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Abstract

Research interest in heritage speakers and their patterns of bilingual development has grown substantially over the last decade, prompting sign language researchers to consider how the concepts of heritage language and heritage speakers apply in the Deaf community. This overview builds on previous proposals that ASL and other natural sign languages qualify as heritage languages for many individuals raised in Deaf, signing families. Specifically, we submit that Codas and Deaf cochlear implant users from Deaf families (DDCI) are heritage signers, parallel to heritage speakers in spoken language communities. We support this proposal by pointing out developmental patterns that are similar across children who are bilingual in a minority home language and a dominant majority language, regardless of modality. This overview also addresses the complex challenge of determining whether unique patterns displayed by heritage speakers/signers in their home language reflect incomplete acquisition, acquisition followed by attrition, or divergent acquisition. The themes summarized in this article serve as an introduction to subsequent papers in this special issue on heritage signers.

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The Immense Value and Challenges of Heritage Language Studies

THIS SPECIAL ISSUE of *Sign Language Studies* is the result of a panel on heritage signers hosted by the Department of Linguistics at Gallaudet University in the spring of 2016. Heritage bilingualism is a special form of bilingualism that involves a minority home language and a majority language of the greater community. Heritage bilinguals typically begin life immersed in their home language and are considered native speakers, but they quickly become dominant in the majority language. The minority status of their home language, combined with limited exposure to it outside the home, and schooling in the majority language lead to developmental patterns that differ quite strikingly from those of comparison monolinguals. Development of the majority language may also diverge from what is observed for other speakers due to the fact that heritage bilinguals may have limited exposure to that language prior to school age and are native speakers of another language.

The study of heritage bilinguals offers valuable insights into which grammatical aspects can be acquired with limited or delayed input, which ones are acquired more slowly than by other bilinguals, and which ones are not acquired, even despite early exposure. Recognition of heritage bilinguals and their unique developmental trends is also important for developing educational policies (e.g., second-language classes that take into account the different needs of heritage speaker students versus students with no prior experience with the target language) and strategies for supporting and maintaining heritage languages at home, especially for endangered minority languages. The articles in this special issue address all of these issues within the context of heritage sign language users.

Although variation is a hallmark of heritage bilingualism, researchers have recently begun to identify basic patterns (phonological, morphological, lexical, syntactic, and pragmatic) in language development that recur among heritage bilinguals who are acquiring a variety of language pairs (Benmamoun, Montrul, and Polinsky 2013). The gaps noted for heritage language competence in these areas raise challenging questions as to how they should be interpreted. Among adult heritage speakers, gaps may indicate *incomplete acquisition*, *acquisition*

followed by attrition, or divergent acquisition (Pires and Rothman 2009). In all of these cases the gap is presumably related to the exposure that heritage speakers receive in the target language, which is more limited than that received by nonheritage speakers (appropriate comparison groups are discussed later). Among young bilinguals who are still developing their grammars, the same three possible interpretations exist for observed gaps in competence, in addition to a fourth possibility, *delayed acquisition*. In the case of delayed acquisition, we might expect heritage speakers to eventually resemble other speakers of the target language, provided they eventually experience sufficient language input. Alternatively, in the case of divergent acquisition, heritage speakers are not behind in their development of the grammatical phenomenon in question; instead, they are following a development course that is altogether different from that of other speakers. If that is the case, we would expect heritage speakers' grammatical differences from their nonheritage counterparts to persist even into adulthood. The distinction between delayed, incomplete, and divergent grammatical development is an important one, but unfortunately few studies track participants long enough to distinguish between them. For this reason, some researchers (e.g., Benmamoun, Montrul, and Polinsky 2013) advocate combining studies of child and adult heritage speakers to allow a rough extrapolation of the developmental time course. If there is evidence that heritage speakers had acquired a grammatical feature during childhood that is later absent in the adult group, this would point to attrition rather than to incomplete acquisition. If evidence suggests that adult heritage speakers control a grammatical feature that is unexpectedly absent among younger heritage speakers, either divergent or delayed acquisition may be at work. Finally, if there is no evidence of a grammatical feature in either child or adult heritage speakers, incomplete acquisition would be a reasonable explanation. Note that this interpretation presupposes that a heritage speaker's language input "provided sufficient data to trigger acquisition of a property that ends up not being acquired for other reasons" (Pires and Rothman 2009, 214). This may not be the case if grammatical features of their heritage language input (from first-generation immigrant speakers) have already shifted away from monolingual norms (Montrul and Sánchez-Walker 2013).

A further challenge for studies of heritage bilinguals is the identification of appropriate comparison groups. The vast majority of research on heritage speakers compare them to monolingual speakers of the target language. This pairing is inappropriate, given the pervasive effects of bilingualism that have been documented for language acquisition and processing throughout the lifespan (Montrul 2010). The ideal comparison group for heritage bilinguals should also be bilingual in the same two languages, but with exposure to both languages that more closely approximates that of “typical” learners. For instance, the Spanish development of English-Spanish bilinguals in the United States who have Spanish as a heritage language (i.e., with exposure limited to home contexts and disproportionate exposure to English) is most appropriately compared with the development of English-Spanish bilinguals who experience a more balanced exposure to both languages in a variety of contexts, both inside and outside the home. First-generation immigrant bilinguals have been suggested as controls (Cabo and Rothman 2012), as their experience with English may have already led to grammatical aspects of their Spanish that diverge from those of monolingual speakers; this variation is then present in the input that Heritage Spanish speakers receive from first-generation immigrants and may account for some of the patterns associated with Heritage Spanish. Alternatively, controls might be heritage bilinguals in the opposite context (i.e., English-Spanish bilinguals who have English as a heritage language in a majority Spanish environment). Either way, adopting a bilingual Spanish-English baseline is critical for accurate analyses of the effects of learning Spanish in a heritage context.

Sign Language Development in Heritage versus Nonheritage Contexts

The phenomenon of heritage bilingualism is typically studied in the context of hearing children in immigrant communities or indigenous communities where a minority language is spoken. However, the concept of heritage bilingualism applies equally well to Deaf communities that use a naturally occurring visual gestural language such as American Sign Language (ASL). Many children born to Deaf parents are immersed in a (minority) sign language environment during early

childhood, but their input shifts dramatically to the (majority) spoken language once the children enter school. Compton (2014) adopts the broad sociocultural view that all ASL users are *heritage signers*, including all Deaf, hard of hearing, hearing native, and hearing nonnative signers, by virtue of ASL's minority language status. For this issue, we adopt a narrower focus of heritage signers adapted from previous work on heritage language development for spoken languages. The two main criteria for this grouping are as follows: (1) The child's parents are fluent users of sign language, and (2) the child does not receive formative education in the home sign language. In light of these criteria, our definition of *heritage signers* includes hearing children raised by Deaf, signing parents (Codas or Kodas) and some deaf children that receive cochlear implants at a young age who are raised by Deaf, signing parents (DDCI). This definition extends through the heritage signer articles in this issue. In previous work, we have categorized both groups as native signer *bimodal bilinguals* (e.g., Chen Pichler, Lee, and Lillo-Martin 2014; Lillo-Martin, Quadros, and Chen Pichler 2016). To a varied extent, these children use sign language as a first language primarily in the home and in other community contexts, but, crucially, their formal schooling is not conducted in their home sign language.

Identifying an ideal comparison group for heritage signers is even more difficult than it is for heritage speakers. To our knowledge, there are no communities in which children who are native users of a home spoken language also have a sign language as their dominant language in the community and at school. In the United States, although a few schools that are open to bimodal bilinguals offer instruction in both a signed and a spoken language, the minority status of sign languages in general precludes these students from experiencing their sign language as a majority language comparable in status to spoken English. In the absence of an ideal comparison group for heritage signers, the next best choice would be Deaf bilingual signers who have native signing parents and are attending residential schools that offer a bilingual bicultural educational approach in which sign language is the dominant language of instruction. Thus the exclusion of this group by our criteria for heritage signers is not meant to reject the strong association between Deaf community members and a sign language as the language of their heritage (or, some would say, their birthright).

Rather, it is because we see them as the only available control group for comparison with heritage signers.

Explicit framing of Coda signers as heritage signers has only recently emerged in linguistics publications, focused heavily on ASL (e.g., Compton 2014; Palmer 2015a; Williamson 2015; Isakson 2016; Reynolds 2016). These are predated by studies documenting variation in Coda adults' sign language skills and their use of sign language in the family context (Pizer, Walters, and Meier 2012), as well as preliminary analyses of the various types of code blending produced by Coda adults (Bishop 2010). With respect to sign language development by Coda children, van den Bogaerde (2000) and Petitto et al. (2001) have categorized various types of code-blended structures produced by both Kodas and their Deaf parents involving Sign Language of the Netherlands (NGT) and Québec Sign Language (LSQ), respectively. Both studies noted, first of all, a significant congruency between spoken and signed material in code blends, similar to what has been reported for adult Coda signers (Emmorey et al. 2008), as well as cases in which one language or the other exerted more grammatical influence on the overall structure. However, these early studies did not explicitly recognize their Koda participants as heritage signers, nor did they offer a detailed analysis of the grammatical patterns of Koda signing (in comparison to those of Deaf children). The following subsections highlight several ways in which heritage signers diverge from Deaf controls in their sign language development and discuss how these findings parallel what has been documented in the literature on heritage speakers.

Syntax

Heritage speakers are often characterized as having strong skills in reception and comprehension (Polinsky and Kagan 2007). Anecdotally, Deaf parents report that their hearing, signing children (Kodas) are much more proficient in understanding ASL than they are in producing it, and this asymmetry becomes more pronounced over time. Confirming parental reports, Palmer (2015b) analyzes the results of an ASL Receptive Skills Test administered to thirty-two heritage signers between the ages of 4 and 7. The participants all scored in the normative range (85–115) or slightly above (116 and up) for their age.

Statistical analysis confirmed that, holistically, heritage signers' receptive skills were improving with age as expected. However, a noticeable plateau occurred between the ages of 5 and 6, correlating with the onset of schooling in the dominant language, English. Inspection of the grammatical subscales of the test revealed no particular issue and suggests that the perception of variations in word order is good. However, taken together with production studies (e.g., Palmer 2015a; Lillo-Martin et al. 2012), evidence of a reception-production asymmetry is emerging.

Although syntax is one of the best-studied domains of heritage language development to date, it is still restricted to only a few studies. The literature on heritage speakers broadly claims that syntactic knowledge is more resilient than other linguistic levels (e.g., morphology). This is affirmed by an examination of errors produced by adult heritage signers when reproducing sign language sentences under bottleneck-inducing conditions (Supalla, Hauser, and Bavelier 2014). The heritage signers differed from the native Deaf adult and youth signer groups in producing more phonological, lexical, and morphological errors, whereas no significant difference appeared between the three groups in terms of syntactic errors. In young children who are developing word order competence, heritage signers have been found to produce canonical (basic) word orders in ASL at 23 months, on par with native Deaf controls (Palmer 2015a). Continuing this trend, heritage signers (ages 4;0–7;0) have been found to produce each of the word-order options (i.e., sentence initial, sentence final, doubled) that are permissible with ASL *wh*-questions (Lillo-Martin et al. 2012). These two studies (Palmer 2015a; Lillo-Martin et al. 2012) suggest that heritage signers closely parallel native Deaf controls for basic word-order patterns. However, both studies note divergent patterns when compared closely to native-signing Deaf controls. The early word orders produced by heritage signers included noncanonical types but occurred nearly a year later than the Deaf controls and were too infrequent to satisfy a repeated-use measure (Palmer 2015a). A similar preference was found for sentence-initial *wh*-questions (Lillo-Martin et al. 2012). This was true for all of the heritage signer age groups studied, which contrasted with Deaf controls, who produced proportionally more *wh*-questions in final and doubled positions, especially

after the age of 4;0 (Lillo-Martin et al. 2012). The difficulties noted with noncanonical word order (Palmer 2015a) may not be due merely to syntactic phenomena. For instance, object-verb order in ASL is licensed by various inflected verb types, and inflection morphology has been noted as a problematic area for heritage speakers, perhaps contributing to the low frequency of object-verb order observed in heritage signers' ASL production.

Phonology

It is usually assumed that heritage speakers demonstrate accurate pronunciation and perception of their heritage language phonology even though they may display gaps in other domains. Heritage speakers' control of phonology is especially notable when compared to that of (later) second language (L2) learners, for whom nativelike perception and pronunciation can be a significant challenge. However, closer examination suggests that, even though heritage speakers may outperform L2 learners with respect to the perception of phonological contrasts, the accuracy of their production of these contrasts is affected by the regularity with which heritage speakers actually spoke the heritage language during childhood (as opposed to simply overhearing it) (Oh et al. 2003). Differences between heritage speakers and monolinguals in the area of phonology remains a research topic that is in special need of additional research (Montrul 2010).

Very little research has addressed differences between Deaf native signers and heritage signers in sign language phonology. Anecdotally, an assumption of native phonology appears to exist for heritage signers, as it does for heritage speakers, in the sense that Coda's are often mistaken as Deaf by Deaf interlocutors based on their sign language production (Kantor 1978; Hoffmeister 2008; Pizer et al. 2013). However, these studies do not offer a systematic phonological analysis of Coda signing, so it is difficult to determine the extent to which phonological accuracy in particular contributes to the perception of native Coda signing, as opposed to the skilled use of syntactic, morphological, or lexical patterns of the language. In contrast, one study compares heritage signing children (both Kodas and DDCIs) with Deaf native signing children on their reproduction of pseudo-signs (invented signs structured similarly to actual signs but without

any meaning) (Kozak 2018). The findings indicate that the phonological accuracy of the heritage signers is between 45 percent (for DDCIs) and 49 percent (for Kodas), slightly lower than for the Deaf controls (64 percent) (*ibid.*). The differences between the accuracy averages for the three subgroups are not statistically significant; moreover, the Deaf controls are slightly older than the heritage signer children (*ibid.*). Although the Deaf children are more accurate than both subgroups of heritage signers with regard to handshape and especially location, all three subgroups pattern similarly with respect to a more detailed breakdown of location errors. For instance, a comparable percentage of location errors produced by Koda (70 percent), DDCI (68 percent), and Deaf children (72 percent) involves substituting a midchest or an ipsilateral location for a contralateral location in the target sign. It seems likely, then, that heritage signers share with heritage speakers a level of production accuracy resulting from their native exposure to the phonology of their heritage language.

Lexicon

Heritage speakers may have a smaller vocabulary in their heritage language, and it is often restricted to words that are commonly used at home, as would be expected, given that they often have limited access to other speakers outside the home and may lack educational opportunities in their heritage language. Because simultaneous bilinguals often experience some sets of vocabulary items in only one language, researchers who are studying lexical development in bilinguals find that the total combined vocabulary is a better indicator of language development than vocabulary in one language alone (Hoff et al. 2012). It has also been observed that lexical knowledge correlates with grammatical knowledge in heritage speakers (Polinsky 2006). This might be because both types of knowledge depend on the extent of experience using the heritage language with a variety of speakers (Gollan, Starr, and Ferreira 2015).

One study focused on the vocabulary development of eight Finnish bimodal bilingual children ages 12–30 months (Kanto, Huttunen, and Laakso 2013). The children's parents were asked to complete the Finnish version (Lyytinen 1999) of the MacArthur Communicative Development Inventory, giving information about their children's

knowledge of both spoken and signed words. They found that, by age 30 months, only three of the children had age-appropriate total vocabularies, combining their knowledge of words in Finnish and FinnSL. The participants exhibited great variability. No comparison figures are reported for Deaf children who are acquiring FinnSL natively. On the other hand, with regard to their vocabulary development, three bimodal bilingual children who were acquiring LSQ and French were found to be equivalent to three unimodal bilingual children who were acquiring spoken French and English (Petitto et al. 2001). This finding was based on the children's age of first words, first fifty words, and the number of types produced in spontaneous language samples. In most sign languages, determining the age equivalence of vocabulary for bimodal bilinguals is challenging due to the lack of native signer norms to use for comparison.

Discourse

As a relatively new area of linguistic inquiry, discourse development in sign languages has focused mainly on narrative production. In recent years, researchers have analyzed the referential forms used in narratives elicited from hearing adults who are learning a sign language as their L2 (e.g., Bel et al. 2015 for L2 signers of Catalan Sign Language; Frederiksen and Mayberry 2015 for L2 signers of ASL) and compared the patterns of referent tracking to those observed for Deaf native signing adults. Morgan (2000) analyzed patterns of referent tracking produced by two older Coda children (ages 7;01 and 9;10) in British Sign Language (BSL), although the children were not identified explicitly as heritage signers. Morgan also noted features in the same Coda children's BSL narratives that differ from those previously observed in Deaf children's BSL narratives (Morgan 1999). For instance, one of the Coda children used overt pronoun subjects in discourse contexts where a null subject would have been more appropriate, and both children favored a sequential presentation of content that could have been encoded simultaneously by the referential use of space. Both of these tendencies reflect the influence of the children's English grammar on their BSL grammar (*ibid.*). Certainly, overuse of overt referential forms in discourse contexts that would normally call for null forms has been well documented among child bilinguals

for whom one language allows null subjects but the other does not (e.g., English-Italian bilinguals [Serratrice, Sorace, and Paoli 2004; Sorace et al. 2009]; English-Spanish bilinguals [Paradis and Navarro 2003]). The children in these studies are not identified as heritage speakers, so their overuse of overt referential forms is described simply as an effect of bilingualism. However, the possibility remains that overproduction and overacceptance of overt forms in narratives may also be a discourse strategy for heritage bilinguals.

Articles in This Issue

The articles in this special issue of *Sign Language Studies* expand on the evidence that supports the identification of sign languages as heritage languages for certain bimodal bilinguals. Reynolds investigates heritage signing from a developmental vantage point, documenting patterns of reference cohesion used by six school-aged bimodal bilingual children acquiring ASL and English as their first languages. Half of these children were born hearing (i.e., Kodas), while the other half are Deaf but can hear by means of cochlear implants (i.e., DDCI). Her study focuses on strategies these children use for introducing, maintaining, and reintroducing referents throughout their ASL narratives; she compares these strategies to those used by age-matched Deaf controls who do not have cochlear implants and who are also from Deaf families. Additionally, for the bimodal bilingual group, Reynolds documents changes in these strategies over time by comparing their output at two points roughly a year and a half apart. Her findings are in line with those of previous observations, mentioned earlier, of an overreliance on overt referential forms among hearing heritage speakers of Italian and other pro-drop languages (Serratrice, Sorace, and Paoli 2004). Although the two participant groups patterned similarly in many respects, the bimodal bilingual participants displayed a greater tendency than the Deaf controls to use overt pronouns for maintenance and reintroduction, a tendency that grew stronger over time. Reynolds also documents other strategies (e.g., fingerspelling words that have common lexical forms in ASL) used by bimodal bilingual children to encode referents overtly in certain contexts. Overall, reliance on overt forms increases as the bimodal bilingual children grow older, prompting Reynolds to suggest that this may

indicate divergent rather than delayed development of this particular aspect of ASL grammar.

Quadros extends the concept of divergence with respect to heritage signer production by focusing on spontaneous code blending by adult Codas with differing levels of proficiency in their heritage sign language, Brazilian Sign Language (Libras). She observes that, although all the of Codas she studied engage in mixing of Libras and spoken Portuguese, proficiency in the heritage language correlates with both the frequency of code blending and the well-formedness of the signed portion of code-blended utterances. Codas who maintained a high level of Libras proficiency, due to sustained contact with the Deaf community in adulthood, produce a much higher proportion of code-blended utterances than those with lower proficiency in Libras. Among the Codas with strong Libras proficiency, the majority of code-blended utterances are either well formed in both Libras and spoken Portuguese or well formed in Libras but not in Portuguese, indicating a privileged status of Libras grammar in their bimodal production. Portuguese-dominant Codas display the opposite pattern, producing code blends consisting of well-formed Portuguese but divergent Libras content.

Because these Codas are adults, Quadros uses the term *divergent* as a label for individual utterances that would strike monolingual speakers as “marked or unusual” rather than as a description of the Codas’ developmental course. Theoretically, divergence is a result of language synthesis, or the natural interaction between a bilingual’s two grammars regardless of the bilingual’s respective competence in the two languages. Quadros appeals to two theoretical models—the language synthesis model (Lillo-Martin, Quadros, and Chen Pichler 2016) and a production model (Emmorey et al. 2008)—to account for the bimodal bilingual mixing patterns she observes in her data. She also notes in her participants’ code-blended output that one language can usually be identified as the primary language because it contributes most of the grammatical structure to the utterance, while the other language is relegated to secondary status. Primary and secondary languages generally align with the bilingual’s language dominance or preference, but bilinguals can also switch between primary languages from utterance to utterance, often for sociolinguistic motivations. Quadros

observes that divergent output in code-blended Libras-Portuguese is more likely to occur in the secondary language than in the primary language, as the former accommodates to the latter through prosodic, phonological, morphological, and lexical modifications. Her documentation of these patterns in Libras and Portuguese extends both heritage signer research beyond ASL and English and lays the groundwork for larger-scale comparison of language mixing by adult heritage signers with differing levels of sign language proficiency.

Returning to the population of heritage ASL signers, Isakson discusses important factors that contribute to the wide variability in sign language competence among adult Codas: unusual intergenerational transmission of sign language, as well as lack of educational opportunities for Codas in their heritage sign language. Isakson opens her discussion by noting the growing demand nationwide for culturally and linguistically competent sign language interpreters. She points to heritage signers as a largely overlooked source of cultural and linguistic competence and suggests reasons why Codas are not represented in greater numbers in the field of sign language interpreting and other Deaf-related professions. The first is the unusual pattern of intergenerational transmission of sign languages in the Deaf community. Because the vast majority of Deaf parents were themselves raised by hearing parents who did not sign, most Codas learn their home sign language from nonnative signer models. This fact has implications for the type of sign language input that Coda children receive, which may range from so-called pure ASL to highly mixed varieties that incorporate significant influences from English and artificial sign systems. Heritage signers would benefit greatly from attending school with other signers where ASL is a language of instruction. There they would be able to interact with a wide range of signers beyond their parents and continue developing their heritage sign language skills. However, Isakson identifies the lack of opportunities for Coda children to receive such an education as another persistent and key obstruction to their sign language development. Several schools for Deaf children around the country now allow heritage signers to attend preschool programs but do not permit them to enroll in higher grades as a result of funding restrictions that require students to meet the definition of “disabled” as outlined by the Individuals with Disabilities Act (IDEA

1975/2004) and the No Child Left Behind Act (NCLB 2002). This disability framework, rejected by many Deaf scholars (e.g., Padden and Humphries 1998; Ladd 2003) and Deaf community members, essentially isolates Deaf ASL users and hearing heritage signers from each other in educational settings, thereby further affecting the transmission and preservation of ASL at both the individual and the community levels. In the meantime, Isakson recommends the development of community schools modeled after those run by cultural groups that support spoken heritage languages such as Chinese and Arabic. Such schools could provide valuable opportunities to young heritage signers of ASL and other sign languages not only to maintain and expand their heritage signing skills but also to develop their Coda identity.

One might suppose that once heritage signers become adults, they would be able to take advantage of college sign language courses or interpreter training programs to strengthen and refine their sign language proficiency. However, Isakson points out that these programs are largely designed for and attended by hearing second language learners of ASL and thus are not suitable for heritage language learners because of the Codas' specific set of cultural and linguistic backgrounds. Codas surveyed in previous research (e.g., Williamson 2015) reported many reasons for abandoning interpreter training programs, including courses that were too rudimentary, prejudice against variations in heritage signers' signing that were perceived as nonstandard, and resentment from non-Coda classmates for having an "unfair" advantage. Clearly much work remains to be done to make interpreter training programs more welcoming to heritage signers and provide coursework that is both challenging and beneficial to them.

Finally, Polinsky closes this special issue with a summary of her perspective on the nascent field of heritage signer research as an established heritage language researcher. She reiterates the importance of studies that refine our understanding of the acquisition of heritage sign language: how developing grammars are shaped by variations in input, age of exposure, and dominance (both at the individual and the societal level). Furthermore, patterns observed among heritage language users challenge traditional assumptions about what it means to be a *native speaker/signer* of a language. Recognition of multiple

categories of native speakers/signers with differing grammatical competence has significant theoretical consequences and is also highly relevant in the Deaf community, where unique patterns of inter-generational transmission mean that hearing native signers vastly outnumber those who are Deaf (Compton 2014).

Despite the sometimes overwhelming variability that characterizes heritage speaker data, Polinsky outlines a number of recurrent grammatical patterns that have emerged in her research. These patterns are potentially characteristics of heritage speakers in general and may also turn out to differentiate heritage signers as well, keeping in mind that modality may influence familiar heritage language patterns in unexpected ways. Finally, Polinsky shares insights on experimental tasks that have been effectively used to assess heritage speakers' grammatical competence. By doing so, she offers valuable direction for future researchers who are interested in investigating the grammatical adeptness of heritage signers and variations in sign language proficiency among native signers.

Concluding Remarks

Bilingual grammar is often viewed as confoundingly variable, defying systematic analysis because of the myriad factors that can influence development. When one of a bilingual's languages is a heritage language, whether signed or spoken, the picture is complicated even further, and the level of variation that researchers can expect to encounter among individuals increases. Yet scholars who have braved this daunting variability inherent in heritage language data are making progress in identifying patterns that characterize whole groups of heritage speakers. Such findings offer valuable contributions to theoretical debates and to many applications related to language maintenance, pedagogy, and affirmation of heritage speakers' cultural ties to their home language regardless of their level of grammatical competence. The expansion of heritage language study to include heritage sign languages is an exciting new line of research, and we gratefully thank the original participants of the Heritage Signer Panel in 2016 for serving as the impetus for this special volume of *Sign Language Studies*: Ronice Quadros, Ted Supalla, Maria Polinsky, and Marianne Stumpf.

We hope that the pioneering spirit that they and the other authors in this volume have demonstrated will inspire many new studies on heritage sign language in the years to come.

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