

*Lost in transmission: the role of attrition  
and input in heritage language  
development*

Book

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**Two sides of one coin? The relevance of first language attrition for the acquisition of  
heritage languages**

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The current volume brings together insights from two different, but related fields of bilingualism, namely acquisition and attrition of speakers' first languages in immigration contexts. Although it seems intuitively plausible to link first language attrition, i.e. the "forgetting" of one's first language in an immigrant setting, with the acquisition of minority languages by later generations of immigrants, only very recently have scholars started to empirically investigate how language maintenance and change within the first generation impact on the acquisition of language(s) by representatives of subsequent generations in the new host community.

Language attrition refers to the "the non-pathological decrease in a language that had previously been acquired by an individual" (Köpke & Schmid 2004: 5). Thus, first language attrition deals with the temporary or permanent loss of aspects of a native language (L1) by an individual which is triggered mostly due to a change in the linguistic environment or behavior of the speaker. The vast majority of research in L1 attrition concerns late sequential adult bilinguals who left their home country in adulthood (see Schmid & Köpke 2007; Schmid 2011, 2013). Due to the new second language (L2) environment and the need to acquire a new language, the individual experiences a more or less rapid decrease in the relative use of his/her native language. As an eventual consequence of this reduced input and output in the L1, and co-activation of the L1 and the L2, the native language can undergo substantial changes at all linguistic levels (e.g. phonology, morphosyntax, lexicon, semantics, pragmatics, narrative conventions), in reception as well production (Pavlenko 2004). Whether or not the term attrition should be used to refer only to permanent traces of the L2 in the L1 is controversial. According to Schmid and Köpke (2017) there is a continuum between online/transient and representational/permanent effects of the L2 on the L1, and establishing distinct stages on this continuum is not possible. Therefore, Schmid and Köpke suggest that every bilingual is in fact an L1 attriter.

Even bilinguals who had extensive access to the L1 until adulthood can be seen as “non-native speakers” of his/her native language by monolingual peers. These judgments are “generally based on observed difficulties with lexical retrieval, the use of codeswitching to fill lexical gaps, divergent pronunciation, morphological errors, avoidance of certain structures, and overuse of other structures due to transfer” (Benmamoun, Montrul & Polinsky 2013: 132). However, L1 attrition may already begin in childhood and can be more pronounced if immigration happens before puberty (that is, up to the age of 12). Numerous studies have shown that in the case of child L1 attrition the extent and speed of the loss of structural aspects in the L1 is more severe than in the case of adults who had grown up with only the L1 before emigration (cf. Bylund 2009; Flores 2010, 2012; Montrul 2008 or Pallier 2007).

A gradual shift from one’s native language to the majority language of the surrounding community is also a typical feature of heritage speakers. According to one of the many definitions,

a heritage speaker is an early bilingual who grew up hearing (and speaking) the heritage language (L1) and the majority language (L2) either simultaneously or sequentially in early childhood (that is, roughly up to age 5 [. . .]), but for whom L2 became the primary language at some point during childhood (at, around, or after the onset of schooling). As a result of language shift, by early adulthood a heritage speaker can be strongly dominant in the majority language, while the heritage language will now be the weaker language. (Benmamoun, Montrul & Polinsky 2013: 133)

Thus, L1 attrition is one of the processes that shape the development of the heritage language and the linguistic profile of heritage speakers over their lifespan. However, in contrast to research on L1 attrition, which is mostly concerned with the native language of bilingual speakers who started learning the language of their new host community only as adults, the

focus of heritage language research is on simultaneous and/or early sequential bilinguals who were either already born in the host community or immigrated at a very early age, normally before the onset of schooling. (cf., among many others, Kupisch & Rothman 2018; Montrul 2008, 2016; Polinsky 2018; Rothman 2007, 2009; Rothman & Treffers-Daller 2014). Heritage speakers receive reduced input in the heritage language, as this language is generally used within the family only, while the societally dominant language is used for most other domains. Furthermore, heritage speakers often receive no institutional support for the development of their heritage language, as schooling normally takes place exclusively in the majority language. Consequently, the acquisition of literacy skills or structural aspects of the heritage language which are restricted to formal registers of language use depends on measures that the parents undertake to maintain the heritage language in the family or on the possibility to attend heritage language classes (see Dąbrowska 2013; Kupisch 2013). Given the complex circumstances shaping the process of heritage language acquisition and the multitude of factors involved therein (cf. Montrul 2016; Polinsky 2018 for an overview), there is extensive interindividual variability with regard to proficiency in the heritage language. Polinsky & Kagan (2007) capture this variability by proposing a continuum ranging from basilectal (=low-proficient) heritage speakers who often have only receptive skills in their heritage language to acrolectal (= high-proficient) heritage speakers who are hardly distinguishable from monolingual peers, except for their familiarity with formal registers in the heritage language.

A common trait of both L1 attriters and heritage speakers is that, despite the huge amount of variation between individual heritage speakers they differ in some respect from monolinguals. In the case of late sequential bilinguals access to L1 lexical items and grammatical structures may be weakened or even lost after several years of reduced exposure to and use of the L1. In those cases where these had been acquired at an earlier stage this process can be considered as language attrition. Furthermore, transfer from structures of the functionally dominant L2 to the L1 is a common by-product of language attrition, leading to convergence

between the two languages. However, proving that the speakers had mastered the structure under focus before the attrition process began is difficult if data are collected at one point in time only. The best way to prove that attrition is at stake is to conduct longitudinal within group studies. Another possible way is to compare child heritage speakers with adult heritage speakers living in the same community. If the property under focus is attested in the younger heritage speakers (e.g. between the ages of 4-6), but not in the older ones (e.g. between the ages of 15-20), attrition is likely to have occurred in the older group. However, given the reduced and variable amount of input in the heritage language, it could also be the case that input was quantitatively not sufficient to establish a stable command of a given property in the heritage language. This is a likely outcome especially with items or properties that are infrequent in the parental input or bound to certain formal registers of the heritage language (e.g. passive constructions or structures related to literacy skills). At best, the speakers catch up with these developmental delays at later ages compared to monolingual controls. Otherwise this leads to what has been called “incomplete” or “arrested” acquisition of the heritage language (cf. Montrul 2008; Polinsky 2006, 2008), resulting in non-native-like attainment in the heritage language with regard to the respective structures<sup>1</sup>. Transfer from the functionally (and often also structurally) dominant majority language might be another factor that accounts for the patterns found among heritage speakers. However, the question arises whether these transfers can be directly traced back to processing problems in inhibiting the majority language on the side of the heritage speakers, or whether the transferred structures were already part of the parental input they receive. This brings us back to the relationship between L1 attrition and heritage language acquisition.

The crucial point here is that input in the heritage language is usually provided by parents who are themselves (late sequential) bilinguals. Whereas the “incomplete acquisition”

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<sup>1</sup> For a substantial criticism on the term “incomplete acquisition” see, among others, Kupisch & Rothman (2018).

and the “attrition” accounts for non-native-like attainment rely on the assumption that the quality of input the heritage speakers receive resembles monolingual acquisition (in contrast to the quantity of input, which is severely reduced, as mentioned earlier), the “input quality approach” (cf. Rothman 2007; Pires & Rothman 2009; Pascual y Cabo & Rothman 2012) challenges the notion that the linguistic structures available to heritage speakers in their input always conform to the standard variety that monolinguals have access to. Thus, heritage speakers depend on input primarily from their parents. This input might already differ from monolingual varieties because of L1 attrition, cross-linguistic influence or general diachronic language change which might build on changes already extant in monolingual speech, but accelerated due to the lack of exposure to normative (written) standards (cf. Silva-Corvalán 1994). Following the “input quality approach”, data from first generation immigrants (or any preceding generation) need to be taken into account when analyzing structures in heritage languages and establishing the variety that heritage speakers were exposed to. This is where research on L1 attrition and heritage linguistics complement each other.

It is for these reasons that the current volume focuses on issues concerning the role of L1 attrition in the speech of first generation immigrants and its implications for heritage language acquisition. Based on empirical evidence from a variety of heritage speaker contexts, the papers provide new insights into either attrition of the L1 among late sequential bilinguals and its impact on the proficiency of second generation heritage speakers or new insights into the role of different factors relating to quantity and quality of input in heritage language acquisition. The volume therefore contributes to the description and explanation of differences in the outcomes of heritage language acquisition and monolingual as well as foreign language acquisition. By taking into account different potential sources of variability in the development of heritage languages (e.g. cross-generational attrition, cross-linguistic influence in input, quantity of input, “incomplete acquisition”, frequency and interface effects, sociolinguistic factors) the volume tries to disentangle these factors with regard to their impact on heritage



language acquisition. As discussed in this introduction, all these factors can influence heritage language acquisition either in parallel or at different developmental stages. Furthermore, they can affect individual properties and structures of the heritage language as a whole (cf. Montrul 2008).

The individual contributions cover a wide range of typologically different heritage languages, including Romance (Spanish), Slavic (Russian) and Germanic languages (German, Norwegian) as well as Albanian, Turkish and Chinese as important immigrant languages in different European and North-American contexts. The presence of papers dedicated to the same heritage languages, but targeting heritage speaker communities in different countries (e.g. Turkish in the UK and Germany), as well as different heritage languages spoken in the same host community (e.g. Turkish and Russian as heritage languages in Germany) allows for cross-linguistic comparisons between different heritage language communities in the same linguistic environment and for comparisons regarding the effects of different majority languages on the same heritage language.

The volume starts with a set of three papers that directly compare the structural features under focus both in first generation immigrants (late sequential bilinguals) and heritage speakers. **Aalberse, Andringa, Faber & Lippe** investigate overt marking of definiteness on nouns referring to referents previously mentioned in the discourse among two generations of speakers of Wenzhounese Chinese in China and the Netherlands (parents and their children). Their data show an increase especially in the use of demonstrative constructions among second generation speakers of Wenzhounese Chinese, both in the homeland and in the Netherlands. Thus, the overuse of definiteness markers turns out to be the result of a generation rather than a location effect. Their results therefore point to the fact that the observed innovations cannot be solely due to language contact with Dutch (where overt definiteness marking is obligatory) or – in the case of heritage speakers in the Netherlands – to attrited input received from the first generation, but reflect more general internally motivated changes which might be accelerated

in a heritage setting. However, the authors also consider the possibility of a heritage scenario for both second generation speakers in China and the Netherlands, as Wenzhounese is also spoken less often in China. Reduced input and use of Wenzhounese by second generation speakers could be a factor which affects definiteness marking in both locations and leads to parallel changes in the way definiteness is encoded (e.g. by preferring more explicit demonstrative constructions instead of neutralizing tone distinctions). Cross-generational data are also analyzed in the contribution of **Tuğba Karayayla**. By comparing data from both adult heritage speakers and first generation immigrants from Turkey in the UK to data from monolingual Turkish controls she explicitly puts to test the “input quality approach” described above. The feature under investigation is the marking of evidentiality in Turkish. Karayayla finds that the input the heritage speakers receive from the first generation immigrants regarding evidentials seems not to differ from monolingual input. However, the performance of heritage speakers in the application of indirect evidential structures clearly differs from that of monolinguals. In contrast to both the monolingual controls and the late bilinguals (= first generation immigrants) they extend the use of direct evidentials also to non-witnessed contexts. Hence qualitatively different input which was provided by first generation immigrants cannot be the source of the phenomena attested in the data of the heritage speakers. To account for the findings among at least some heritage speakers, Karayayla looks at the effect of L1 input reductions over time on heritage speakers’ accuracy in the use of indirect evidential structures in Turkish. The analysis reveals that less frequent L1 experience (input and output) before the age of 5 together with a richer L2 environment led to lower accuracy in evidentials by the respective heritage speakers. Karayayla thus concludes that the development of these heritage speakers was presumably never age-appropriate and they did not catch up with the more proficient heritage speakers at later stages, even if the presence of the L2 was weaker during their school years. Sufficient L1 experience in early childhood is thus crucial for the acquisition and long-term maintenance of evidentials in heritage Turkish. The third chapter by **David**

**Giancaspro** compares heritage speakers of Spanish in the US to what he calls “Spanish-dominant controls”, i.e. native speakers of Spanish who immigrated to the US after the age of 13 (= late bilinguals). Building on previous research concerning the tendency of heritage speakers of Spanish to produce fewer subjunctive mood forms by comparison with late bilinguals and/or monolinguals, Giancaspro shows that the replacement of lexically-selected subjunctive mood morphology by indicative forms is related to gaps in lexical rather than morphosyntactic knowledge. He conducts two experiments on the production and acceptability of lexically-selected subjunctive mood forms (or non-target indicative forms) following the complementizer *para que* in Spanish with both groups of Spanish-English bilinguals. The results obtained in both tasks reveal that despite a high general degree of accuracy with subjunctive mood, highly proficient heritage speakers are still significantly less accurate than Spanish-dominant controls, but only with lower frequency verbs. Thus, Giancaspro treats these results as evidence for the importance of the lexical frequency of verbs triggering intensional subjunctive mood with *para que* in Spanish. Given the reduced input that heritage speakers receive in their heritage language, they might fail to instantiate subjunctive mood features with verbs that occur infrequently in their Spanish input.

Frequency of structures is also a key topic that is investigated in the next set of five chapters. These focus on factors that shape heritage language acquisition, and most are more or less directly associated with the input that heritage speakers are exposed to. **Anderssen & Westergaard** investigate one specific aspect of word order in heritage Norwegian spoken in the US, namely the positioning of subjects and objects in relation to negation markers. Informationally given pronominal subjects and objects generally occur in front of the negation marker in Norwegian (subject/object shift), although object shift is subjected to more structural constraints than subject shift. The authors examine the influence of two factors on the frequency of subject and object shift in heritage Norwegian: (a) structural similarity or difference in comparison to structures of the surrounding majority language, (b) frequency of occurrence.

They use the Corpus of American-Norwegian Speech which contains data from 50 (mostly very old) heritage speakers of Norwegian who belong to the second, third or even fourth generation of Norwegian immigrants to the US. The presence of subject and object shift in this corpus is compared to corpora of monolingual Norwegian speech from the same dialectal background. The analysis reveals that both subject and object shift, despite their differing frequency of occurrence in monolingual Norwegian, are affected by restructuring in heritage Norwegian, thus indicating that frequency does not play a major role in the maintenance of these structures. Structural similarity between the heritage and surrounding majority language, however, seems to trigger changes in the heritage language: Complete structural overlap, i.e. when word order options are the same for both languages, leads to cross-linguistic influence regardless of the proficiency level in the heritage language. In this case, the word order which is preferred in English (but not in Norwegian) gets to be used more frequently by comparison with monolingual controls. **Jessica Diebowski's** paper deals with another key variable for heritage language acquisition, namely the amount of use of the heritage language. She investigates data on the accuracy of gender assignment and gender agreement in Spanish and compares adult heritage speakers of Spanish living in the US (simultaneous bilinguals) to advanced English-speaking second language learners of Spanish. Her findings show that heritage speakers of Spanish perform at ceiling with regard to gender accuracy in written comprehension as well as oral production tasks, irrespective of the frequency of use of their heritage language. This stands in sharp contrast to adult L2 learners of Spanish, where the extent of exposure to and use of Spanish turned out to be a crucial factor for determining the success of gender acquisition in the L2. However, all informants were enrolled in Spanish-language classes (but not specific heritage speaker classes) which could account for the overall high accuracy of gender assignment and agreement in both groups and the equal distribution of heritage speakers irrespective of their amount of use of the heritage language.

A large number of factors and their impact on lexical proficiency in the heritage language is investigated in the paper of **Montanari, Abel, Tschudinovski & Graßer**. The authors look at effects of the amount of exposure to (= quantity of input) and use (= output) of the heritage language as well as socio-economic status and educational level of the parents and language dominance on the development of expressive and receptive vocabulary in children with Russian and Turkish as heritage languages in Germany. One goal is to compare the two heritage speaker communities with regard to vocabulary size in the heritage language and the relevance of the above mentioned factors for lexical development in the heritage language. They tested overall 211 children (113 speakers of Russian and 98 speakers of Turkish) between the ages 6 and 10 by using a standardized picture naming task. The data reveal a good level of receptive vocabulary knowledge, but a limited expressive command of the test items. As usual in heritage language research, the authors point to a high level of interindividual variability. Both groups, however, displayed at best only a moderate development in lexical proficiency when the different age groups were compared. Furthermore, there is a systematic difference between the Russian and the Turkish-speaking groups which is accounted for by some of the social and pragmatic factors investigated in the study. A remarkable result of the comparison between the two heritage language communities is that whereas some of the investigated background variables yield the same effects for both groups (e.g. mother's proficiency in the heritage language), others show a diverging direction of impact on vocabulary knowledge (e.g. input patterns, institutional support of the heritage language or parents' highest level of education). The authors conclude that the degree of established networks (e.g. intense intergenerational contacts) and other social factors might contribute to the variability in outcomes of vocabulary acquisition among the two groups.

The diversity of sources of input in the heritage languages, especially access to written sources thanks to the availability of literacy skills, is the key factor under focus in the chapter by **Andreou, Dosi, Papadopoulo & Tsimpli**. They use a Sentence Repetition Task in order to

explore the effects of biliteracy on the development of grammar and vocabulary in Albanian as a heritage language. Three different groups of children (aged 8-12) were investigated: (i) heritage speakers of Albanian living in Greece who do not receive institutional support in their heritage language and are thus monoliterate in the dominant language Greek, (ii) heritage speakers of Albanian living in Greece who receive written language support in Albanian (outside school) and are thus biliterate in Greek and Albanian, (iii) a control group of Albanian-Greek bilingual children who were born in Greece to Albanian-speaking families who later returned to Albania, but the children attended school in Greece and are therefore also biliterate. Data were collected in both languages, i.e. Greek and Albanian, and included elaborate questionnaires on literacy acquisition and language use. Besides the Sentence Repetition Task for Albanian and Greek, the children also carried out tasks targeting expressive vocabulary knowledge, non-verbal intelligence as well as verbal and non-verbal working memory. From a methodological point of view, the most important result of the study is that the children's (verbal and non-verbal) working memory abilities did not predict their performance in the Sentence Repetition Task which underscores the suitability of this type of task for investigating linguistic proficiencies and not just memory skills of (bilingual) speakers. Factors like vocabulary knowledge or age (for L2 grammaticality score only) turned out to explain some variance in task performance. With regard to the grammaticality scores in Albanian, the three groups did not differ. However, differences were found between both heritage speaker groups and the group living in an Albanian environment regarding the ability to accurately repeat the sentences heard. The latter group outperformed both heritage speaker groups with regard to accuracy. The impact of L1 literacy (i.e. biliteracy in the heritage language context) on task performance turned out to be most prominent in the results of the verbal working memory task and the grammaticality scores in the L2 Greek (!). Here the heritage speaker group who received no support in the L1 Albanian scored significantly worse if compared to the other two groups. The authors treat this result as evidence for the validity of the Interdependence Hypothesis put

forward by Cummins (see, e.g., Cummins 2001) which claims linguistic as well as cognitive benefits of bilingual children if they receive institutional support in both of their languages.

The starting point of **Elif Krause's** paper is the well-known Interface Hypothesis (cf. Sorace & Serratrice 2009; Sorace 2011). She tests the prediction that structures involving interfaces between different cognitive domains are more problematic for bilingual language processing than structures that belong to one level only (e.g., syntax, morphosyntax, phonology, pragmatics etc.). The specific focus of the study is optional verb number marking in Turkish. Two different experiments are set up in order to check for effects of the semantics-morphosyntax and pragmatics-morphosyntax interfaces in producing the same structure under focus by Turkish heritage speakers in Germany. The use of plural markers on the verb in Turkish depends on semantic (animacy) as well as pragmatic (givenness) properties of the subject referents which makes them an ideal testing field for investigating interface effects. Krause uses grammaticality judgments by applying the Magnitude Estimation technique for data gathering. The results reveal that the sensitivity to animacy and givenness constraints in choosing overt plural marking on the verb is different for heritage speakers and age and education-matched monolingual controls. Thus, the heritage speakers applied a finer-grained analysis e.g. of animacy levels of the subject referents when deciding about the appropriateness of overt plural marking on the verb if compared to the monolinguals. However, this does not lead to an overrating of overt plural marking on the verb by the heritage speakers which would have been expected if cross-linguistic influence had been a relevant factor. The same tendency also applies to the pragmatic factor investigated in the second experiment, i.e. givenness of the plural subject. Here the bilinguals showed a finer distinction between different levels of givenness than the monolinguals. Thus, heritage speakers behave differently if compared to monolinguals in being 'hyper-sensitive' with regard to single semantic and pragmatic properties of the plural subjects that constrain the use of overt plural marking on the verb. However, they

were as accurate as the monolinguals in contexts where overt plural marking was categorically impossible in monolingual Turkish. This applies to both interface types.

The last series of chapters exclusively deals with aspects of L1 attrition, but takes into account the effects that L1 attrition can have on the acquisition of minority languages by subsequent generations. **Esther de Leeuw**'s paper looks at attrition effects in prosody in a group of L1 speakers of German living in Canada. More specifically, she investigates pitch level and pitch span in German and English by ten late sequential German-English bilinguals in comparison to a German and a Canadian English monolingual control group. The bilinguals emigrated from Germany to Canada as adults and had been living in the Vancouver area for an average of 40 years, yet they constitute classical candidates for L1 attrition. The data show that male German L1 speakers in Canada have on average a higher pitch level and a wider pitch span in both languages if compared to monolingual controls. Given the fact that pitch level is already higher in male monolingual speakers of German if compared to English, this finding is surprising as it contradicts the expected lowering of pitch levels in German by bilingual speakers due to the influence of the majority language English. De Leeuw suggests this increase in pitch level differences is related to the social significance of pitch level alternations: According to some theories, a high pitch level is universally associated with friendly and non-aggressive behavior, whereas lower pitch levels characterize dominant and/or aggressive individuals. Bearing in mind the historically motivated low prestige of Germans in Canada as potential "enemies" associated with the Nazi regime and World War II, de Leeuw identifies the need to boost the image of the speakers as a possible motivation for pitch level raising, leading to non-monolingual like behavior in both languages. Social implications of pitch level and pitch span would thus be considered more important and desirable than the acquisition (L2 English) or maintenance (L1 German) of monolingual-like features of prosody. For women, however, both tendencies (convergence with the majority language and social indexing via prosody) go hand in hand, leading to higher pitch level and wider pitch span by comparison with L1 German



norms and to an approximation (but still not native-like attainment) of the L2 English norms. De Leeuw concludes that her study shows that the political and social embedding of the bilingual community in the host country can also play a significant role in shaping outcomes of L1 attrition and L2 acquisition. The final chapter by **Shi Zhang** represents a pilot study on the potential attrition of perfective and durative aspect marking in Mandarin spoken by Chinese immigrants who moved to the UK as literate adults and had lived there for an extended period of time ( $\geq 7$  years) at the moment of data collection. Zhang looks at the interaction between lexical and grammatical aspect in Mandarin Chinese by investigating the acceptability of the perfective marker *le* and the durative marker *zhe* in combination with exponents of different lexical aspects. The data gained via an acceptability judgment task with 14 Mandarin-English bilingual speakers and 23 monolinguals from Mainland China showed no clear signs of L1 attrition in the domain of perfective and durative aspect marking on the part of the bilingual speakers. The author interprets these results as in accordance with the Interface Hypothesis, as aspect marking in Mandarin Chinese only involves an internal interface (syntax-lexicon) which proved to be less problematic for bilingual speakers by comparison with phenomena which involve external interfaces between syntax and other cognitive domains (cf. Sorace 2011).

The papers gathered in this volume provide ample evidence for the importance of distinguishing between the standard varieties that (most) monolingual speakers acquire in the homeland and the varieties that heritage speakers are exposed to in the host countries. However, the “input quality approach” does not necessarily account for all characteristics of heritage grammars and heritage lexicons. As shown in the papers of this volume, heritage language acquisition is shaped by a multitude of factors, including the social and political embedding of a heritage speaker community in the host community. This is what makes heritage languages a fascinating object of research, although we are just beginning to understand some of the basic mechanisms that shape their development.

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