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Bilingual acquisition as the locus of syntactic change

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Abstract: Some grammatical phenomena are more resistant to diachronic change than others. The syntactic core is particularly resilient, raising the question why this is the case and what causes the least vulnerable properties to change. Since fundamental alterations of grammars do not occur across the lifespan of adults, first language acquisition is commonly considered to be the main locus of syntactic change. Under the assumption that language contact leads to cross-linguistic interaction, early bilinguals have been claimed to be the main agents of change. I revisit this debate, focusing on head directionality and V2. Summaries of studies of various acquisition types lead to the conclusion that reanalysis in core syntax does not happen in the course of neither monolingual nor bilingual L1 acquisition. Contrary to hypotheses entertained in diachronic linguistics, neither language contact nor structural ambiguity/complexity has this effect. For core properties to change in L1, the triggering information must be contained in the input. Insufficient exposure, as in heritage language acquisition, can cause morphosyntactic change, though not in the syntactic core. Only second language acquisition exhibits such effects. L2 learners are thus the most likely agents of fundamental syntactic change. I conclude that explanations of the resilience of syntactic phenomena cannot rely exclusively on structural aspects. It results from an interaction of syntactic and developmental factors, defined by grammatical constraint, acquisition principles, and processing demands.

Keywords: diachronic change; core syntax; language acquisition; child bilingualism

1 Introduction

Languages change over time, and grammars change too. This is not news, yet the mechanisms of change are less well understood than we would hope. An adequate theory of change must account not only for the properties of a given variety but also for their immutability or vulnerability to variation and change. Syntax is

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acknowledged as a domain where change does not happen easily; cf. Longobardi's inertial theory (2001). Still, some properties are more resilient than others.[1]

The question I address here is: When syntactic properties are particularly resistant, what causes them nonetheless to change? My focus is on grammatical phenomena I consider to be part of the syntactic core, primarily OV/VO order and V2 (verb-second placement). This terminological choice calls for a justification since the *core-periphery* distinction, proposed by Chomsky (1986), is an object of controversy (Culicover 2013). The notion of syntactic core that I adopt covers a set of properties that are constitutive of grammatical systems and that play a crucial role in emergent grammars. They are essential for the definition of grammatical parameters (Chomsky 1981, 1986) and provide criteria for a typology of languages. Perhaps more importantly, they are the first syntactic properties to emerge in first language (L1) acquisition. Indeed, Tsimpli (2014) argues that they are acquired early *because* they are syntactic core properties. It should not come as a surprise that phenomena with these characteristics are particularly resistant to reanalysis. Parameter Theory distinguishes between macro- and microparameters, and core properties reflect macroparametric options.[2] These are claimed to "have highly pervasive effects on the grammatical system" and to be "unlikely to be subject to reanalysis by language acquirers … " (Biberauer and Roberts 2017: 149).

In what follows, I briefly explain the role attributed to language acquisition in diachronic change. I then summarize results of empirical acquisition studies that can corroborate or undermine these scenarios. I finally propose grammatical and acquisitional prerequisites for a plausible scenario of diachronic change affecting syntactic core properties.

2 The language learner as the locus of syntactic change

There exists broad consensus among researchers in historical linguistics, particularly among those adopting a generative framework, that the language-learning child is the main agent of change. This hypothesis is based on the fact that major alterations of grammars do not happen across the lifespan of adults. To the extent that mature grammars are at all affected by change, this concerns peripheral rather than

1 I am grateful to Susanne E. Carroll for helpful comments, and I thank three anonymous reviewers for constructive criticism.

2 According to a threefold categorization, they are classified as mesoparametric; cf. (Biberauer and Roberts 2017). What matters is that mesoparameters are claimed to be less system-defining but still pervasive in their effects on grammars and, therefore, conserved diachronically.

core properties; cf. Sankoff (2005, 2019). Designating language learners as the locus of change is a venerable idea in historical linguistics. Paul (1975 [1880]) argued that first language acquisition plays a crucial role in language change, and Andersen (1973) implemented this idea in a model of diachronic change – an inevitable conclusion in cognitively oriented linguistic theorizing where the object of study is the mental grammar of the individual rather than the collective knowledge of the speech community. Consequently, the individual must be the locus of change, and if alterations of fundamental grammatical properties never occur in mature grammars, these changes must happen in the process of acquisition when learners reconstruct the grammars underlying the primary linguistic data (PLD) to which they are exposed.

Shifting the task of explaining grammatical change from historical linguistics to the study of acquisition is not without consequences for the latter, for the idea of *transmission failure* imposes a task on acquisition theory that stands in conflict with its genuine research interest, namely, to explain what enables children to reconstruct the mental grammars of their parents' generation. Transmission failure implies that learners diverge from the grammar of the previous generation in their interpretations of constructions encountered in their linguistic environment. This assumption contradicts the hypothesis that adequate exposure from birth is all it takes for children to become fully competent speakers of a language and that uniformity of development and ultimate success are defining characteristics of L1 acquisition. This hypothesis is strongly supported by empirical findings, and reports on acquisition failure are extremely rare in the L1 literature; cf. Meisel (2011b). Language use of learners does, of course, temporarily differ from adult speech, but the systems ultimately converge, and this happens very early and fast for core syntax.

One way out of this paradoxical situation is to search for elements in the input data that might trigger an analysis diverging from that of the parents' generation. Lightfoot (2006, 2017) suggested that *variation* in the PLD could have this effect. A frequently defended hypothesis assumes, on the other hand, that only *language* or *dialect contact* can produce such an effect. Note that in these cases, learners perform correct analyses, relying, however, on "wrong" cues.

Alternatively, it has been proposed that transmission failure occurs if the information that is necessary for learners to reconstruct the previous generation's mental grammars is difficult to detect or partly inaccessible in the PLD. This is an approach taken in historical linguistics over past decades: various learner-external as well as -internal factors have been suggested that allegedly trigger reanalyses of grammatical properties in intergenerational transmission, most importantly *structural ambiguity*. The idea is that the PLD contain ambiguous information, obliging children to decide between grammatical analyses because a particular construction

can be assigned more than one grammatical interpretation. This choice between competing analyses is argued to be decided by the construction's *frequency of occurrence* or by its *structural complexity*.

These are potentially crucial factors for explanations of core syntactic changes. Unfortunately, these scenarios refer only cursorily or not at all to insights obtained by L1 research. They rely on grammatical arguments alone in their attempts to identify conditions favoring novel analyses. Yet in order to make a convincing case for transmission failure, morphosyntactic *and* acquisitional facts need to be taken into account; see Meisel (2011a) or Rinke and Meisel (2009). In what follows, I will point out shortcomings of scenarios that rely exclusively on syntactic arguments, using the change from V2 to non-V2 as an illustration.

The *ambiguity* argument refers to the fact that V2 as well as non-V2 grammars generate SVO surface order in main clauses although subject and finite verb occupy distinct structural positions in the two grammar types, CP (V2) or TP (non-V2). Only if a constituent other than the subject appears initially, does this underlying difference become apparent in surface word order: in V2 languages, the subject then follows the finite verb (XVSO), yet it precedes the verb in non-V2 languages (XSVO). A first observation casting doubts on the ambiguity argument is that there exists no empirical evidence from L1 research indicating that surface ambiguity of SVO sequences trigger reanalysis. To the contrary, it has been demonstrated again and again that children learning a V2 language like German acquire the V2 option during the earliest phase of syntax development, fast and virtually without errors, with no sign of confusion; cf. Clahsen (1982) and more recently Westergaard (2008) or Tsimpli (2014).

This is where the *frequency* argument kicks in. Adams (1988), for example, who analyses OF (Old French) as a V2 language, attempts to explain the transition to non-V2 in Modern French due to an increase in the number of SVO patterns in children's input during the Middle French period. Thus, the high frequency of SVO surface strings putatively reduces the number of telltale signs for the underlying V2 grammar. Yet again, insights from L1 research do not support the claim that increasing numbers of ambiguous patterns trigger reanalysis, as long as the number of unambiguous ones does not drop below a critical threshold; cf. Kiparsky (1997: 464). In fact, Westergaard (2008) has shown that even children acquiring a mixed V2/non-V2 system acquire both orders early, irrespective of very different input frequencies.

An alternative approach combines structural ambiguity and *complexity*, suggesting that the less complex among competing analyses wins out over the more complex one in the course of acquisition. Roberts (1993), for example, claims that reanalysis of French as a non-V2 language is due to the fact that verb movement to T° is more economical than movement to C° and is, therefore, preferred, for children

adopt a "Least Effort Strategy" (LES). LES is considered a principle of acquisition, but it depends on a notion of economy defined in strictly grammatical terms (Economy of Derivation). According to a more recent version (Roberts 2007: 233), learners prefer more economical representations, defining economy in terms of the number of formal features of functional heads (Feature Economy, FE).

Nevertheless, from an acquisition perspective, this is not a satisfactory solution either, for difficulty of learning must be explained in terms of principles operative in learning processes. Whether featural or derivational economy translates into learning or processing complexity is, of course, an empirical question. It is not an implausible hypothesis, but one that still lacks psycholinguistic support. Similar qualms arise concerning the LES, for it is not obvious that this is indeed an acquisition strategy applied in other domains, rather than an *ad hoc* solution for this particular problem. Again, the necessary psycholinguistic evidence is lacking. Moreover, empirical and theoretical considerations raise doubts about this approach. Firstly, it is a mystery what could ever entice language learners to opt for a less economical option if a more economical one is available. Yet children acquiring Germanic V2 languages succeed in doing so without apparent effort, producing XVS sequences as soon as they use multi-word utterances. This is even more remarkable if we consider that speech directed to very young children seems to consist primarily of main clauses, exposing learners of V2 languages mostly to SVO strings. Secondly, as pointed out by Hale (1998), in order to assign the simplest parse to an input string, learners need to posit a numeration, determine that this numeration can converge at LF, and posit the appropriate features on the functional heads, allowing convergence at PF. This, however, is not a licit procedure since "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: 14). In fact, such a procedure is not only excluded on theoretical grounds (Lightfoot 2017: 517, among others), known language processing mechanisms may not enable children to compare and evaluate derivations either; cf. Jacobson (1998).

To avoid misunderstandings, my conclusion is not that syntactic core properties in general or the V2 constraint in particular never change. If this were the case, we should not find variation across languages in this respect, as we actually do. The claim is that change of syntactic core properties happens rarely and not in intergenerational L1 transmission triggered by structural ambiguity under the above-mentioned conditions of decreasing frequency of telltale constructions and/or economy of the reanalyzed option. One question that remains to be addressed is whether L1 learners develop grammatical knowledge different from that of their parents' generation if at least part of the PLD contain structures that might trigger alternative analyses, as in dialect or language contact settings. Language contact has

indeed been claimed to be a likely condition for this to happen, and I will address this issue in Section 3.

3 Searching for structural reanalysis in bilingual acquisition

The principal idea pursued here is that the plausibility of any scenario of grammatical change must be assessed based on what is known about principles and mechanisms of language acquisition. Considering how widely held the view is that grammatical change happens during L1 acquisition, it is surprising that arguments in its favor are based almost exclusively on grammatical considerations or presumed acquisition mechanisms. In fact, the question whether empirical studies of child language support the idea of acquisition failure in cases of structural ambiguity, low input frequency, etc., does not meet with much interest in historical linguistics. But the cognitive mechanisms operative in acquisition are the same today as thousands of years ago. Consequently, what happens in acquisition today might have happened in past centuries, and what is impossible today was impossible then. I will, therefore, examine some results from acquisition research that shed light on the role of language learners as agents of grammatical change, focusing on findings obtained by studies of various types of bilingual acquisition.

3.1 The role of language contact in diachronic change

In Section 2, I argued that insights from L1 research do not support the hypothesis according to which structural ambiguity is a crucial factor triggering reanalysis of I-languages during acquisition, not even if structural complexity or decreasing exposure to the PLD is taken into account. Nevertheless, frequency of exposure cannot be ruled out as a causal factor of reanalysis, provided it refers to the accessibility of cues triggering implementation of structural properties in developing grammars, rather than to the number of occurrences of allegedly ambiguous structures in the PLD. I will return to this issue in Section 3.2, but first I will discuss the role of language (or dialect) contact, frequently claimed to be a prime cause of diachronic change; cf. Thomason and Kaufman (1988).

Although language contact is possibly a relevant factor in diachronic change, broad-ranging claims suggesting that any linguistic feature can be transferred from any language to any other (Thomason and Kaufman 1988) are unenlightening. They conceal the fact that multilingual settings do not necessarily result in cross-linguistic

interaction. Agents of change, triggering factors, and vulnerable parts of grammar need to be identified. Most importantly, one must demonstrate that observed changes are indeed caused by language contact. Biberauer and Roberts (2017: 150) argued that the loss of the null-subject property in the Northwestern Romance languages is an effect of contact with Germanic languages, an idea first proposed by Diez (1882) and Thurneysen (1892). However, the Germanic influence on Old Romance languages is far from being a well-established fact; cf. Rinke and Meisel (2009). Rather, at least as far as word order is concerned, such influence is unlikely. Elsig (2009) studied 13th century charters from a region where Germanic settlers supposedly exerted massive influence on the Old French-speaking population during the second half of the first millennium. His analysis led to the expected conclusion that Middle High German was a V2 language, but it also showed that 13th century OF was a null-subject but not a V2 language. Thus, despite extensive language contact, no Germanic influence could be detected. The crucial point is that proponents of the contact-hypothesis must develop a scenario where children can plausibly be assumed to be agents of change. Referring to societal but not to individual bilingualism does not suffice.

These considerations inevitably direct our attention to simultaneous bilinguals (2L1) who appear to be prime candidates when it comes to identifying populations likely to exhibit effects of contact-induced change. The idea is that functionally equivalent but structurally distinct constructions in bilinguals' languages invite cross-linguistic interaction by which properties of grammar A are incorporated into grammar B. Yet whereas cross-linguistic interaction affects language use of simultaneous bilinguals, transfer of grammatical knowledge is a negligible phenomenon; see Meisel (2007b). Simultaneous bilinguals typically attain competences that do not differ qualitatively from those of monolinguals; cf. Meisel 2017. They differentiate languages from early on and are able to keep them apart during later developmental phases. Importantly, syntactic core properties like head-complement directionality emerge very early in both languages, i.e., when the mean length of utterances (MLU) attains values of 1.75–2.0. In other words, these developments are attested as soon as production data allow for the study of syntax. It is thus a *terminus post quem non*, for comprehension studies might reveal that this knowledge is attained earlier.

Although these findings were obtained by studies investigating mostly Indo-European languages, analyses of language pairs that included non-Indo-European languages arrive at identical conclusions. Barreña and Almgren (2013) investigated the acquisition of OV and VO order in Basque and Spanish. Basque is an SOV language with variable surface order; both SOV and SVO occur in colloquial speech. Spanish, on the other hand, is an SVO language exhibiting mostly VO order, although OV is possible when a focused object is placed preverbally. This study analyzed longitudinal (age 1,6–3;0) as well as cross-sectional data. The longitudinal corpus comprises

recordings of one Basque and one Spanish monolingual, as well as of one simultaneous Basque–Spanish bilingual. The cross-sectional corpus contains speech samples of 49 successive bilinguals recorded at ages 5 and 8. For 30 of them, Spanish is the family language (Sfl); first exposure to Basque happened before age 3;0 in immersion programs. The other 19 children were raised in Basque families (Bfl) and attended Basque preschool and school; in primary school, they were taught Spanish, and although they live in a Basque-dominant environment, additional exposure to this language is provided by the media and in occasional everyday interactions.

The longitudinal data revealed that the 2L1 child's use of OV and VO did not differ in either language from that of the respective monolingual. Almost identical results were obtained for the use of Spanish by successive bilinguals. Although three Bfl children used more OV at age 5, group comparisons show no significant differences, neither between groups nor between recordings at ages 5 and 8. In Basque, on the other hand, the use of OV does differ significantly between the two groups at age 5, Bfl children using OV more frequently than Sfl children. However, the difference had disappeared at age 8, and the Sfl children used OV significantly more often than at age 5.

Studies like this one demonstrate that bilingual settings do not necessarily trigger contact-induced effects on grammatical development. Not only do 2L1 children behave like monolinguals in both languages, early successive bilinguals do not show grammatical transfer effects either. Where differences do appear, they concern the frequency of use of OV/VO by some children at age 5. They overuse an order that is allowed in Basque, possibly adopting temporarily a strategy favoring the use of a surface pattern common to both languages. At age 8, this effect has disappeared. Thus, no trace of grammatical reanalysis was found.

My conclusion is that language contact, by itself, is not a sufficient cause of cross-linguistic interaction affecting grammatical knowledge, contrary to what is frequently assumed in historical linguistics.

3.2 Effects of reduced exposure to the target languages

Although research on early bilinguals has demonstrated beyond reasonable doubt that simultaneous and early successive bilinguals typically develop native competences in both languages, this is not to say that less successful cases cannot exist. Even if language contact is not sufficient as a trigger of change in the syntactic core, additional factors might have this effect, for example, if exposure to one of the languages of bilinguals is significantly reduced. After all, we have seen that reduced frequency of exposure can result in alterations of language use. This raises the question whether structural reanalysis happens if the prerequisites for the

development of native competences are not met: early age of onset of acquisition, ideally from birth, and sufficient exposure to PLD. Let me add that acquisition research has not yet succeeded in quantifying the lower threshold for acquisition to be successful; cf. Meisel (2019: Ch. 6.2). Thus, the only way to proceed is to examine cases of decreasing exposure to the target PLD in order to arrive at an approximative definition of sufficient exposure.

3.2.1 The weaker language

One scenario of possibly partial success in grammar acquisition involves cases where one of the languages of bilinguals develops more slowly or differs in structural characteristics from the language in monolinguals or balanced bilinguals. The question is whether these differences reflect alterations of the attained grammatical knowledge in the *weaker* language (WL).

Schlyter (1993) and Schlyter and Håkansson (1994) led the way by drawing attention to WL development. Schlyter (1993) reported that Swedish–French bilingual children sometimes fail to place finite verbs in second position in WL Swedish. Schlyter and Håkansson (1994), therefore, argued that these bilinguals resemble child second language learners in that they use more target deviant *V3 patterns than monolinguals or balanced bilinguals. Note, however, that V2 emerged at the same point of development (in terms of MLU) as in monolinguals. Moreover, V2 constructions were used in the WL from early on and predominantly in almost all recordings. Thus, WL children had not failed to acquire V2 placement; rather, the higher frequency of use of *V3 arguably reflects a failure to inhibit the stronger language, as required in bilingual processing; see Meisel (2007a).

In other words, acquiring a language as the weaker one does not represent a case of change in the attained grammatical knowledge. I, therefore, refrain from a detailed discussion of WL research and turn immediately to findings concerning possible reanalysis in heritage languages.

3.2.2 Heritage languages

Heritage language learners are defined in current research as bilinguals who acquired the heritage language (HL) from birth, typically as a family language, and the community language simultaneously or successively, but no later than at age of onset (AO) 5. Crucially, the HL develops as the weaker language and the community language as the stronger one; cf. Polinsky (2018). HL learners are thus unbalanced bilinguals whose L1 ends up as a WL due to a significantly reduced amount of exposure as the community language becomes dominant. This brings us back to the question of whether WL grammars provide evidence for structural reanalysis of core

syntactic properties, and, if this is the case, whether it can be shown to be due to reduced exposure.

Polinsky and Scontras (2020) present a summary of research on comprehension and production of HLs. They show that numerous grammatical phenomena are resilient to alteration. Morphology, though, counts among the more vulnerable areas, particularly encodings of dependency relations across structural distance, e.g., agreement or case marking. Syntax, on the other hand, is considerably more resilient. The syntactic properties in which HLs are most likely to differ from baseline languages are interface phenomena, either at the syntax-discourse/pragmatics interface or between grammatical modules.

As an explanation of HL – baseline differences, Polinsky and Scontras (2020: 23ff.) suggest that HL speakers seek to reduce processing costs, a hypothesis that is plausible and in line with earlier findings; see also Montrul (2023: 74). Recall that *V3 patterns in WL Swedish of French–Swedish children probably result from a failure to inhibit the stronger language. High frequency of SVO use in Basque by Spanish-dominant successive bilinguals too can be argued to indicate an attempt to reduce processing load, for using primarily a word order common to both languages can serve this purpose. Moreover, psycholinguistic research suggests that SVO chains are easier to parse than SOV sequences (cf. Weyerts et al. 2002); preference for SVO might thus reflect efforts to reduce processing demands.

What is less plausible, however, is the claim that reduced processing results in grammatical reanalysis, e.g., in shrinking of hierarchical structures. This is problematic in a number of ways. Firstly, a majority of studies report that divergent constructions appear in HL speech alongside those conforming to the baseline language, and comprehension is frequently less problematic than production, even in areas of grammar that are particularly difficult for HL speakers, like case marking; see Polinsky (2018: 197). This can only mean that we are looking at instances of divergent language use again. Prime candidates as potential cases of grammatical reanalysis are divergent constructions that are either used categorically or preferred strongly in comprehension, like quantifier scope interpretation in English or differential object marking in heritage Spanish; cf. Polinsky (2018: 69, 165). And yet, secondly, even in these cases, the question remains whether a performance strategy aiming at reduced processing costs can alter mentally represented grammatical knowledge. The short answer is, it cannot, as a glance at language processing shows. Sentence parsing or formulation does not require computation of the full set of syntactic algorithms. Rather, under online time pressure, language users resort to heuristic strategies but can rely on grammatical knowledge whenever necessary. Thus, this knowledge does not decay, even if individuals strongly prefer processing procedures involving structure *shrinking* or shallow processing (Polinsky 2018: 289–290). At most, continued avoidance can lead to difficulty in accessing peripheral

grammatical phenomena, as in language attrition; see below. This brings me to the third and most important point, the developmental schedule of emerging grammars. Recall that HLs are acquired from birth and that decreasing exposure to the HL does not happen until later, between ages 3 and 5 or later. Consequently, alleged changes of grammatical knowledge are instances of attrition if they happen early in (2)L1 acquisition, and they can only be cases of divergent acquisition if they are normally acquired late. Vulnerability must thus be defined in developmental as well as structural terms. Agreement phenomena that are acquired relatively late, like gender marking, can, therefore, be expected to be objects of divergent acquisition, cf. Polinsky (2018: 204–205), whereas syntactic core properties like finiteness, V2 or OV/VO, are acquired early and are unlikely to be affected by input deteriorations, whether in quantity or in quality.

As a preliminary conclusion: changes in the syntactic core, if they do happen in HLs, result from attrition. Unfortunately, however, we are not yet closer to an understanding of what counts as a significant enough reduction of exposure to PLD to trigger this effect. A look at the most dramatic scenario, total or near total loss of exposure, might help to make progress on this issue. Such a situation occurs when emigrants return to the country of origin and children lose contact with what used to be their dominant language with the HL becoming dominant.

Particularly interesting findings on the fate of the formerly strong language are presented by Flores (2010, 2012) who investigated the attrition of German in Portuguese returnees. She not only shows that core grammatical knowledge is not lost, although the number of ungrammatical utterances increases considerably over time, she also finds that age at loss of exposure is of crucial importance. Individuals who lost contact at age eleven or later exhibited minimal attrition effects on German verb placement as compared to those who lost contact between ages seven and eleven. Thus, acquired grammatical knowledge needs to be stabilized; during the entrenchment period, proficiency remains vulnerable.

In order to get a more detailed picture of attrition effects over time, it is necessary to examine case studies. Flores (2015) reports on such a study with one child, recorded 3 weeks and 5, 13, and 18 months after arrival in Portugal. Ana was 19 months old when she moved to Germany and 9 years when her mother returned to Portugal with the children. At that time, German was Ana's dominant language, but except for the first 3 months during which she talked German with her brother, she had no more contact with that language. First attrition effects appeared after 5 months, mostly affecting fluency and lexical retrieval. As for morphosyntax, a few errors occurred in case and gender marking and in verb placement, but V2, OV order and verb inflection were not affected. After 13 months, Ana's German had deteriorated significantly. She experienced serious lexical retrieval problems, mixed Portuguese into German and made word order errors in 43 % of her utterances,

including *V3 and *vVO (finite V, non-finite V, object), although vOV and V2 order still predominated. The rate of correct person/number inflection on verbs dropped from 100 % to 81 % and to 70 % after 18 months. At this point, Ana was no longer able to use German spontaneously. In elicited production, *V3 and *vVO were used more often. The rate of case errors attained 62 % after 13 months, dropping again to 55 % after 18 months, and the rate of gender errors increased to 38 % and then to 45 %.

Attrition in children after loss of contact with the dominant language informs us about how drastically reduced exposure affects knowledge and proficiency at an age when mental grammars are not yet fully stabilized. These insights are transferable to HL acquisition for HL learners are *native speakers, interrupted* (Montrul 2023). In Ana's case, attrition led to a deterioration of proficiency but not to loss of competence or to reanalysis of morphosyntactic properties in the grammatical domain under investigation.

We can thus conclude that HL speakers do not qualify as agents of change in the syntactic core. Whether high error rates in peripheral domains of grammar can trigger change is an open question. But to the extent that language contact can accelerate diachronic change in progress (Silva-Corvalán 1994), this effect is indeed observable in HLs; cf. Rinke and Flores (2021).

4 Successive bilingualism: Second language speakers as agents of change

The question raised above was whether structural reanalysis happens if the prerequisites for the development of native competences are not met, early age of onset of acquisition and sufficient exposure to PLD. The available evidence suggests that drastically reduced quantity of exposure to the PLD results in high error numbers, but not in changes of early acquired morphosyntactic knowledge. Turning to the other factor, early onset of acquisition, we are looking at a different picture. Summarizing succinctly the vast amount of research on this topic, one can say that second language (L2) acquisition differs substantively from L1 development. What is controversial is whether these differences indicate that L2 learners have only partial access to Universal Grammar (UG) and must, therefore, resort to inductive learning in cases where L1 learners are guided by UG. I will not revisit this lengthy and inconclusive debate. It should suffice to mention the empirically well-documented fact that morphosyntactic phenomena that emerge early in L1 development represent particularly difficult L2 learning tasks; see Meisel (2011b: Ch. 4.4).

Children acquiring L1 German, for example, initially use both OV and VO. Yet already during this phase of variable word order, typically before age 2;0, they

clearly prefer OV. Shortly afterward, still at around age 2;0, when most of their utterances consist of only two words (MLU 2.0), they distinguish between finite and nonfinite verbs, placing finite ones before objects or adverbs and moving them into V2 position where required; cf. Clahsen (1982). Importantly, although they occasionally fail to move finite elements, they do not raise nonfinite ones. Finally, they consistently place verbs in clause-final position as soon as they use subordinates (2;6–3;0).

L2 learners, on the other hand, treat German as an SVO language. Note that this adherence to VO is not particular to learners whose L1 is a VO language; it is also attested in learners who speak an OV language as L1; cf. Meisel (2011b: 105–107). Since superficial SVO order exists in German main clauses containing a single verbal element, the VO grammar generates target-conforming simple main clauses. Yet when a constituent other than the subject appears in clause-initial position, the result is ungrammatical (*XSVO), as are constructions where auxiliaries or modals are combined with nonfinite verbs (*SvVO). L2 learners then proceed through an acquisition sequence that is identical across individuals yet different from the L1 sequence, cf. Meisel et al. (1981). First, they place nonfinite verbs in final position (SvOV); successful learners take another step and invert subject and verb, mimicking V2 (XvSOV). Interestingly, they do not carry over the knowledge about OV order to subordinate clauses but use almost exclusively SVO order again. In naturalistic L2 acquisition, only the most successful learners reach the SV-inversion stage, and they continue to also use *V3. Equally importantly, emergence of verb movement does not correlate with acquisition of finiteness markers on verbs. Rather, even successful learners place nonfinite verb forms in finite positions. In other words, the tight connection between finiteness and verb raising in developing native grammars is not found in the linguistic knowledge of L2 learners of German.

In sum, at least some grammatical phenomena that are acquired early and without apparent effort by monolingual and bilingual L1 children count among the most vulnerable ones in L2 acquisition. Non-native grammars can, therefore, differ temporarily or permanently from native ones, even in core properties, and L2 learners are indeed possible agents of changes affecting the syntactic core, provided they play a significant role in language transmission. McWhorter (2007) refers to such cases as “language interrupted” and claims that L2 acquisition is the source of reductions of structural complexity not witnessed when transmission is “uninterrupted” by non-native acquisition. Although he does not rely on results from empirical L2 research, he is clearly in agreement with the hypothesis first suggested by Weerman (1993), according to which L2 speakers are the source of structural reanalysis; see also Kroch and Taylor (1997) and Meisel (2011a). Note that under this scenario, change is not a result of transmission failure; it is triggered by speakers who are themselves learners with an imperfect command of the target language.

Thus, the triggering data are not structurally ambiguous; they rather contain divergent evidence, structures that are not generated by the target grammar; see also Lightfoot (1997).

Having identified L2 speakers as possible agents of diachronic change, the question arises as of which age of onset of acquisition successive bilinguals acquire an L2 kind of knowledge. Recent research on childhood bilingualism shows that AO affects the course of acquisition and ultimate attainment of another language at an earlier age than previously assumed, namely no later than between 3;0 and 4;0; see Meisel (2009). Only some aspects of phonology and morphosyntax are subject to maturational effects and not all of them simultaneously. Consequently, the knowledge attained by early successive bilinguals is largely identical with that of L1 grammars, but it also shares crucial properties with adult L2. Later, AO increasingly leads to similarities with L2.

Determining a turning point as of which successive bilingualism can be classified as child L2 acquisition (cL2) depends on which grammatical features are taken into account, and it can only be approximative. However, Sopata and Długosz (2022), analyzing elicited production data by Polish-German children, conclude that the turning point for this group can be fixed at 3;0, confirming the age range of 3;0–4,0. The grammatical phenomena affected by age-related changes include case and gender marking and inflectional morphology as well as verb placement in main and subordinate clauses. The fact that as of approximately AO 3;6 successive bilinguals resemble adult L2 learners in their acquisition of finiteness and inflectional morphology generally and was documented in previous publications; see Meisel (2009). The same age range was established for verb placement. Sopata (2011), for example, found that Polish–German children (AO 3;8–4;7) resemble L2 learners in their use of German OV and V2 order. We can, therefore, conclude that successive bilinguals exposed to the other language at age three or later qualify as potential agents of change, not only adult L2 learners.

5 Toward a plausible scenario of diachronic change

Since early versus late onset of acquisition is a criterion that differentiates vulnerable properties from less vulnerable ones, it is clear that a plausible scenario of diachronic change must take developmental schedules into account. The claim is not that early acquired features are typically lost late, but that developmental sequences reflect different acquisition timelines of various structural properties. Inductive learning, involving identification of language-particular forms and extraction of

structural information contained in the PLD, requires extensive exposure to preferably salient and unambiguous input data. It is, therefore, a slower process prone to individual variation, resulting in protracted developmental patterns. Yet language learning children can also rely on knowledge available to them before any linguistic experience. The activation of this genetically transmitted knowledge requires minimal exposure to the PLD; it, therefore, happens fast and early; cf. (Carroll 1989).

Let me illustrate how the latter kind of "learning" interacts with grammatical properties of the phenomena to be acquired in shaping the emergence and the resilience of morphosyntactic properties. German L1 development can serve as an example again; cf. Clahsen (1982) and Meisel (1994). Multi-word utterances emerge at around age 1;10 (MLU 1.75), initially combining two elements, nominal, adverbial or verbal ones. This statement already credits children with a considerable amount of grammatical knowledge, most importantly that lexical items extracted from the PLD are syntactically categorized and organized. This seems to happen instantaneously and error-free: Verbal elements never carry nominal inflection or *vice versa*, indicating that they are indeed analyzed as syntactic categories and that category attribution is not achieved by trial and error. This was to be expected under the assumption that syntactic categorization, structure dependency, finiteness, etc. are part of the genetically transmitted knowledge.

In terms of Parameter Theory (PT), the claim is that parameters and their values are available from the start, but choosing target-conforming values requires structural information that learners must detect in the PLD. The directionality parameter is set as soon as children begin to produce multi-word utterances, still before age 2;0. Finite verb movement emerges immediately afterward, at around age 2;0 (MLU 2.0). As soon as three-word or longer utterances are produced, the V2 effect is recognizable, i.e., verbs are raised to the head of CP in V2 languages. Importantly, only finite verbs are moved, indicating that [±finiteness] is part of early grammars. Crucially, erroneous V2 placement has never been reported to occur in the speech of children acquiring a non-V2 language, not even in bilinguals acquiring a V2 and a non-V2 language simultaneously; cf. Meisel (2011b).

Note that the setting of the directionality parameter and the linguistic behavior of language acquirers informs us about the structural knowledge that they bring to the acquisition task. As mentioned in Section 4, German children initially use OV as well as VO, but OV is the preferred option from early on. This is an indication that VO is not more basic than OV, as argued by Kayne (1994), nor *vice versa*. If this was the case, we would expect to find, contrary to fact, that, universally, the basic order is exclusively used at the initial stage.

What we do find rather supports the explanation proposed by Haider (2013). According to his basic branching constraint (BBC), the structural build-up of phrases is universally right-branching. This appears to favor basic OV order. However, "the

branching restriction is independent of the linearization restriction of head and complement, that is, head-final or head-initial order. The linearization follows from the directionality parameter for identification by a head" (Haider 2013: 4). The choice between the values of this parameter is of interest as a potential source of variation and change. Haider (2013) characterizes it as a case of competition between the structural simplicity of the configuration generated by the BBC and the processing complexity of the linearization imposed by the parameter. OV is structurally less complex because it is a direct instantiation of the BBC and because canonical directionality is in harmony with the branching direction of head-final phrases. VO is structurally more complex because it induces a shell structure and implies a mismatch between canonical directionality and right-branching. Yet VO has a processing advantage, for it presents the head early, thus facilitating parsing. Haider (2013: 9) concludes that OV and VO are "equally costly or equally cheap outcomes of *cognitive selection* for parser friendliness, otherwise one of the two types would have vastly outnumbered the other in the course of grammar change over the past millennia."

This equilibrium also seems to exist in L1 acquisition where one might have expected parsing to work in favor of VO since parsing simplicity is crucial for learnability, and SVO is apparently easier to parse than SOV. Such a bias actually exists in L2 acquisition where learners commonly misanalyse OV languages as VO, but never VO languages as OV. Interestingly, diachrony also tends to work in one direction, i.e., change from VO to OV is rare. Haider (2013: 121) observes that "we lack any evidence that an Indo-European language has ever changed from a strict SVO language into a non-SVO language," confirming a similar observation by Kiparsky (1996). If correct, this corroborates the claim that (2)L1 children are not the agents of change in directionality, for they set the parameter from early on to the target value, even bilinguals acquiring an OV and a VO language, as in Basque–Spanish or German–French bilingualism.

Considerations like the ones alluded to suggest strongly that a plausible scenario of grammatical change must take developmental schedules of structural properties into account. The ones that require minimal experience with the PLD are implemented early in developing grammars. Examples mentioned include head directionality, verb movement, finiteness, and the target-conforming movement, all implemented in emerging grammars shortly before or after age 2;0. This was to be expected, assuming that syntactic core phenomena are instantiations of macroparameters that are set before microparameters; see Tsimpli (2014). More importantly, in the present context, acquisition as well as attrition studies have demonstrated that early acquisitions are firmly entrenched in mental grammars; see Section 3.2. In fact, variable use has only been observed during initial phases, as mentioned above, concerning the use OV/VO. Interestingly, initial variability in verb

raising results from an occasional failure to move finite elements, whereas nonfinite verbs are never raised erroneously; see Meisel and Müller (1992).

In sum, the resilience of these phenomena is a well-established and empirically confirmed fact. However, if we want to understand why this is so, alluding to their nature as narrowly syntactic phenomena will not suffice. A plausible scenario of diachronic change must explain how grammatical properties interact with acquisition principles and processing mechanisms, resulting in the resilience of some phenomena and in the vulnerability of others.

6 Conclusions

The goal of this paper has been to review and assess the relevance of empirical studies of different acquisition types for a theory of grammatical change. Based on the observation that certain fundamental structural properties are resistant to diachronic change and do not change across the lifespan of adult native speakers, an increasingly popular hypothesis in historical linguistics regards language acquisition as the source of alterations in these grammatical areas, identifying L1 learners as agents of diachronic change. Arguments in support of this idea consist almost exclusively of plausibility assumptions derived from principles offered by the adopted theoretical framework. This raises the question whether empirical findings of acquisition research can corroborate this hypothesis and ensuing claims.

The conclusion to be drawn from the review of research on first language acquisition is that the quest for change of syntactic core properties in L1 development has not been successful. As pointed out by Roberts (2017), change must be well-motivated. Yet neither structural ambiguity nor opacity constitute the required triggering factor, not even in combination with increasing frequency of ambiguous constructions or with decreasing frequency of unambiguous ones. Nor does low structural complexity of an alternative analysis suffice as motivation, not even if it could be shown to imply reduced processing complexity. I am, therefore, led to the conclusion that for reanalysis to happen in the syntactic core, the triggering information must be contained in the PLD, as suggested by cue-based approaches (Lightfoot 2006, 2017). This is why bilingualism has been claimed to be a possible setting for syntactic change to happen, assuming cross-linguistic interaction within individuals when the alternative trigger is offered by the other language. Yet this effect is not found in simultaneous or early successive bilinguals who normally do not differ from L1 children in course and ultimate attainment of acquisition. Language contact is thus not a sufficient cause either.

Weaker languages, on the other hand, do exhibit grammatical properties that deviate from L1 norms. Here, however, alterations are not triggered by the other

language. Rather, they result from insufficient exposure to the target PLD, as is also argued to be the case with heritage languages. They differ from the baseline in morphological and syntactic properties, and such differences are possible sources of diachronic change; cf. Polinsky (2018) or Montrul (2023). Yet although HL speakers are potential agents of morphosyntactic change – these alterations do not involve reanalysis of syntactic core properties.

In sum, the quest for evidence of change of fundamental properties of grammar has led to the conclusion that age of onset of acquisition is a crucial factor and that only second language acquisition exhibits such effects. Non-native grammars can indeed differ from native ones in core properties, and L2 learners are, therefore, possible agents of such changes, provided they play a significant role in language transmission. This need not imply that they are a socially dominant group within a speech community. The perhaps most likely setting for this to happen is when child or adult L2 speakers provide a significant part of L1 children's input. Thus, L2 speakers are not only themselves potential agents of diachronic change, they can also cause (2)L1 children to become agents of change affecting core properties.

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