Chapter 24: Syntax

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Abstract

In research on heritage speakers, it is often observed that areas of core syntax tend to be resilient and resemble the relevant baseline. This paper discusses this generalization and provides examples of areas that tend to be resilient and areas that are vulnerable. Research into the syntax of heritage speakers has tended to focus on certain areas, such as argument structure and the representation of null arguments (Polinsky 1997, 2006, Pires & Rothman 2007, Rothman 2007, Rothman & Iverson 2007, Montrul 2008, Laleko this volume), meaning that a lot of grammatical domains have not been sufficiently explored. This chapter nevertheless tries to summarize the main findings and outline important methodological and theoretical issues that any work on heritage syntax needs to consider carefully. Examples of the latter include the question of what the appropriate baseline for comparison is, and how to adequately separate morphology and syntax. Empirically, the chapter will consider lexical categories, passives and verb second as examples of relatively resilient areas of syntactic representations. In terms of areas that are more vulnerable, it will look at word order, long-distance dependencies, and discontinuous dependencies.

Keywords: arrested development, attrition, long-distance dependencies, verb second, word order

1. Introduction[1]

The topic of the present chapter is the syntax of heritage languages. Heritage speakers are native speakers with grammatical representations based on the same principles as all other languages (Rothman 2009: 156, Rothman and Treffers-Daller 2014: 95, Polinsky 2018: 9). That is, even though the representational outcomes may be different[2], we expect that the grammatical competence of heritage speakers is based on the same principles and constraints as the grammatical competence of all other native speakers: Their grammars are construed along the same principles that enable humans to acquire language (often called Universal Grammar in formal approaches to language; see e.g., Chomsky 1972, 1975). This requires a broader concept of nativeness than the standard monolingual speaker (as e.g., defined in Chomsky 1965; see Lohndal 2013, and Polinsky 2018: 27 for discussion). Nevertheless, the fact that these speakers are bilinguals with a clearly defined dominant language suggests that their grammars may exhibit certain hallmarks. A lot of research into the syntax of heritage speakers has been and is concerned with these hallmarks and how they differ from a given baseline. The fact that these speakers are native speakers of their variety does not prevent comparisons with such a baseline, as we will discuss in more detail in section 2.1.

Polinsky (2018: 222-223) highlights two main observations when it comes to the syntax of heritage languages. The first is that certain properties are resilient whereas others are quite vulnerable, as compared to a given baseline. The second is that there is a substantial amount of uniformity in the syntax across heritage languages, and these languages seem to differ 'from their respective baseline grammars in comparable ways' (Polinsky 2018: 223). We will see this quite clearly when we turn to the case studies in sections 3 and 4. As such, heritage grammars provide a different kind of testing ground for studying the relationship

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[2] Polinsky (2018) shows that there are instances where heritage speakers more strongly resemble L2 speakers than L1 speakers. Montrul, Bhatia, Bhatt and Puri (2019) also argue that it is not always straightforward to distinguish heritage grammars from the grammar of L2 speakers in the domain of morphosyntax. But facts like these do not entail that heritage speakers are not native speakers of their heritage language, it just means that their representations in some cases resemble L1 speakers and in others L2 speakers.

between nature and nurture, in particular in developing better models of universal aspects of language design and the relationship between input quantity and quality (cf. Lohndal, Rothman, Kupisch and Westergaard 2019).

The structure of this chapter is as follows. Section 2 is a preamble that discusses certain theoretical issues that are necessary to clarify before we look at some hallmarks of the syntax of heritage speakers and their languages. There are many ways in which one can structure such an overview. Here, we follow Polinsky and Scontras (2019) who divide the domains of interest into two categories: Resilient and vulnerable. We look at resilient syntactic rules in section 3 before turning to vulnerable rules in section 4, while keeping in mind that this two-way distinction is not always clear cut. Section 5 provides a summary and concluding remarks.

2. Preamble: Baseline, differences, and syntax vs. morphology

Before we can embark on a discussion of the central issues concerning the syntax of heritage speakers, we need to consider several theoretical questions. One concerns the question of what the appropriate baseline is, that is, what we compare the syntax of heritage speakers against. The other is whether and how to distinguish between syntax and morphology.

2.1. The question of baseline and linguistic differences

A lot of work on heritage languages and heritage speakers has tended to emphasize the ways in which these are different from a baseline. That is also the case for syntax: Most papers have focused on whether or not heritage speakers are similar to the baseline, mostly finding that they are different, raising the question of how and why they differ. However, the question of the baseline is extremely important in work on heritage speakers. Often scholars compare the linguistic competence of a heritage speaker against that of a monolingual speaker of the same variety as the heritage speaker. If the heritage language is Spanish, the comparison would then be monolingual speakers of Spanish. However, this is not adequate (cf. Bley-Vroman 1983, Cook 1997), since the input to the heritage speaker typically would not be monolingual Spanish. Rather, the baseline should be the input provided to the heritage speakers, be it the the diaspora baseline (the language of first-generation immigrants) or the language spoken by later generations of immigrants. Put simply, the baseline is the language which serves as the input to the child acquiring the language (cf. Benmamoun, Montrul and Polinsky 2013, Polinsky 2018, Madsen 2018). Polinsky (2018) provides the following helpful table of the relevant comparison groups.

	Immigrant setting	**Homeland (if available)**
Baseline	First-generation immigrants/monolingual speakers in diaspora	Age-matched homeland speakers or age-matched speakers at the time of emigration
Adult heritage speakers	Second- and subsequent-generation bilinguals	NA
Child heritage speakers	Second- and subsequent-generation bilinguals	Age-matched and younger homeland speakers

Table 1: Relevant groups of comparison for studying heritage language speakers (Polinsky 2018: 16)

Compared to a relevant baseline, for a given linguistic property there are at least four possible outcomes, listed in (1) (from Polinsky 2018: 18).

(1) a. No difference
b. Transfer from the dominant language
c. Attrition across the lifespan
d. Divergent attainment

Let us consider each of these in turn, albeit only briefly as they will all resurface below in discussions of individual phenomena. The case of no difference at all is rare in heritage speakers, although as we will see in later sections, whether or not there is a difference depends on the domain of the grammar being investigated. It is impossible to make an overarching claim regarding difference, this has to be relativized to specific linguistic properties (Polinsky 2018: 18). Transfer (or cross-linguistic influence) are cases where a pattern from the dominant language is used in another language which does not exhibit the same pattern (in the same way; see also Aboh 2015).[3] In general, transfer has mostly been seen in individuals whose dominant language is English, although this is arguably due to

[3] Rothman, Gonzalez Alonso and Puig-Mayenco (2019) argue that transfer and cross-linguistic influence should be separated. Since such a distinction won't matter much for what follows, the text will treat them as equivalent for present purposes. See also Muysken (2019) on the role of transfer in heritage languages.

transfer mostly being studied in individuals with English as their dominant language. Attrition is defined as follows by Seliger (1996: 616): 'the temporary or permanent loss of language ability as reflected in a speaker's performance or in their inability to make grammaticality judgments that would be consistent with native speaker monolinguals of the same age and stage of language development'. If adult heritage speakers do not have a property that younger bilingual children have, attrition or loss is often invoked (de Bot 1990, Yukawa 1997, Köpke 1999, 2004, 2007, Isurin 2000, Sorace 2000, Montrul 2002, 2008, 2016, Tsimpli, Sorace, Heycock and Filiaci 2004, Tsimpli 2017, Schmid and Köpke 2007, 2017, Bylund 2009, Polinsky 2011, 2016, 2018, Schmid 2011, Iverson 2012, Pascual y Cabo and Rothman 2012, Montrul and Sánchez-Walker 2013, Putnam and Sánchez 2013).[4] Lastly, we have the concept of divergent attainment or arrested development. Polinsky (2006) and Montrul (2008) originally developed this idea under the rubric of 'incomplete acquisition' (see also Silva-Corvalán 2018), which means that the reason for a different end-state grammar is that a pattern was not fully acquired (especially so for patterns that were known to be late-acquired by monolinguals). However, this term has been widely criticized for a variety of reasons (see Pascual y Cabo and Rothman 2012, Putnam and Sánchez 2013, Kupisch, Lein, Barton and Schröder 2014, Kupisch and Rothman 2016, Otheguy 2016, Polinsky 2018). The term is discussed more fully in the Preface to this handbook and the reader is referred to this discussion. Here it is important to highlight that 'the grammar heritage speakers come up with is internally consistent, and, as such, complete, yet in a number of ways different from the grammar of the baseline' (Polinsky 2018: 28). Put differently, the grammar is systematic, and a divergent pattern is also systematic. This relates to a proposal by Lohndal and Westergaard (2016), who suggest that divergence is systematic and attrition may be unsystematic. The latter may also suggest that attrition is more directly associated with performance-type issues. Crucially, looking for differences between a heritage grammar and some relevant baseline does not at all entail a deficiency-based approach to heritage speakers and their languages.

2.2. Syntax vs. morphology and how to tease them apart

[4] Bylund (2009) highlights the ways in which attrition in adults and in children may behave differently. In adults, attrition is primarily seen in syntactic violations (cf. Schmid 2002), whereas in child attrition, attrition affects the linguistic system more generally: case marking (Polinsky 1997), verb morphology (Seliger 1991, Turian and Altenberg 1991), disintegration of aspectual contrasts (Montrul 2002), and the syntax-morphology of mood selection (Perez-Cortes 2016, Perez-Cortes, Putnam & Sánchez 2019).

Distinguishing between syntax and morphology is not a trivial task. Various theories of syntax and morphology take different stands on how they relate to each other (e.g., Carstairs-McCarthy's 1992 overview, the contributions to Spencer and Zwicky 1998, Hippisley and Stump 2014, and the discussion in Ackema and Neeleman 2004, Borer 2005a, b, Embick 2010, 2015, Julien 2002, Caha 2009, Matushansky and Marantz 2013). Space does not allow us to consider these here, rather the purpose is to show that it may sometimes be difficult to diagnose whether or not a particular linguistic property belong to syntax or to morphology (cf. also Polinsky 2008: 222).[5]

Let us consider the following case study. Riksem (2017) discusses changes in the grammar of heritage speakers of American Norwegian, the heritage language stemming from Norwegians who moved to the US generally in the 19th century (see Haugen 1953). Riksem looks at nominal morphology and she compares data from the speakers in Haugen (1953) with a subset of the speakers in the Corpus of American Nordic Speech (CANS; Johannessen 2015). She finds two main patterns: (i) Omission of functional suffixes, both in plural and/or definite noun phrases, (ii) an increased usage of functional exponents from English. Two main hypotheses are presented in order to account for these changes: The syntactic structure could be intact and the changes are due to a change in the morphophonological exponents. Alternatively, the syntactic structure itself may have changed. The former analysis relies on a model within second language acquisition called the Missing Surface Inflection Hypothesis (MSIH), proposed by Lardiere (2000, 2009) and Prévost and White (2000); see also Putnam, Perez-Cortes and Sánchez (2019). This model holds that there is no one-to-one relationship between overt morphological exponents and the underlying syntactic heads. Rather, there can be discrepancies, either because the learner has not acquired the relevant exponents, or because the matching conditions between the syntactic structure and the exponents are not met. A fundamental claim is that a learner would rather omit a form than produce the wrong form (Lardiere 2000). However, as Riksem discusses (2017: 21), the MSIH does not make clear predictions concerning where and how inflection may go missing, making it possible for avoidance to explain any instance where the syntax and the morphophonology do not align according to a given baseline. For this reason, and due to properties of the data, Riksem (2017) favors the second hypothesis whereby the syntactic structure itself is the culprit for the diachronic changes. It should be noted, though, that the two hypotheses are not mutually

[5] The same argument can be made concerning syntax and information structure, see Laleko (this volume) for a comparable discussion.

exclusive, again demonstrating how difficult it can be to claim that the locus of a given change towards a baseline is squarely within syntax or squarely within morphology. For that reason, the reader should consult Putnam, Schwarz and Hoffman (this volume) alongside the present chapter. As much as possible, we will try to only focus on core syntactic phenomena in what follows, but as the reader will see below, it is not always straightforward to locate the true source of the behavior.

3. Resilient syntactic properties

In general, core syntax is resilient towards change across heritage languages. Benmamoun, Montrul and Polinsky (2013: 148) put it as follows:

> Syntactic knowledge, particularly the knowledge of phrase structure and word order, appears to be more resilient to incomplete acquisition under reduced input conditions than inflectional morphology is. There is a tendency for heritage language speakers to retain the basic, perhaps universal, core structural properties of their language.

What the "basic, perhaps universal, core structural properties" of language are is an ongoing research topic. Nevertheless, the fact that some areas are highly resilient despite reduced access to input can be used to probe the nature of these core properties of language. The distinction between the core and the periphery originates with Chomsky (1981). Here, core rules of grammar are determined by principles and parameters, themselves part of Universal Grammar. The periphery consists of 'marked' phenomena, such as irregularities and exceptions more generally. As Chomsky and Lasnik (1993: 510) put it: 'A reasonable approach would be to focus attention to the core system, putting aside phenomena that result from historical accident, dialect mixture, personal idiosyncrasies, and the like'. Currently, the core consists (at least) of syntactic features and syntactic operations (e.g., Merge, Agree, Spell-Out). As Lohndal, Rothman, Kupisch and Westergaard (2019) point out, research on heritage grammars has contributed a range of important results when it comes to core properties. Notably, across the literature, there is an adherence to what we may label 'default' strategies in the acquisition and development of heritage grammars (Polinsky 2018). For example, the basic word order is mostly robust, whereas the non-canonical ones are not (Montrul 2016). We still need a better understanding what a default pattern is, including the cross-linguistic ramifications of default patterns (see Polinsky and Scontras 2020, and Putnam 2020).

Looking beyond core syntax, work on first language attrition has shown that whereas syntactic features are intact, semantic and/or pragmatic features are vulnerable (Tsimpli, Sorace, Heycock and Filiaci 2004).[6] In general, the syntax-semantics interface is considered to be less vulnerable than the syntax-pragmatics interface (Sorace 2011, Polinsky 2018). However, not that much research has been done on the syntax-semantics interface. In reviewing this literature, Polinsky (2018: 270-273) shows that those heritage speakers who have been studied appear to observe the binding principles (cf. Chomsky 1981, Büring 2005) pretty much like the baseline speakers. However, unlike the baseline, the structural and linear distance between the binder and the anaphor matters for how well they observe the principles (see also Ionin this volume). Greater distance means that they are less target-like, which is an effect that we also see in the area of agreement and morphological dependencies more generally (see Montrul 2016, Polinsky 2018, and Putnam, Schwarz and Hoffman this volume).

Summarizing, the general picture is that core syntax is quite resilient towards change. In what follows, we will look more closely at a few examples of this. We will first consider parts of speech, then passivization, before turning to a more extended discussion of Verb Second.

3.1. Lexical categories

Polinsky (2018) argues that the distinctions between various parts of speech, notably verbs, nouns and adjectives, are relatively stable across heritage languages. Heritage speakers do not, say, collapse everything into one lexical category. Rather, they maintain the distinctions that are in the baseline. However, that is not to say that they maintain the distinctions *in the same way*. Polinsky (2005) argues that nouns and verbs are represented and also maintained differently. She conducted a lexical decision-task whereby both heritage speakers and speakers of the baseline Russian heard items from the three lexical categories verbs, nouns and adjectives. These were distributed across three frequency ranges based on the frequency dictionary by Brown (1996). 11 items from each range were selected for each class, yielding 33 items across three classes that all were matched in frequency and word length. Unsurprisingly, Polinsky found that the baseline speakers were faster and that they had the same response times across the three classes. There was no signficiant effect of frequency.

[6] However, Iverson and Miller (2017) aruge that syntactic features also can be affected by reduced exposure. Furthermore, similar effects are seen for word order in general, which we return to in section 4.

The heritage speakers behaved quite differently: They were much faster for verbs than for the two other classes, adjectives being the weakest class. Polinsky argues that heritage speakers have selective control of word classes, and in particular, they show a clear verb bias. This is not surprising given that we know that nominal morphology generally is less resilient than verbal morphology in heritage languages (Benmamoun, Montrul and Polinsky 2013, Polinsky 2018: Chapter 5). Polinsky (2018: 227) shows that a frequency explanation for the verb bias does not work; rather, the size of the word classes may be a more essential part of the explanation: About 18% of the Russian lexicon consist of verbs, whereas 48% are made up of nouns. Such factors also clearly suggest that different heritage languages may have different biases, and so far, too little work has been done on this to provide robust cross-linguistic generalizations.

3.2. The passive

Turning from lexical categories to another area of the grammar, Putnam and Salmons (2013) study how heritage speakers in Kansas use the German passive (see Polinsky 2018: 237-238 for a comparable study of heritage Russian speakers). Their variety is labeled Moundridge Schweitzer German (Eastern Palatinate in origin), and the variety was established by migrants settling in Freeman, South Dakota, and Moundridge, Kansas starting in 1874. This is a small population, consisting of roughly 50 remaining speakers, and Putnam and Salmons (2013) study 10 of them. These 10 speakers did not produce passives spontaneously, but by using a translation task it was possible to elicit them. Importantly, in a comprehension experiment, speakers accepted the relevant passive constructions, suggesting that the knowledge of the passive is indeed present in these heritage speakers (Putnam and Salmons 2013: 239) as a grammar that generates the relevant structural representations (Putnam and Salmons 2013: 245). If so, then heritage speakers are able to retain the rules underlying the passive, but that '[t]heir poor performance has to do with morphological difficulties, not ignorance of the operations involved in A-chains' (Polinsky 2018: 238). This general observation may extend to A-movement more generally, as Polinsky and Scontras (2020) speculate.

3.3. Verb Second

The last example of a resilient property is Verb Second (V2), which is to say that the finite verb has to appear in the second position (Holmberg and Platzack 1995, Vikner 1995, Holmberg 2015). Ever since Håkansson's (1995) seminal study, V2 has been a favorite topic when it comes to work on Germanic heritage languages. Håkansson studied five bilingual

expatriate (heritage) speakers who all have slightly different backgrounds. Three of them grew up in the US using English at school and Swedish or Norwegian at home. One grew up in France learning Swedish and French, and lastly, one grew up in both Sweden and France acquiring both Swedish and French. These speakers were studying Swedish as a second language in Sweden at the time when they were tested. The main finding is that whereas noun phrase morphology has undergone attrition, word order has not. One of the areas Håkansson investigated is V2. She labeled V2 errors 'XSV patterns', that is, patterns whereby an initial constituent is followed by the subject and then the verb. In her study, she compared the heritage speakers to L2 learners of Swedish, and a striking difference emerged: The L2 learners frequently make V2 mistakes, whereas it is only one of the heritage speakers who makes one such mistake. Håkansson argues that her findings suggest that 'the V2 rule resists attrition' (1995: 160).

Additional evidence for the resilience of V2 comes from Schmid's (2002) study. She studied the grammar of 54 German Jews. During the Nazi regime, they emigrated to England and the US. Schmid's corpus has 5050 sentences requiring V2 word order, and only 2% (102/5050) displayed an error in V2. However, the total number of subject-initial sentences are not provided, and we also do not know if some of the speakers displayed a more English-like word order.

Another study by Hopp and Putnam (2015) investigates word order in Moundridge Schweitzer German, the same population as discussed in section 3.2. Hopp and Putnam (2015) collected both production data and acceptability judgment data. They find that in both production and acceptability judgments, V2 is retained in matrix clauses. Interestingly, in embedded clauses, there is more variation. In particular, in embedded clauses introduced by the complementizer *dass* 'that' (2) and by *weil* 'because' (3), the word order is predominantly V2.

(2) … dass da Lieber Gott hot uns auch net alles genomm wie dat in Oklahoma
that the dear God has us also not everything taken like there in O.
'that the dear God hasn't taken everything away from us like in Oklahoma.'
(Participant 102; Hopp and Putnam 2015: 195)

(3) ... weil ich duh net Hochdeutsch redde
because I do/can not High.German talk
'because I can't speak standard German'
(Participant 103; Hopp and Putnam 2015: 195)

Hopp and Putnam (2015: 203) argue that there 'is little to no evidence in the production data that English SVO word order has affected [Moundridge Schweitzer German]'. Rather, they argue that 'the combination of lesser use or activation of [Moundridge Schweitzer German] and cross-linguistic influence from English which does not instantiate asymmetric word order in main and subordinate clause contexts leads to a particular type of leveling of word order distinctions across clause types within the constraints afforded by German syntax' (Hopp and Putnam 2015: 206). They also speculate that the changes in Moundridge Schweitzer German may be an instance of what they call 'typological drift' – since modern German also is developing options for licensing V2 in certain embedded clauses.

It should be noted that similar asymmetries are also observed in other heritage varieties, notably heritage Norwegian and Swedish. See Larsson and Johannessen (2015a,b) and Johannessen and Salmons (this volume) for further discussion. More generally, there has recently been a lot of research into V2 in Germanic heritage varieties. Strømsvåg (2013), Eide and Hjelde (2015, 2018), Johannessen (2015a), Khayitova (2016), Alexiadou and Lohndal (2018), and Westergaard and Lohndal (2019) look at Norwegian (based on the Corpus of American Nordic Speech (CANS); Johannessen 2015b), Kühl and Heegård (2016, 2018) consider Danish, Larsson and Johannessen (2015) Swedish, and lastly Arnbjörnsdottir, Thrainsson & Nowenstein (2018) study Icelandic. Generalizing across these languages, the main finding aligns with Håkansson (1995) and Hopp and Putnam (2015): V2 is generally intact in matrix clauses. Individual speakers may occasionally violate it, some may also violate it more generally, which tends to align with fluency (Johannessen and Salmons this volume). Westergaard and Lohndal (2019) find that the number of contexts for V2 word order also may be severely reduced, where the relevant context is non-subject-initial declaratives like in (4a), as opposed to subject-initial clauses which structurally overlap with SVO (4b).

(4) a. På mandag kjøpte John mange bøker. Norwegian
on Monday bought John many books
'On Monday, John bought many books.'

b. John kjøpte mange bøker på mandag.
John bought many books on Monday
'John bought many books on Monday.'

Typically, V2 languages have a higher degree of non-subject-initial declaratives in spontaneous speech, whereas languages like English mostly have subject-initial declaratives. Westergaard and Lohndal find that there is a correlation between the loss of V2 and the loss of contexts that trigger V2: the fewer the contexts a speaker produces, the less V2 the speaker produces. Furthermore, they argue, like Hopp and Putnam (2015), that a likely reason for this development is cross-linguistic influence from the speaker's dominant language English. The pragmatic structure of English is more deeply entrenched, leading the speakers to let it override the acquired structure for Norwegian. However, as Westergaard and Lohndal point out, another possible analysis is that SVO order 'is chosen because it is less complex than non-subject-initial declaratives and also leads to greater word order rigidity' (Westergaard and Lohndal 2019: 98). Scholars have suggested that there is such a 'default strategy' in Russian and Spanish (Benmamoun, Montrul and Polinsky 2013, Scontras, Fuchs and Polinsky 2015, Polinsky and Scontras 2020). In these cases, the dominant language is also English, making it impossible to argue in favor of one or the other account.

Taken together, even though V2 is remarkably stable, we see that whatever syntactic feature is responsible for deriving V2 (see Holmberg 2015 for comprehensive discussion; see also Johannessen and Salmons this volume for additional discussion of V2 in heritage grammars), this feature can be attrited, most likely due to reduced exposure. The outcome may in part be determined either through cross-linguistic influence or through heritage speakers resorting to default strategies.

4. Vulnerable syntactic rules

Even though heritage speakers are able to retain a lot of core grammatical properties, there are also properties that are retained to a lesser degree. For example, even though they maintain abstract knowledge of A-bar movement, notably *wh*-question formation and relativization, this knowledge is rather limited. In this section, we will look at examples of syntactic rules that are vulnerable, in particular word order, long-distance dependencies, and discontinuous elements. Other phenomena that have a clear syntactic component can also be also vulnerable, but these are discussed elsewhere in this handbook: See Laleko (this volume) on null forms, and Ionin (this volume) on quantifier raising and quantifier ambiguities.

4.1 Word order

Polinsky (2018: 273) argues that '[…] word order appears to be a more vulnerable domain, subject to general change and sometimes to transfer […]'. Languages that allow multiple

word order generally allow fewer possibilities in the heritage language. However, many studies investigate speakers whose dominant language is English, which has rather strict restrictions on word order, and they often find that there is transfer of word order properties from English. However, there are also cases demonstrating that transfer is not the entire answer. Let us look at one of these in some detail.

Albirini, Benmamoun and Saddah (2011) report on a production study of SVO versus VSO in two groups of heritage speakers of Egyptian and Palestinian Arabic, each consisting of 10 participants. The groups were somewhat heterogenous in terms of the background of the participants and which language they self-identified as their L1. For example, all of the Palestinian heritage speakers still speak Arabic at home whereas eight of the Egyptian heritage speakers do the same. The heritage speakers were compared to 10 native speakers of Egyptian Arabic and Palestinian Arabic, respectively, who all came to the United States as adults. For word order, Albirini, Benmamoun and Saadah (2011) find that the heritage speakers split in their behavior: The Egyptian heritage speakers predominantly use SVO (77.65%), and they use it more than the native speaker baseline (52.24%). However, the Palestinian heritage speakers are different: They use SVO less than the baseline speakers, 19.73% compared to 29.34%, although this difference is not statistically significant. The authors speculate that 'The prevalence of SVO in the speech of the Egyptian groups versus the Palestinian groups may be attributed to word order differences between the Egyptian and Palestinian dialects of Arabic' (Albirini, Benmamoun and Saadah 2011: 281). However, as the authors also say, it may also be that the Egyptian heritage speakers somehow are more prone to transfer from English

The Egyptian heritage speakers seem to avoid using VSO, which can be seen by speakers shifting to SVO after they have started a sentence with a verb. The example in (5) illustrates this (Albirini, Benmamoun and Saadah 2011: 281).

(5) marra laʔi laʔeit … huwwa laʔi ʔizaz ʔaw ħaga zay kida Egyptian
once found found.1S he found bottle or thing like that Arabic
'One time he found … found … he found a bottle or something like that.'

This example also illustrates the speaker's uncertainty about verbal inflection or about subject-verb agreement. In (5), the correct form is not used the first time, and then the speaker replaces it with another incorrect form, before repeating the first form when using SVO word order. For Palestinian heritage speakers, the extensive use of VSO cannot be attributed to

transfer from English. Presumably VSO is dominant in baseline Palestinian Arabic, in which case overgeneralization or cross-linguistic overcorrection (Kupisch 2014) may account for heritage speakers' tendency to over-use VSO. However, additional studies on different language pairs, notably with a different dominant language, are sorely needed to better understand exactly when and how word order may be vulnerable in heritage speakers.

4.2. Long-distance dependencies

Heritage speakers often struggle with long-distance dependencies, such as antecedent-gap relations in the case of *wh*-movement or relative clauses. Relative clauses are one of the most heavily studied A-bar dependencies and there is no space here to do justice to the rich literature on the topic; see Polinsky (2018: 241-248 for a thorough review). Here we will consider an example based on Polinsky's (2011) study of the comprehension of relative clauses in monolingual and bilingual children (ages 6;0-7;0) and adults. She investigates English and Russian, where relative clauses in both languages are formed by creating an antecedent-gap relation. In Russian, there is a relative pronoun *kotor-*, which agrees with the extracted constituent in gender and number. Furthermore, this pronoun exhibits case concord with the gap site. Examples of a subject gap and an object gap are provided in (6) and (7) (setting aside different possible word order permutations).

(6) sobak-a$_1$ [kotor-aja __$_1$ ukusila košk-u] SUBJECT GAP
dog-NOM which-NOM bit cat-ACC
'the dog that bit the cat.'

(7) sobak-a$_1$ [kotor-uju __$_1$ ukusila košk-a] OBJECT GAP
dog-NOM which-ACC bit cat-NOM
'the dog that the cat bit.' (Polinsky 2018: 245)

Both the child-language groups and the monolingual adults achieved more than 90% accuracy on both subject and object relative clauses. However, the adult heritage group struggled, and they struggled with object relatives. Rather than associating the antecedent with an object gap, the speakers treated these clauses as subject relatives. Polinsky argues that what we see in the adult heritage speakers is not a result of a fossilized pattern; rather, it is the result of attrition in the course of their lifespan. This attrition is due to less input, which in turn means that heritage speakers are less sensitive to case morphology, which dovetails with findings from the morphology of heritage speakers more generally (Montrul 2016, Polinsky 2018, Putnam,

Schwarz and Hoffman this volume).[7] In addition, 'the universal preference for subject relative interpretation kicks in, causing heritage speakers to perform perfectly on subject relatives and at chance on object relatives' (Polinsky 2018: 246).

This preference for subject relative clauses is supported by O'Grady, Lee and Choo's (2001) study of adult Korean heritage speakers. They contrast patterns like the one shown in (8).

(8) a. [__ namca-lul cohaha-nun] yeca — SUBJECT RELATIVE CLAUSE
man-ACC like-PRS woman
'the woman who likes the man'

b. [namca-ka __ cohaha-nun] yeca — DIRECT OBJECT RELATIVE CLAUSE
man-NOM like-PRS woman
'the woman who the man likes'

As (8) shows, case markers and the adnominal suffix *-nun* on the verb are essential in order to master the difference between subject and direct object relative clauses. To test heritage speakers' knowledge of relative clauses, O'Grady, Lee and Choo conducted a comprehension experiment based on the contrast in (8). The experiment had three groups of participants: 16 heritage learners attending an accelerated second-semester university course in Korean, 25 non-heritage learners enrolled in the same course, and 20 non-heritage learners in a fourth-semester university course. There were no signficiant differences between the three groups, and importantly, all groups did much better on subject relative clauses compared to their direct object counterparts. An important reason why the heritage speakers and non-heritage speaker learners do so poorly, the authors argue, lies in their poor ability to make use of the morphosyntactic cues.

Polinsky and Scontras (2020) argue that the difficulty with object relative clauses is an example of a more general difficulty, namely that of long-distance dependencies. As they put it: 'Object-gap dependencies are reanalyzed as subject-gap ones, which is a manifestation of the need to shorten the distance in the long-distance dependency' (Polinsky and Scontras

[7] The importance of language use and proficiency can also be seen through cross-linguistic differences: Sánchez-Walker (2012) does not find that her heritage speakers of Spanish struggle with object relative clauses, which is arguably due to these speakers being more proficient and less subject to attrition than the Russian heritage speakers in Polinsky's (2011) study.

2020: 10). As we will see next, the difference between subject and object relatives fits well into a general pattern in heritage speakers.

When it comes to other types of long-distance dependencies, there is not much work done on, say, *wh*-questions. As Polinsky (2018: 249) puts it: 'there is no evidence that heritage speakers lack the ability to form A-bar dependencies in principle'. The general finding, as summarized by Hopp, Putnam and Vosburg (2019) is that long-distance *wh*-movement is difficult to produce and comprehend, and they cite the following studies, which more or less represent an exhaustive list when it comes to this area of the grammar: O'Grady, Lee and Choo (2001), Polinsky and Kagan (2007), Montrul, Foote and Perpiñán (2008), Polinsky (2011), Gürel (2015) Pascual y Cabo and Gómez Soler (2015), and Bousquette, Frey, Nützel, Putnam and Salmons (2016). Here we will consider Hopp, Putnam and Vosburg's (2019) study of *wh*-questions in heritage Low German (and L2 English) speakers. They show that in order to avoid complex ('longer') dependencies, these speakers often use the so-called medial-*wh* construction, which is to say that a copy of the *wh*-constituent surfaces overtly at the left edge of the embedded clause (see Lohndal 2010 and references therein for more on these constructions). An example is provided in (9) from Mennonite Low German, or Plautdietsch, as it is often called.

(9) Wua denkjst du **wua** John sien Jeburtsdach fiert? Plautdietsch
where think you where John his birthday celebrates
'Where do you think that John celebrates his birthday?'
(Hopp, Putnam and Vosburg 2019: 355)

Hopp, Putnam and Vosburg (2019) find that only heritage speakers produce this medial-*wh* pattern, which arguably also has been part of their input. They argue that the Derivational Complexity Hypothesis (Jakubowicz 2005, Jakubowocz and Strik 2008), which holds that more syntactic Merge and Move operations create greater derivational complexity, can illuminate these findings since this medial-*wh* strategy can be viewed as a way of avoiding derivational complexity.

When it comes to the question of whether or not heritage speakers obey constraints on *wh*-movement (i.e., whether or not they obey island constraints), there is really only one study that addresses this issue. Kim and Goodall (2016) investigate *wh*-islands (10) and adjunct islands (11) in homeland speakers of Korean compared to heritage speakers of Korean in the U.S.

(10) *Who$_1$ do you wonder [whether Sue saw __$_1$]? *WH*-ISLAND

(11) *Who$_1$ did Jason cry [when Nat kissed __$_1$]? ADJUNCT ISLAND

Interestingly, Korean does not display overt *wh*-movement, and importantly, the language only observes *wh*-islands, it does not have adjunct islands. It may be expected that heritage speakers may transfer island properties from their dominant language into their heritage language, meaning that they show an island effect for adjuncts in Korean. However, that is not what Kim and Goodall (2016) find. Rather, they find that the homeland group and the heritage speaker group are very similar. They rejected *wh*-islands and they also accepted adjunct islands. Kim and Goodall argue that this supports previous claims that island phenomena by and large are immune to environmental influences and that input may not be as important as some have argued (e.g., Culicover and Jackendoff 2005, Pearl and Sprouse 2013). However, given recent findings of cross-linguistic variation, e.g., between English and Norwegian (Kush, Lohndal and Sprouse 2018, 2019), the field needs additional studies of how heritage speakers navigate island constraints in the face of variation.

4.3. Discontinous elements

We have seen that long-distance dependencies pose problems for heritage speakers. However, similar problems emerge in discontinuous relationships, for instance between verbs and functional heads, or between nouns and classifiers. Here we will consider nouns and classifiers. Studies show that classifiers are vulnerable in heritage speakers, in the sense that speakers may have a reduced inventory of classifiers, they may not produce them, or they may produce the wrong ones (Wei and Li 2001, Ming and Tao 2008). It has also been demonstrated that the number of classifiers can correlate with proficiency (see Wei and Li 2001 on Cantonese heritage speakers). In addition to these findings, the distance between the classifier and the noun also matters. Benmamoun, Montrul and Polinsky (2013: 145-146) report on an auditory comprehension experiment involving Mandarin Chinese. Here classifier phrases and their associated nouns are separated by one content word and the adnominal marker *de* (12). The classifier phrase and the content word are both underlined.

(12) Laozhang ba <u>na-yi-liang</u> hen-kuan-chang de <u>qiche</u> songgei le Laowang
Mr.Zhang BA DEM-one-CLF very-wide-open ADN car give PERF Mr.Wang
'Mr. Zhang gave a very big car to Mr. Wang.' (Polinsky 2018: 217)

Sentences like (12) are compared to instances where the wrong classifier is used, cf. (13)

(13) *Laozhang ba na-yi-suo hen-kuan-chang de qiche songgei le Laowang
Mr.Zhang BA DEM-one-CLF very-wide-open ADN car give PERF Mr.Wang
Intended: 'Mr. Zhang gave a very big car to Mr. Wang.' (Polinsky 2018: 217)

Baseline speakers rated sentences with classifier-noun mismatches significantly lower compared to those with classifer-noun matches. Heritage speakers, on the other hand, do not distinguish between matching and mismatching conditions: They rate both conditions very high, suggesting that they are not sensitive to the mismatch. This suggests that the distance between two discontinuous elements matters, quite similarly to what is known from morphology and agreement-dependencies (see Putnam, Schwarz and Hoffman this volume).

5. Conclusion

In this chapter, we have have reviewed some of the main findings stemming from work on the syntax of heritage grammars. The core properties of syntax are relatively resilient, although this is not the case when additional factors come into play, as in the case of long-distance dependencies (where speakers seek to reduce the distance as much as possible) or the certain aspects of word order (where the possible options are reduced or eliminated). More generally, studying the syntax of heritage speakers allows us to probe the nature of grammatical representations and better understand the plasticity of such representations, which in turn contributes valuable data to linguistic theorizing (Lohndal, Rothman, Kupisch and Westergaard 2019). In particular, the resilience of syntax can be modeled by adopting an exoskeletal approach to grammar (Borer 2005 a,b, Lohndal 2014, Grimstad 2019, Riksem 2019), whereby syntactic structures are independent of morphological exponents. As Putnam, Schwarz and Hoffman (this volume) highlight, the structural tendencies in heritage morphology also support an architecture whereby morphological processes follow those that generate syntactic structures. Taken together, studying the grammar of heritage languages offers exciting avenues for improving our theoretical models of possible human languages.

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