones.

The following non-exhaustive list enumerates properties in which the two acquisition types have been shown to differ. Note that none of these differences have been detected when contrasting L1 and 2L1 acquisition.

1) Acquisition-type-specific constructions.
2) Developmental sequences.
3) Clustering of superficially unrelated phenomena.
4) Developmental patterns: Rapid changes & variable use.

**Table 2: Type-specific constructions.**

| (2)L1                                         | L2                                           |
|-----------------------------------------------|----------------------------------------------|
| Initially prefer pronominal subjects          | Initially strongly prefer nominal subjects   |
| Once subjects are used, frequency of use      | Frequency of subject use varies over time;   |
| increases rapidly to approach 100 %           | omissions constrained by situational and      |
|                                               | structural contexts                          |
| Rapid increase of agreement markers; soon     | Some learners use no agreement markers;      |
| 100 % correct                                 | others do so with limited success           |
| If there is a subject, V agrees with it;      | Numerous errors over the entire period       |
| virtually no errors                           | studied (65–110 weeks of exposure)           |
| Non-finite V consistently in final position;  | Position of V independent of [±fin] distinction; |
| finite V in V2                                | non-finite V in second position              |

Ad 1) Grammatical phenomena attested in some types of acquisition but not in others, e.g. in cL2 and aL2, but not in (2)L1 are likely to reflect differences in grammatical knowledge. The results of a study contrasting German L1 and 2L1 development with adult L2 acquisition can serve as an example; see Table 2, a slightly modified version of the one presented in Meisel (1991: 272).

At least two phenomena, subject-verb agreement and finite verb placement, both related to finiteness, can be argued to reflect qualitatively distinct grammatical knowledge in (2)L1 as compared to L2 learners. Subsequent research confirmed the claim that the acquisition of finiteness is a fast and virtually error-free process in L1, whereas it represents a major problem for L2 learners. In fact, placement of non-finite verbs in V2 position is never attested in (2)L1, but it is not uncommon in (c)L2. Similar results have been obtained by studies investigating the acquisition of finiteness in French; cf. Meisel (2009). Subject clitic pronouns (SCL) are finiteness markers in this language. Consequently, neither bilingual nor monolingual French L1 children ever combine SCL with non-finite verb forms; yet L2 learners use patterns of this type. Moreover, in French child language finite verbs precede negative *pas* as soon as they are used productively, whereas non-finite verbs follow it, i.e. SCL+V clusters are moved out of the VP. In L2 speech, on the other hand, finite V forms are attested before and after *pas*. Thus, finiteness and V movement are tightly connected in L1 development, whereas L2 is characterised by a dissociation of morphology and syntax.
Ad 2) This point refers to the fact that certain grammatical phenomena emerge in a strictly ordered sequence (Brown 1973). L1 acquisition is thus characterised by an ordered series of developmental phases, defined in terms of particular grammatical phenomena. These developmental sequences are invariant across learners, and they are strictly ordered in the sense that the order in which the phases are attained is not reversible. The underlying developmental logic is arguably grammatical in L1; see Meisel (2011b). In L2, on the other hand, other factors have been shown to intervene. Processability Theory, for example, explains it as reflecting increasing processing complexity; see Pienemann (1998).

Ad 3) The third phenomenon that can serve as a criterion identifying qualitative differences between acquisition types is commonly regarded as a property of grammatical parameters. Since parameters are defined at abstract levels of grammatical structure rather than in terms of surface properties, setting a parameter to a specific value typically causes a cluster of superficially unrelated grammatical properties to emerge simultaneously. This characterises earlier versions of parameters as well those referring to feature specifications of functional heads. Verb movement can again serve as an example. In languages like French or German where finite verbs are raised to CP and TP, respectively, they move over various elements, like negatives, adverbs, or quantifiers. A single operation thus triggers the emergence of a cluster of superficially unrelated phenomena during the same developmental phase in L1. In L2, they appear one by one, suggesting that they are learned separately.

Ad 4) L2 differs from L1 not only in the kinds of constructions used but also in how acquisition processes proceed. This difference manifests itself in two ways: a) In L1, one observes rapid changes of use, related to specific grammatical properties, whereas L2 is characterised by slow changes. ‘Rapid’ means that a phenomenon emerges within two or three months in a child’s speech. For example, a child acquiring German provides subject-verb agreement consistently, three months after the first verb is used and two months after agreement markers are first attested; cf. Meisel (2011b: 53–54) b) In L1, target-conforming forms and constructions are used consistently, once they are used productively, whereas in L2 the frequency of use of target forms oscillates (sometimes dramatically) in the course of acquisition of an individual and varies considerably across learners. Examples are the rapid increase of subjects and of finite verb forms, mentioned above.

In sum, empirical evidence gathered over the past 40 years allows us to conclude that first and second language acquisition exhibit qualitative differences that can justly be regarded as ‘fundamental’ in nature. Applying the differentiating criteria to simultaneous bilingualism reveals that 2L1 shares all the critical properties attributed to L1; it therefore deserves to be regarded as an instance of
L1 development. Child L2, on the other hand, shares crucial properties with adult L2. This is not to deny that it differs from aL2 in other respects. Yet in view of the observed child-adult L2 commonalities, early successive bilingualism can be classified as a type of L2 acquisition if AOA happens at an age between 3;0 and 4;0 or later; cf. Meisel (2009).

4.2 Grammatical properties defining diversity

So far, the focus of this discussion has been on properties distinguishing acquisition types. I argued that certain differentiating properties that are not attested in comparisons of simultaneous bilinguals with monolinguals do emerge in contrastive studies opposing (2)L1 and (c)L2 speakers. This demonstrates the importance of AOA as a causal factor of divergence, and it corroborates current terminological choices according to which we are dealing with two distinct acquisition types, L1 and L2, each with two subtypes, L1/2L1 and cL2/aL2. Qualitative differences distinguish types, whereas subtypes share qualitative properties but can differ in others. It is this latter statement that needs further consideration, for it has been argued that certain properties attested in the speech of 2L1 children actually indicate partial acquisition failure, thus constituting qualitative differences as compared to monolinguals. Early AOA is a necessary but not sufficient condition for the development of a native competence. Under unfavourable conditions, children can fail in this task. The challenge is to specify the conditions that must minimally be met for children to be able to develop native competences.

Unfortunately, we are far from being able to meet this challenge, although considerable efforts have been made, over the past 20 years, to uncover effects of unfavourable learning conditions. Studies suggesting that bilinguals fail to acquire an L1 competence in one of their languages either investigated settings where one language is dominant and the other weak, or they analysed the speech of bilinguals who had not been exposed continuously to one of their languages, i.e. heritage language learners. Interestingly, the alleged cause of acquisition failure is in both cases a reduced amount of exposure to the target language. Disappointingly, however, neither of these two lines of research has as yet provided insights that might allow us to determine with some confidence when exactly children face the risk of acquisition failure. In order to be able to do so, it is necessary to distinguish between variability in language use and effects of grammatical divergence. In what follows, I will show why certain empirical facts cannot be interpreted as effects of changes in grammatical knowledge. To be clear, I am not denying that external factors like amount of exposure can result in grammatical
divergence. Yet not just any noncanonical speech phenomenon counts as a valid piece of evidence supporting this conclusion.

The probably most frequently presented argument refers to frequency of use, mostly target-deviant uses by WL or HL speakers. Yet phenomena like rate of acquisition, frequency of occurrence, temporary preference for particular linguistic devices, etc., are quantitative differences not qualitative ones. Provided that a given construction is not omitted categorically, we must assume that the speaker’s grammar can generate it. Error rates, even if they are high, thus mean that learners have acquired this knowledge, but do not use it consistently. The task of acquisition research then is to explain why learners do not perform at the level of their competence. This is, however, of only limited interest for the definition of acquisition types.

Assessments of error frequencies nevertheless play an important role in studies of WL and HL speakers. Even the seminal WL studies by Schlyter (1993) or Schlyter and Håkansson (1994) rely strongly (though not exclusively) on this argument. According to their definition, a WL is characterised by slow acquisition rates and high variability in the use of the phenomena in question, ranging from non-existence to low frequency of occurrence. For example, Schlyter (1993) reports that Swedish-French bilingual children occasionally fail to place finite verbs in second position in WL Swedish. Table 3 presents some results obtained by Schlyter (1993) for three bilingual children (A, M, D) during various recording sessions (A2, A3, A4, etc.). The figures indicate frequency of use of a construction, i.e. “.5” in row *V3 means that 50% of the verbs used during this session were incorrectly placed in third position.

Table 3: Frequency of V2 constructions in required contexts.

|       | A2 | A3 | A4 | A5     | A6 | A7 | A8 | A9 | A10 | A11 | A12 | A13 |
|-------|----|----|----|--------|----|----|----|----|-----|-----|-----|-----|
| V2    | .5 | 1. | /  | .66    | /  | .66| 1. | .75| .6  | .33 | 0.  | .22 |
| *V3   | .5 | 0. | /  | .33    | /  | .33| 0. | .25| .4  | .66 | 1.  | .78 |
| M1    | .45| .66| .95| .8     | 1. | .9 | 1. |    |     |     |     |     |
| *V3   | 0. | .55| .33| .05    | .2 | 0. | .1 | 0. |     |     |     |     |
| D2    | 1. | 1. | .45| 1.     | 1. | 1. | 1. |    |     |     |     |     |
| *V3   | 0. | 0. | .55| 0.     | 0. | 0. | 0. |    |     |     |     |     |

Importantly, as pointed out by Meisel (2007), this longitudinal study reveals that these children do not go through an initial phase characterised by a consis-
tent target-deviant *V3 order (finite V placement in third position, e. g. Adverb-Subject-Verb). Yet only if this was the case, could one argue that the grammar of WL Swedish does not generate the V2 effect. In reality, all children studied use V2 as soon as contexts requiring it emerge in their speech, e. g. utterances with initialised adverbs. Crucially, the first V2 constructions appear simultaneously with (A) or before (D, M) the incriminated ones (*V3), and they are again attested in later recordings.

The only temporary failure to use V2 speaks strongly against the claim that these children acquired an L2 syntax of Swedish lacking the V2 effect. At any rate, if one was to explain *V3 as reflecting grammars without V2 properties, one would have to argue that WL grammars change repeatedly from +V2 to –V2 to +V2, a phenomenon never observed in L1 acquisition.

Emergence of noncanonical constructions is another criterion that has been suggested as a property distinguishing between divergent acquisition types. Some target-deviant constructions, like the just mentioned *V3 patterns, can possibly be explained as a result of transfer from the bilingual’s other language. Others, however, cannot be accounted for by transfer, e. g. so-called “unusual structures” (Döpke 1998, 2000). They are neither found in the speech of monolinguals of one of the languages, nor in balanced bilinguals, and they are for just this reason good candidates in the search for qualitative differences, as the following example cited by Döpke:

(1) *Hund nicht kommt rein
   dog not comes in
   ‘(the) dog doesn’t come in’

This construction is neither generated by the German nor by the English grammar. It deviates from the German target in that the finite verb follows the negator, *NEG V\textsubscript{fin} instead of German V\textsubscript{fin} NEG. Since the finite verb precedes the particle rein, it has been raised above VP; but it does not precede NEG and has thus not been moved above NEG, as required in German. In English, on the other hand, it would not have moved out of VP at all. Döpke does not offer a syntactic analysis. Yet citing uncommon utterances does not constitute sufficient evidence that WL/HL grammars differ from those of the stronger/majority language. Rather, one must specify properties in which the altered grammars differ from the target ones and show that the unusual sequence is indeed generated by a restructured grammar. At any rate, once again, developmental patterns reveal that the unusual structures do not reflect non-native grammars. They occur simultaneously with target structures, and they appear only temporarily and subsequently to a period during which the target structures are used productively.
The same objection must be raised against another alleged source of non-native properties in WL grammars, namely transfer from the stronger language. Yip and Matthews (2000), reporting on the acquisition of Cantonese and English by a bilingual boy, claim that wh-in situ is transferred from Cantonese to English. Yet the first occurrence of an English wh-utterance is one with the wh-word in initial position, and constructions with clause-initial wh co-occur with wh-in situ during the entire documented period of development. Consequently, the English option cannot have been replaced by the Cantonese one. Note that, as mentioned by the authors, the incriminated pattern also appears in monolingual speech. Thus, the observed pattern of use, with wh-initial constructions chronologically preceding and co-occurring with wh-in situ, suggests that the latter result from co-activation of the Cantonese grammar while processing English. Importantly, if one were to argue that properties of Cantonese syntax are incorporated into the English grammar, one would have to explain how the child could ever get rid of the Cantonese parts. Yip and Matthews (2000: 201) merely affirm that “they were unlearned gradually”. How unlearning works, remains mysterious.

From these observations on error rates, noncanonical constructions and transfer, I conclude that specific developmental patterns are a much more reliable criterion indicating qualitative differences between learner varieties. If both canonical and noncanonical uses are attested in the speech of bilinguals, and if the noncanonical ones emerge simultaneously or after the canonical ones, this cannot count as evidence of grammatical restructuring. Rather, the native option has not been altered, and bilinguals’ oscillation between two construction types should be regarded as a particularity of language use, possibly due to a failure of adequately inhibiting activation of the other language (Meisel 2007).

In sum, studies of bilingual settings in which one language exhibits WL characteristics have not yet provided convincing evidence supporting the hypothesis that WLs might develop as varieties that differ from native ones in core syntactic properties. Thus, although exposure to the PLD is significantly reduced, the degree to which this is typically the case for WLs of simultaneous bilinguals seems not to drop below a critical threshold. Rather, the amount of input still attains the minimum quantity necessary for the development of a native competence. The human LMC clearly is a robust device that makes language acquisition possible, even under unfavourable conditions. Nevertheless, there is, by logical necessity, a limit, a required minimum amount of exposure to the PLD. Unfortunately, we are currently not able to quantify this threshold. It remains to be seen whether relevant insights can be obtained by studying other bilingual settings where access to the PLD of one language is drastically limited.
This is why I do not want to conclude this discussion without having considered the possibility that heritage languages might offer the opportunity to gain the kind of insights required. As it turns out, results of HL research reveal a blurred picture of acquisition processes: The overwhelming majority of published HL studies are based on data that are of limited use when trying to decide whether early bilinguals fail to acquire native competences due to insufficient exposure to one of their languages. Firstly, from an acquisition perspective, the HL speakers studied represent a very heterogeneous group of learners. Secondly, assessments of amount of exposure are not based on first-hand studies of children’s interactions; they rather rely on retrospective self-reports or parental reports. Let me explain these two points of criticism.

Not only HL learners, HLs themselves are heterogeneous objects, for they have been studied from a variety of perspectives: sociolinguistic, educational, linguistic, each discipline applying different defining criteria. Some restrict the term to immigrant languages, others include indigenous languages, for some it is an L1 acquired either before or simultaneously with another language, for others it can also be a second language acquired in childhood. Not surprisingly, Ortega (2019) finds that even experts have difficulty defining the notion “heritage language”. What matters in the present context is that different learner types are subsumed under the label “HL learners”. The one point on which all authors agree is that the HL is the weaker language of bilinguals whose stronger one is the community language.

For our purposes, this lumping together of various types of learners, a common procedure in most HL studies that appeared over the past 15 years, is a serious problem. Recall that simultaneous and successive bilinguals differ in substantial ways if first exposure occurs at age 3-4 or later. Yet in the HL literature, 2L1 learners are habitually grouped together, either with successive bilinguals who grew up monolingually in the HL or with cL2 learners of the HL. The question therefore is whether we may reasonably expect these various types of learners to perform identically in using their HL. Let me remind you that a major goal of this paper is to characterise distinct acquisition types in terms of properties attested in their speech. Not only should members of one type share properties, some of these features must be type-specific, i.e. they should not appear in the speech of other types from which the one under discussion is to be distinguished.

The question thus is: Do HL learners constitute a distinct acquisition type? Concerning HL studies that generalise over heterogeneous groups of learners, the answer can only be negative. They do not i) present a set of linguistic properties uniquely characterising HL speakers while distinguishing them from other learner types; ii) decide whether specific features of HL speech are the result of
incomplete acquisition\(^3\) or of attrition of previously acquired knowledge; iii) determine which factors shape the language of HL speakers.

Ad i): The idea that HLs resemble in some respects L1s and in others L2s is not an insight enhancing our understanding of acquisition, unless it can explain in a principled way which L1 and L2 features can appear in HLs and which ones are excluded. As it stands, this claim covers all logical possibilities and is thus vacuous. Ad ii): The formula used in virtually all HL publications, stating that non-native features of HLs are due to “attrition or incomplete acquisition”, amounts to a renunciation of any attempt at explaining acquisition, for it implies that it is impossible to discover what can and what cannot be acquired by HL learners. Moreover, attrition does not mean that an individual’s grammar lacks a particular feature – it merely cannot be activated, and relearning differs crucially in rate and success from learning. The failure to distinguish between the two phenomena reflects the fact that these studies investigated adults rather than children. Still, at least in cases where exposure to the community language happened at age 5 or later, it should be possible to identify grammatical phenomena in the HL that have been acquired earlier. If HL speakers differ from monolinguals or balanced bilinguals with respect to these, attrition is a more plausible explanation than incomplete acquisition. Ad iii): Failure to distinguish learner types makes it impossible to decide whether HL particularities are due to learners’ AOA or to their reduced exposure to the target PLD. In fact, some researchers are entirely focused on insufficient exposure as a causal factor and do not even provide information on AOA, e.g. Albirini et al. (2011). Unfortunately, they do not specify what “sufficient” exposure means, either.

Fortunately, recent publications adopt a narrower definition of the term “HL”, allowing us to return to the question whether HLs reflect a distinct acquisition type, a claim explicitly supported by Benmamoun et al. (2013a). According to them, an HL is an L1, acquired either simultaneously with another language, or sequentially in early childhood, exposure to the other language occurring no later than at age 5. In spite of being an L1, the HL is said to exhibit L2 as well as L1 properties, i.e. learners develop partially “incomplete” or “divergent” knowledge. The reason why they do not attain a native competence in all grammatical domains of the HL is that the community language ends up being dominant.

---

\(^3\) This term is an unfortunate terminological choice (Meisel 2014). It is mentioned here because it is well established in the HL literature, following Montrul (2008). Importantly, it is not intended to qualify grammars as a whole; it rather expresses the idea that specific aspects of grammars of input varieties can be lacking in HL grammars, temporarily or permanently; cf. Silva-Corvalán (2018).
In sum, according to the narrower definition, HL speakers are bilinguals who acquire the HL from birth and the other one simultaneously or successively, but no later than at age 5. But how, then, do HL learners differ from simultaneous bilinguals who develop two native competences? The surprising answer is: they don’t. In fact, Benmamoun et al. (2013b: 264) state that 2L1 children are “simply high proficiency heritage speakers”. This is tantamount to admitting that HL learners do not represent a distinct type, contrary to what these authors claim. They simply swap labels, postulating that 2L1 and HL learners are of the same kind, both subsumed under the HL label. The only differentiating criterion is that “the vast majority of heritage speakers do not show full acquisition of the heritage language” – although Benmamoun et al. (2013b: 264) explicitly state on the same page “that ultimate attainment of the heritage language is not relevant to the definition of an individual as a heritage speaker”.

I will not try to solve what is, in my understanding, a contradiction, nor will I be concerned with terminological issues. I object, however, to the idea that all bilinguals who speak a family language that is not the community language should be considered to be HL speakers. This would oblige us to regard virtually all bilinguals as HL speakers, for even bilingual societies do not consistently offer balanced bilingual domains in all situations of everyday life. What the suggestion by Benmamoun et al. (2013b) boils down to is that the crucial distinction is the one between high and low proficiency, and many or most HL learners are claimed to be low proficiency bilinguals. This means that they exhibit the same acquisition profile as unbalanced 2L1 learners who develop the family language as a WL. In other words, from a developmental perspective, research on HL acquisition addresses largely the same issues as those studying WL development. We are thus back at the claim that weaker languages differ from strong ones in core syntactic properties, although their speakers were exposed to both languages from birth. The particularity of HL learners is that exposure to the HL is said to have been significantly reduced, and this is argued to be the main causal factor resulting in such differences. Recall that the discussion of WL studies concluded that this hypothesis is plausible but that sufficient evidence supporting it has not yet been provided. The question then is whether HL research will be able to shed light on this issue. I will return to this issue in Section 5.

One problem on which recent HL research has made significant progress concerns the identification of grammatical features in which HLs conform to or deviate from their respective baselines; cf. Benmamoun et al. (2013a), Polinsky (2018) or Polinsky and Scontras (2020) for pertinent summaries. The list of phenomena in which language use by HL speakers differs from the baselines is impressive, yet it is difficult if not impossible to decide which ones, if any, qualify as telltale criteria identifying HL-particular varieties. One problem is precisely the wide range of
phenomena identified by HL studies. It is not possible to highlight a set of features that appear in the speech of all learners, thus characterising HL unambiguously as distinct acquisition type. Nor is the reverse feasible, identifying features attested only in HL speech, not in other acquisition types.

What does emerge is that noncanonical constructions occur frequently, many resembling L2 uses. However, as the discussion of WLs has shown, frequency of noncanonical uses does not reliably indicate grammatical change, unless these constructions are used categorically. Still, we now do have a better idea about which features characterise HL grammars, for investigations are not limited, any more, to a search of noncanonical uses; they also study domains that are resilient to change, analyzing comprehension as well as production; cf. Polinsky (2018). According to the research summaries offered by Polinsky and Scontras (2020), many aspects of phonetics, phonology and syntax are particularly resilient. Inflectional morphology, on the other hand, is more vulnerable, nominal morphology more so than verbal morphology. They conclude that core properties of syntax are mostly unaffected; changes rather happen at interfaces between grammatical modules and especially at the syntax-discourse/pragmatics interface. This is a crucial point in the present context where the focus is on the conditions under which divergent developments are likely to happen, with a particular interest in triggers of changes in core syntax. However, although syntactic core properties belong to the most resilient grammatical domains, as expected, HL research suggests that they too can be affected, resulting in representational differences. Polinsky and Scontras (2020), for example, hypothesise that in HLs the available hierarchical structure is reduced. If this holds up, we are definitely looking at instances of divergent attainment – a finding that goes beyond what WL research showed.

Note, however, that we still do not understand the nature of divergent grammars. Much like other researchers before, Polinsky (2018: 25) concludes that HL speakers share properties with L2 speakers, but she insists that they are much closer to L1 speakers. In other words, HLs are not second languages, as insinuated by Rothman (2009). Still, characterising HL as an L1 containing (non-native?) L2 features is unsatisfactory, unless one can offer a principled account of the kind of L2 properties that can be part of an L1 grammar. Note further that we still do not know whether or when divergence is the result of incomplete acquisition or of attrition. Nor do we understand why or when core properties of syntax that are particularly resistant to alterations do change, after all.

This brings me finally to the second point of criticism mentioned earlier: although recent HL studies define HL speakers more narrowly, the large majority of them do not analyse interactions by children. Yet we may only hope to find answers to questions on the nature of divergent grammars if linguistic development
of HL learners is investigated in longitudinal or cross-sectional analyses of quantified data, preferably collected in ongoing acquisition processes. Self-reports on within-family language distribution in HL speakers’ long past childhood will not do. Nor do self-ratings of proficiency or of language dominance provide the necessary data. In other words, studies on HL acquisition must meet the same methodological standards as first and second language acquisition research. So far, no more than a handful of the published HL studies meet this requirement, e.g. Silva-Corvalán (2018).

5 Causal factors of divergence

Before concluding, I want to address the role of causal factors, thus returning to the question of what qualitative differences reveal about the relevance of possible causes of divergent developments. Let me begin by stating the obvious, namely that no monocausal explanation can possibly be adequate. The three factors considered here, language contact, age at first exposure to a language, and quantity of exposure to a language, should be expected to interact. And other factors, not discussed here, will certainly also play a role.

The first and in my opinion crucial finding is that multilingualism is by itself not a factor that pushes the LMC to its limits. This claim is based on the observation that L1 and 2L1 do not differ substantially in the grammatical knowledge that learners acquire. This is not to say that bilingual acquisition will always succeed. Rather, it can and frequently does work. And it is precisely this insight that enables us to detect causes of failure when it doesn’t work.

The probably most influential factor is the age at which learners are first exposed to a language. The strongest support for this claim comes from the finding that monolingual and bilingual first language acquisition differ in substantive grammatical properties from child and adult second language acquisition. Early AOA is a necessary condition for the development of a native competence, though it is not a sufficient one. Put differently, exposure to two languages at an early AOA, i.e. the combination of two factors, makes bilingual development possible – provided learners have access to adequate input.

Input is thus another crucial factor, i.e. adequate exposure to primary linguistic data during periods of heightened sensitivity. What kind of exposure can count as adequate, is, however, a question to which no satisfactory answer has as yet been given. This is the issue to which HL research can make a significant contribution, since HL speakers have been defined as early bilinguals whose exposure to the HL is not sufficient for the development of a full native competence.
Currently, however, these studies do not offer an even approximate estimate of the threshold that needs to be attained for exposure to qualify as sufficient. We do know that the LMC is a robust device that succeeds even in less than optimal settings. In fact, the few studies that do shed some light on this issue, including Silva-Corvalán (2018), suggest that exposure to 25–30% of children’s daily interactions may suffice to acquire an at least near-native competence; see Meisel (2019: 175–177). But hours spent with speakers of a language do not represent reliable information about quantity of exposure. Caretakers vary enormously in the amount of speech they produce in interactions with children. Moreover, linguistic data only qualify as input to the LAD if they are presented in child-directed speech. Finally, relevant cues for particular acquisition tasks must be available at points of development when the device is ready to process them. Consequently, reduced input affects acquisition differently, depending on the grammatical phenomenon and on when in the course of development reduction of exposure occurs. We are thus dealing with a three-dimensional variation space, defined by the developmental schedule, particular grammatical features, and quantity and quality of input.

6 Conclusions

In this article, I have surveyed various settings where bilinguals have been claimed not to have succeeded in acquiring a full native competence in one of their languages. Our task is to identify properties that are specific to a given learner variety, but we must also identify the ones that various varieties share. This allows us to decide whether the varieties in question are manifestations of identical or at least similar kinds of linguistic knowledge or whether they are starting points of divergent developments. In the latter case, we must furthermore determine the causal factors that prevent learners from attaining native knowledge in a language.

As for linguistic properties in which varieties differ, we must take into account that some aspects of language are more vulnerable than others. The foregoing discussion focused on the ones that are most resilient, especially those pertaining to the syntactic core. The guiding idea is to test the limits of the language acquisition capacity by determining the minimal conditions that must be met for learners to be able to develop full native competences. In scrutinising the available empirical evidence, we must keep in mind that language use is more easily affected by cross-linguistic interaction or other factors possibly interfering with developmental processes than the underlying grammatical knowledge. Consequently, not every instance of variation in use may be interpreted as an indication of knowledge
differences. This is why calculating error frequencies does not provide pertinent insights, unless quantitative results are interpreted in the context of specific developmental patterns. The same objection applies to listings of so-called “unusual” or “noncanonical” constructions.

As for possible causes of alterations of grammatical knowledge, bilingual settings are indeed instances of enhanced diversity. Does this mean that bilingualism is a prime source of divergent developments, resulting in distinct linguistic varieties that differ from the baseline varieties in some aspects of the underlying grammars, perhaps even in core properties? Not necessarily. The study of bilingual acquisition has demonstrated beyond reasonable doubt that children, exposed to two or more languages from birth or from early on, are able to acquire multiple first languages without apparent difficulties. Thus, sufficient exposure to both languages at an early age is a prerequisite for successful bilingual development. In other words, early AOA and adequate input are decisive factors. Research on early linguistic development suggests that the first three or four years of life can count as “early” exposure. Concerning the question of what may count as “sufficient” exposure, the available empirical evidence only allows for tentative answers. The jury is still out.

References

Albirini, Abdulkafi, Elabbas Benmamoun & Eman Saadah. 2011. Grammatical features of Egyptian and Palestinian Arabic heritage speakers’ oral production. *Studies in Second Language Acquisition* 33(2). 273–303.

Benmamoun, Elabbas, Silvina Montrul & Maria Polinsky. 2013a. Heritage languages and their speakers: Opportunities and challenges for linguistics. *Theoretical Linguistics* 39(3–4). 129–181.

Benmamoun, Elabbas, Silvina Montrul & Maria Polinsky. 2013b. Defining an ‘ideal’ heritage speaker: Theoretical and methodological challenges: Reply to peer commentaries. *Theoretical Linguistics* 39(3–4). 259–294.

Brown, Roger. 1973. *A first language: The early stages*. Cambridge, MA: Harvard UP.

Chomsky, Noam. 1981. *Lectures on government and binding*. Dordrecht: Foris.

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

Crain, Stephen. 2010. What are core linguistic properties? In Wayne Christensen, Elizabeth Schier & John Sutton (eds.), *ASCS09: Proceedings of the 9th Conference of the Australasian Society for Cognitive Science*, 67–71. Sydney: Macquarie Centre for Cognitive Science.

Culicover, Peter W. 2013. *Grammar and complexity: Language at the intersection of competence and performance*. Oxford: Oxford University Press.

Dąbrowska, Ewa. 2012. Different speakers, different grammars: Individual differences in native language attainment. *Linguistic Approaches to Bilingualism* 2(3). 219–253.

De Houwer, Annick 2009. *Bilingual first language acquisition*. Bristol: Multilingual Matters.
Döpke, Susanne. 1998. Competing language structures: The acquisition of verb placement by bilingual German-English children. *Journal of Child Language* 25(3). 555–584.

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

Flores, Cristina & Esther Rinke. 2020 The relevance of language-internal variation in predicting heritage language grammars. *Bilingualism: Language and Cognition* 23(1). 25–26.

Kupisch, Tanja & Jason Rothman. 2018. Terminology matters! Why difference is not incompleteness and how early child bilinguals are heritage speakers. *International Journal of Bilingualism* 22(5). 564–582.

Leopold, Werner F. 1939, 1947, 1949. *Speech development of a bilingual child: A linguist’s record*. Vols. 1–4. Evanston, IL: Northwestern University Press. [Reprint: New York: AMS Press, 1970].

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

Meisel, Jürgen M. 2007. The weaker language in early child bilingualism: Acquiring a first language as a second language? *Applied Psycholinguistics* 28(3). 495–514.

Meisel, Jürgen M. 2009. Second language acquisition in early childhood. *Zeitschrift für Sprachwissenschaft* 28(1). 5–34.

Meisel, Jürgen M. 2011a. Bilingual language acquisition and theories of diachronic change: Bilingualism as cause and effect of grammatical change. *Bilingualism: Language and Cognition* 14(2). 121–145.

Meisel, Jürgen M. 2011b. *First and second language acquisition: Parallels and differences*. Cambridge: Cambridge University Press.

Meisel, Jürgen M. 2014. Heritage language learners: Incomplete acquisition of grammar in early childhood. In Andrés Enrique-Arias, Manuel J. Gutiérrez, Alazne Landa & Francisco Ocampo (eds.), *Perspectives in the study of Spanish language variation*, 429–454. Santiago de Compostela: Universidade de Santiago de Compostela.

Meisel, Jürgen M. 2019. *Bilingual children: A guide for parents*. Cambridge: Cambridge University Press.

Meisel, Jürgen M., Martin Elsig & Esther Rinke. 2013. *Language acquisition and change: A morphosyntactic perspective*. Edinburgh: Edinburgh University Press.

Montrul, Silvina. 2008, *Incomplete acquisition in bilingualism*. Amsterdam: Benjamins.

Ortega, Lourdes. 2019. The study of heritage language development from a bilingualism and social justice perspective. *Language Learning* 70(S1). 1–39.

Pavlovitch, Milivoïe. 1920. *Le langage enfantin: Acquisition du Serbe et du Français par un enfant serbe*. Paris: Librairie Ancienne H. Champion.

Pienemann, Manfred. 1998. *Language processing and second language development: Processability theory*. Amsterdam: Benjamins.

Polinsky, Maria. 2018. *Heritage languages and their speakers*. Cambridge: Cambridge University Press.

Polinsky, Maria & Gregory Scontras. 2020. Understanding heritage languages. *Bilingualism: Language and Cognition* 23(1). 4–20.

Ronjat, Jules. 1913. *Le développement du langage observé chez un enfant bilingue*. Paris: Librairie Ancienne H. Champion.
Rothman, Jason. 2009. Understanding the nature and outcomes of early bilingualism: Romance languages as heritage languages. *International Journal of Bilingualism* 13(2). 155–163.

Sankoff, Gillian. 2005. Cross-sectional and longitudinal studies in sociolinguistics. In Ulrich Ammon, Norbert Dittmar, Klaus J. Mattheier & Peter Trudgill (eds.), *An international handbook of the science of language and society*, 1003–1013. Berlin & New York: Mouton de Gruyter.

Sankoff, Gillian. 2019. Language change across the lifespan: Three trajectory types. *Language* 95(2). 197–229.

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

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

Silva-Corvalán, Carmen. 2018. Bilingual acquisition: Difference or incompleteness? In Naomi L. Shin & Daniel Erker (eds.), *Questioning theoretical primitives in linguistic inquiry*, 245–268. Amsterdam: Benjamins.

Thomason, Sarah. 2001. *Language contact*. Edinburgh: Edinburgh University Press.

Thomason, Sarah & Terrence Kaufman. 1988. *Language contact, creolization and genetic linguistics*. Berkeley, CA: University of California Press.

Tsimpli, Ianthi. 2014. Early, late or very late? Timing acquisition and bilingualism. *Linguistic Approaches to Bilingualism* 4(3). 283–313.

Yip, Virginia & Stephen Matthews. 2000. Syntactic transfer in a Cantonese-English bilingual child. *Bilingualism: Language and Cognition* 3(3). 193–208.