Heritage languages, infants' language recognition, and artificial grammars for bilingualism research

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This issue of *BLC* comprises three special sections: (i) a KEYNOTE ARTICLE on bilingual heritage speakers (Polinsky & Scontras, 2020a) plus 14 commentaries and an authors' response to the commentaries (Polinsky & Scontras, 2020b), (ii) a REVIEW ARTICLE (Höhle, Bijeljac-Babic & Nazzi, 2020) on bilingual infants' speech perception and word recognition, and (iii) a themed section on the use of artificial language paradigms for bilingualism research (Weiss, 2020).

Heritage speakers are usually described as bilingual individuals who were raised in homes where a language (= the heritage language) other than the dominant community language is spoken. This is the case, for example, for children of immigrants who are initially exposed to their family's language at home, and to the language of the host country typically later in life. The study of heritage speakers offers an excellent opportunity to test hypotheses relating to the role of exposure and practice in bilinguals' language performance. Heritage languages show what is robust or stable under adverse input conditions and what undergoes change when input to a language is diminished or even disrupted. In their keynote article, Polinsky and Scontras (2020a) provide an overview of empirical findings and theoretical claims from heritage language studies, showing, for example, that heritage grammars tend to have reduced ('slimmed-down') inflectional-morphology systems (relative to a baseline language) and that heritage speakers commonly overapply inflectional rules – 'a resistance to irregularity' as Polinsky and Scontras (2020a) put it. They argue that this and other characteristics of heritage languages, such as difficulties with long-distance dependencies and with interpreting sentences with null elements or with otherwise unusual, nuanced readings are due to essentially two factors: (i) reduced access to input from which the heritage language is acquired and (ii) limitations of online resources for processing a non-dominant language.

Fourteen commentaries representing different perspectives on heritage language studies accompany the keynote article. Most of the commentators praise the keynote article for the overview presented and the authors' attempt at developing a theoretical model of heritage language grammars. Several commentators have extended the topics raised in the keynote with additional observations and arguments. Commentators have also raised criticisms of the proposed account and pointed out some theoretical and empirical limitations. The role of reduced access to input as a potential source for the particular properties of heritage language is raised and discussed in a number of commentaries, from different perspectives. Montrul and Mason (2020) and Pearl (2020) point out how reduced input may yield morphological overregularizations. Meisel (2020) argues that the precise role of input for language acquisition is largely unknown, and Serratrice (2020) claims that in addition to the input, a child's own particular patterns of language use are relevant for understanding heritage languages. Flores and Rinke (2020) note that due to the particular 'colloquial' input heritage speakers are exposed to, heritage grammars are more likely to retain characteristics of non-standard varieties. Embick, White and Tamminga (2020) as well as Valian (2020) observe that variability in a learner's input may be hugely beneficial for successful language acquisition, as shown in other studies, and that heritage speakers typically receive input from a limited number of speakers, which may account for some of the divergence between heritage and standard grammars. A second topic covered in a number of commentaries concerns Polinsky and Scontras' (2020a) proposal that properties of heritage language grammars may be due to limited processing resources. Sekerina and Laurinavichyute (2020) present one of their earlier experiments with heritage speakers, but leave open the question of whether the findings are due to limited processing resources. Felser (2020) points out that empirical evidence for the keynote article's conjecture concerning online resource limitations is currently lacking, and Gürel (2020) notes that Polinsky and Scontras' (2020a) proposal does not discuss how 'processing resources' might explain differences between monolinguals and heritage speakers. Other commentators observe crucial gaps in the keynote's overview of heritage language features. Muysken (2020) notes that the role of transfer in heritage languages has not been satisfactorily addressed in the keynote article, and Kupisch (2020) argues against the keynote note's claim that phonetics/phonology are robust in heritage languages by showing that these systems are affected as much as other aspects of language are in heritage speakers. Finally, two commentators take issue with the

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notion of 'shrinking syntactic structure' in heritage speakers. Lohndal (2020) argues that 'restructuring' might be a more appropriate notion. Putnam (2020) is also critical of the notion of shrinking structure and suggests instead distinguishing between grammatical features (e.g., case) and syntactic structures in heritage language grammars. In their response, Polinsky and Scontras (2020b) offer an in-depth discussion of the issues raised by the commentators. Taken together, this keynote article, the commentaries, and the authors' response present a view of not only the affected ('vulnerable') aspects of the heritage grammar, but also of those ones which remain relatively stable and resistant to limited input and other potentially adverse elements of language learning under heritage conditions.

The second special article in this issue (Höhle et al., 2020) also addresses the broad topic of variability and stability of language acquisition: in this case, with respect to speech perception and word recognition in bilingual infants. Höhle et al. present an up-to-date research review reporting that bilingual infants – despite receiving less input for a given language than a monolingual infant learning the same language – perform largely similar to monolingual infants. Höhle et al. point out that this is not what would be expected from input-driven learning mechanisms, but instead conclude that language acquisition mechanisms are robust and stable enough to allow the infant to learn the core properties of two languages in parallel, without any major disruptions compared to monolingual acquisition.

The third special topic covered in this issue comprises four review articles describing how studies of artificial languages (AL) inform questions related to bilingualism and second language acquisition, put together by our guest editor Daniel Weiss. As Weiss (2020) notes in his introduction, ALs are a useful tool for bilingualism researchers as they provide for 'test tube models' for natural language acquisition. The themed section includes articles on the use of ALs for the study of (a) bilingual word learning (Hayakawa, Ning & Marian, 2020), (b) grammar and morphosyntactic processing in bilinguals (Grey, 2020), (c) neuro-cognitive aspects of language learning (specifically grammar) in bilinguals (Morgan-Short, 2020), and finally, (d) the role of distributional information and other aspects of statistical learning in bilinguals (Weiss, Schwob & Lebkuecher, 2020). Taken together, this themed section provides not only an introduction into how AL can be applied to bilingualism research, but should also promote the use of AL paradigms in future research.

We hope our readers will enjoy the three special sections as well as the interesting regular research articles presented in the current issue.

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