

Lexical Borrowing IN American Sign Language

By Robbin Battison

**With foreword by
Diane Brentari**

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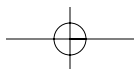
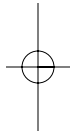
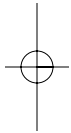
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Foreword

Lexical Borrowing in American Sign Language (LB) is one of the best books available on the subject of sign language phonology because both specialists and non-specialists can read it. And even though it is now twenty-five years since LB was first published (as a dissertation), the data, methods, and analyses still hold up under scrutiny. LB presents a picture of the state of the art of sign language linguistics in the mid-1970s in a single author's voice, and reading it today helps us to better understand what has happened in the intervening decades: Surprisingly little in some respects, a great deal in others.

LB addresses the phonological grammar, both in terms of structures and in terms of rules and constraints, and it does so with ample examples and lucid discussion. The formal expression of Battison's findings may have changed, but the fundamental contributions of both data coverage and insightful analyses are still as strong as ever.

LB is methodologically solid, since Battison describes his subjects, tasks, and procedures straightforwardly, and more importantly, he does not overstate his results beyond what his method allows. It is not always obvious when a work first appears if it will withstand the test of time. LB has surely succeeded; this book is a must-read for every graduate student entering the field, and a source of inspiration for phonologists working in the field of sign linguistics. LB is an example of what we all strive to produce.

Putting LB in the context of the history of the field

LB is not only one of the very best book-length works on the phonology of a sign language, but it is also one of the first. Works by Stokoe (1960), Boyes-Braem (1973), Fischer (1973), Friedman (1976, 1977), Frishberg (1975, 1976) appeared before LB, but these were articles, book chapters, technical reports, unpublished

dissertations, or occasional papers. As such, these works were less accessible. Stokoe, Casterline and Croneberg's *Dictionary of American Sign Language* (1965) was a groundbreaking work published earlier than LB, but it had a different set of goals. This dictionary called attention to the heretofore-neglected internal structure of the sign and to sign language linguistics more generally; it provided a dependable corpus of signs in the form of a dictionary; and it provided a notational system to express the component parts of a sign. These goals had to be met first, in order to make LB conceptually possible, but LB goes beyond them to address issues of phonological distribution.

Both specialists and non-specialists will benefit from reading LB. There is information that will be useful for interested members of the Deaf community, phonologists who work on sign languages, phonologists who don't know anything about sign languages, sign language linguists who work on other aspects of the grammar, teachers and students of sign languages, as well as sign language interpreters and interpreter trainers—just to name a few.

For example, the information in the Introduction and first two chapters is useful on different levels. For readers who might not have much of a sense of the Deaf community and the linguistic context of ASL, these chapters are a clear and concise overview of the issues that must be covered in order to approach Battison's work with sufficient background to understand its significance. For readers who have a strong background in sign language studies, these chapters are useful also, since the style of presentation is a model of how to cover the essentials without overburdening the novice with too much detail. Researchers who work on ASL are often asked for such information, and here is a place where the facts are accurately presented and respectful to all concerned, narrated in a clear, accessible prose style.

The period when LB appeared, the 1970s, was a time of awakening in the Deaf community. Work by Stokoe had by then circulated among scholars and non-scholars alike. Performances by the National Theater of the Deaf, such as *My Third Eye*, were performed nationwide, which produced a groundswell of pride in ASL and in being Deaf. Within Deaf education, the switch from an oral method to a total communication method took place in many residential schools for the Deaf during this decade.

The educational practice of Total Communication, in which speech and sign are to be used simultaneously, often incorporated systems of Manually Coded English (MCE). These systems were invented by hearing educators and were accepted with a great deal of optimism within some circles of educational policy, yet many members of the Deaf community viewed them with disdain.

Besides ignoring the syntax and morphology of natural sign languages, these systems include large numbers of invented signs, called initialized signs, which superimpose a fingerspelled letter onto a lexical item from ASL. (See Supalla (1990) and Stack (1999) for analyses of why these systems are unlearnable by Deaf children.)

The combination of these events gave rise to a language-consciousness among the Deaf community, and efforts began to purge ASL of foreign influence. LB appeared at this time, when fingerspelling itself began to be viewed with suspicion. Because at the heart of fingerspelling is the relationship of the handshape to a letter of the English alphabet, fingerspelling can be considered “foreign”. The fact that fingerspelling has existed since the earliest filmed records of ASL (Hotchkiss, 1913; Veditz, 1913) and much earlier in Spain (Bonet, 1620) seems not to have discouraged the popular sentiment that fingerspelling is appropriated from English and its presence in ASL is marginal.

This is the historical context in which Battison began his data collection for LB. Yet one of the most important, but understated, outcomes of LB was to demonstrate an ironic point: Even though fingerspelling may have been invented and introduced into sign languages by hearing educators—Bonet was hearing, as was the French educator, Abbé Sicard, who appropriated it for use at the Paris School for the Deaf (Lane, 1984)—all subsequent patterns of fingerspelling used by American Deaf people *cannot* be attributed solely to foreign influences.

Battison’s work shows that patterns of re-structuring of fingerspelling are a window on the word-level phonological constraints in ASL more generally. Moreover, LB shows that patterns of fingerspelling use feed back into the grammar of the language in the areas of phonology, morphology, and pragmatics, as well as in the operations of lexicalization and grammaticalization.

Chapters 1 and 2 taken together are a thumbnail sketch of the phonological structure of ASL for the non-specialist. It is a balanced description of word-based phenomena, but in a way that guides the reader into thinking about signs as a phonologist would—that is, highlighting the discovery procedures that are involved in looking for lexical and morphological contrast, as well as for patterns of distribution. The methodology of this book is that of generative phonology, but sometimes it is easy to lose sight of this because there are no formally written rules in the text, and because on virtually every page there is a new empirical finding. It is easy to be swept along by the sheer amount of new information about the language presented in these chapters.

We see such new ideas as: (1) evidence for the use of a general ‘complexity’ measure in 1- and 2-handed signs; (2) the distribution of 1- and 2-handed signs within the signing space; (3) possible articulatory and perceptual explanations for the distribution of handshapes in different areas of the signing space; (4) general constraints on complexity in 1-handed signs, such as “the number of parameters that can change in a signed word is two”; (5) a typology of 2-handed signs; (6) the Symmetry and Dominance Condition of 2-handed signs; (7) the distribution of different types of 2-handed signs in the ASL lexicon.

The “first-mention” of many of these research issues is here in LB, and where it is not the first mention, the original work is cited, so that readers can have accurate information about the origin of key concepts in the discipline. For graduate students

entering the field, chapter 2, called “Signs in Action,” includes important considerations about empirical evidence that should be brought to bear on studies of ASL phonology. It is clear from this chapter that in order to analyze word-level phenomena adequately, one must look at data from as many of the following areas as possible—i.e. phonological alternation, morphological alternation, historical change, and lexical innovation. *Contributions to Grammatical Operations in Sign Languages*

LB has made a number of specific contributions to our understanding of sign language linguistics, and, specifically, to sign language phonology. I have selected a few of the issues first raised in LB and then pursued in subsequent work, and these will be described in this section.

LB was one of the first studies of lexicalization in ASL, that is to say, the manner in which new lexical items are added to the lexicon. Battison carefully circumscribed his project by focusing on what he called “loan signs,” which is only one set of forms that utilizes the letters of the manual alphabet and displays an identifiable set of properties. In addition, loan signs actually participate in three distinct types of operations related to variation and language change, however, not simply lexicalization. They participate in grammaticalization and nativization as well, and each of these operations has been pursued independently in subsequent work by Padden (1996, 2000), Janzen (1999), Johnson and Schembri (1999), Wallin (2000), Brentan & Padden (2001), and Shay (2002), to name of few. A closer look at these works makes clear what are the distinctions among the related phenomena of nativization, lexicalization, and grammaticalization, and how it is possible to tease apart the contribution that LB made to our understanding of ASL in each of these areas.

Grammaticalization is that subset of linguistic changes through which a lexical item in certain uses becomes a grammatical item, or through which a grammatical item becomes more grammatical (Hooper and Traugott, 1993:2). The most well studied cases of grammaticalization in spoken languages are those where lexical items (open class items) become grammatical elements (closed class items), such as the case of the Ewe, a West African language. In Ewe, a verb form for the word ‘say’ (Ewe: *bé*) has become a complementizer (Lord, 1976). During the first step of grammaticalization, shown in (1a), *bé* is performing the function not only of the matrix verb “say,” but also of the complementizer “that.” During the second step of grammaticalization, shown in (1b), a different word for ‘say’ is used as the matrix verb, and *bé* only means ‘that.’

- (1) a. *Me-bé me-wç-e.*
 I-say I-do-it
 ‘I said, “I did it.”/I said that I did it.’
- b. *Me-gblç bé me-wç-e.* (*gblç* is a different word for ‘say’)
 I say say I-do-it
 ‘I said that I did it.’

The third and last stage of grammaticalization in Ewe is one in which *be* comes to be used as a complementizer after a whole range of matrix verbs, including *nlç*

‘write,’ *x_se* ‘believe,’ *nyá* ‘know,’ *bu* ‘think,’ *se* ‘hear/perceive,’ and *ná* ‘make sure.’

Grammaticalization in ASL has been discussed in the context of classifier predicates becoming lexical items (Johnson & Schembri 1999; Wallin, 2000), but it is also relevant for fingerspelled forms as well. Fingerspelled forms can assume a different word class identity in ASL, as shown by Shay (2002). In some cases, fingerspelled forms instantiate nominalization in ASL—e.g. the distinction between RIDE (verb) and R-I-D-E used as a noun. The fingerspelled form can function as a noun in the syntax, and can be tested by determining its ability to function as an antecedent in a classifier structure, as shown in (2). The fingerspelled form must be a syntactic noun in order to function in this role.

- (2) a. no antecedent (ungrammatical)¹
 * CL: 3[zig-zag] ‘vehicle take a zig-zag path’ SICK[resultative]
 [The ride] was along a switchback road. I got sick.
- b. lexical item antecedent
 ? RIDE CL: 3[zig-zag] ‘vehicle take a zig-zag path’ SICK[resultative]
 The ride was along a switchback road. I got sick.
- c. fingerspelled form antecedent
 R-I-D-E CL: 3[zig-zag] ‘vehicle take a zig-zag path’ SICK[resultative]
 The ride was along a switchback road. I got sick.

The data from LB show that loan signs also participate in grammaticalization. They may undergo a change in word class. For example, the loan sign #O-U-T has become a predicate adjective to refer to a difficult situation (LB, §4.3); it is no longer a preposition, as it is in English. This same example, #O-U-T, also participates in lexicalization, since this same form has filled a new space in the ASL lexicon where no word previously existed, a word that has no exact English equivalent, as shown in (3).

- (3) INDEX-1sg GO CLASS KARATE, INDEX-1sg WATCH FINISH, INDEX-1sg THINK CAN PRACTICE, NOTHING-TO-IT... UNTIL START CHOP CL: “over-the-shoulder-throw” CL: “fall-on-floor”... SILLY INDEX-1sg#OUT.

The loan sign #E-X, another example of grammaticalization, has been modified from its source English affix to an ASL lexeme, and in ASL simply means ‘former’ ((4); LB, §4.2). It is neither morphologically restricted to agentive-nouns, as it is in English (e.g. ex-President, ex-chef, ex-swimmer, ex-member; *ex-school, *ex-work, *ex-desk) nor is it morphologically restricted by allowing no intervening material between #EX and the constituent it modifies:

- (4) a. PAST #EX WORK CARPENTER
 b. WHAT, INDEX-2sg #EX PAST SWIM INDEX-2sg SWIM #EX INDEX-2sg.

Lexicalization is that subset of operations that: (i) creates a single word (i.e. lexeme) from structures that were polysemic, or (ii) changes the meaning or the range

of meaning of a word. These two forms (#OUT and #EX) undergo less phonological restructuring, but they are important in discussions of lexicalization and grammaticalization of fingerspelled forms. Their role in the syntax is different than that of the English source and the range of lexical meanings has changed as well.

Another example of lexicalization in loan signs occurs in compounding, a widespread phenomenon whereby a single word is created from two stems, which need not have anything whatsoever to do with fingerspelling in ASL (e.g. SLEEP^SUN-RISE=OVERSLEEP, NAME^SHINE=GOOD REPUTATION).

There is evidence, however, that fingerspelling also participates in compounding in ASL (Padden 1998) in sign+fingerspelled compounds, such as B-E-L-L BOY, CHEAP S-K-A-T-E, PAY R-O-L-L, in which the fingerspelled form is used when the lexical sign would refer to something outside the range of meanings used for the sign—e.g. to use the lexical items BELL, SKATE, and ROLL would be ungrammatical here.

Lexicalization can also include semantic or pragmatic changes. As stated earlier, fingerspelling has been used for pedagogical purposes from the very beginning, but Padden (1996, 2000) discusses two new pragmatic uses of fingerspelling in the classroom by native-signing, ASL teachers. The first use is known as “chaining”, whereby the use of fingerspelling serves to underscore the importance of a new term in a classroom lesson. This involves fingerspelling a word, such as ‘volcano,’ pointing to the word in a print medium, and then using the sign, all in rapid sequence.

These instances of chaining build associative structures between print and sign and are mediated by fingerspelling. Importantly, this technique (pragmatic in linguistic terms, and also important as a pedagogical practice) was innovated spontaneously by native signing, Deaf teachers. Hearing teachers who are fluent in ASL do not use this technique.

The second use of fingerspelling in a pedagogical setting that involves language innovation in the pragmatic/semantic domains is to create a contrast between two uses of the same word. The fingerspelled form creates a label for a specialized, technical, discipline-specific use of the same word that has a lexical sign for the more general use—e.g. PROBLEM (i.e. general use) vs. P-R-O-B-L-E-M (i.e. math or science problem).

This type of contrast is another instance of a more general phenomenon which ascribes a narrower use to the fingerspelled form and the more general use to the lexical sign is pointed out in LB in the emphatic uses of fingerspelling—#EARLY, #BUT, #EASY, and #YES (LB, 215).

Finally, the loan sign forms discussed in LB contribute to our understanding of nativization, which is that subset of operations that brings a borrowed word in closer alignment with the phonological inventory and the phonological constraints on native forms in the target language. A striking example is #BREAD (LB, §4.4, discussed at length in Brentari & Padden, 2001). In this loan sign, the R-, E-, and A-

handshapes are deleted, and the resulting form is a repeated handshape change between an open and a closed 8-handshape. In fact, this loan sign conforms to all of the documented well-formedness conditions on words in ASL; there is even a lexical item with the same structure as this loan sign, albeit with a different orientation—namely STICKY. We can see the distinction between nativization and lexicalization if we look at the differences between the changes that of classifier predicates and loan signs undergo as they become lexicalized.

Looking at the model of the ASL lexicon developed in Brentari & Padden (2001), shown in (5) we see that classifier predicates (labeled ‘2’) are already part of the native lexicon, which includes both frozen forms (labeled ‘3’) and classifier predicates (labeled ‘2’). Because they are part of the native lexicon, classifier predicates need not undergo nativization. Classifier predicates are not monomorphemic, however, and, therefore, they are not lexemes, and must undergo lexicalization in order to enter the core (i.e. frozen) lexicon. A surface form that looks like a classifier can become a lexeme, however, and, as shown in Brentari and Padden (2001), this can be tested by checking whether the form allows the affixation of inflectional morphology (e.g. grammatical aspect), or derivational morphology (e.g. nominalization).

- (5) foreign / non-native native
 1.3 1.2 1.1 1.0 3 2

Unlike classifier predicates, all forms that utilize the manual alphabet have a foreign source, English (labeled 1.0, 1.1, 1.2, 1.3 in (5)), and typically this source is a monomorphemic English word. Different sets of forms containing letters of the manual alphabet reside in increasingly peripheral strata, moving from 1.0 (e.g. a form such as #BREAD, which looks identical to a core form) to 1.5 (e.g. sign+finger-spelling compounds, which violate the largest number of phonological constraints that the core forms obey). The path of loan signs to the core lexicon involves both nativization and lexicalization. They become nativized by demonstrating the phonological and morphological properties of native ASL words—i.e. obeying constraints on allowable handshape, movement, and place of articulation within words. They become lexicalized by changing the range of meanings the form is used for in ASL vs. English or by filling a new lexical space in the ASL lexicon.

By understanding the distinctions among these processes of grammaticalization, lexicalization, and nativization, we can more easily see how the discussion of loan signs fits into these discussions. Because all three operations can occur in a single loan sign, it sometimes obscures the fact that these forms contribute to more general issues concerning patterns of use in ASL grammar, totally distinct from their written English sources.

Contributions to Sign Language Phonology

The preceding paragraphs discussing grammaticalization, lexicalization, and nativization address one set of the contributions of LB—that is, more general ones about grammatical operations. This next part is about the contribution LB made specifically to SL phonology, by targeting patterns of distribution of structures. These contributions are equally important, whether addressing forms with finger-spelled letters in them or not.

Our understanding of the phonology of ASL was greatly enhanced by the study of Battison's loan signs, and in these paragraphs I want to describe some of the work by subsequent researchers that was inspired by this book. Even though subsequent work investigates different specific issues than LB, the overarching issue here is structural complexity and constraints on phonological structure imposed by ASL grammar. Battison considers both ease of perception (Siple, 1973) and ease of production (LB, p. 41) as potential phonetic sources for this complexity, but he addresses the question of complexity ultimately as a phonological issue. I will divide the discussion into work addressing complexity in 1-handed signs and that addressing complexity in 2-handed signs.

In 1-handed signs, structural complexity in LB is discussed in terms of the number and type of handshape (HS) and place of articulation (POA), singly and in combination. Battison addresses handshapes according to the number of motorically involved fingers (LB, p.189), how frequent they are, what handshapes and places of articulation combinations occur together, which joints, other than joints of the hand, are involved in executing a sign, and the number of places a given handshapes allows for contact (LB, §1.6). Only a few of these issues have been taken up in any depth.

One topic that has been given considerable attention is the matter of selected fingers. Two-letter loan signs have a strong tendency to exhibit a type of assimilation, whereby in forms, such as #OK, #NG, #OH, one of the handshapes (most often the first handshape, but not always) changes the articulation of the handshape by assuming the same set of selected fingers. In its underlying form, the handshape '0' has contact between all of the fingers and the thumb, but in #OK and #OH, only two fingers contact the thumb, which is the number of selected fingers involved in producing -K and -H-, the second handshape in these forms. Mandel (1981) addresses this issue, calling it a constraint on the number of handshapes in words. He articulates the constraint using a production account to divide fingers into selected fingers and unselected fingers, and argues that there is only one set of selected fingers per word, two sets of fingers per word. This Selected Fingers Constraint was argued to be a morpheme-based, rather than a word-based phenomenon in Sandler (1986), then a syllable-based phenomenon in Brentari (1990) and Perlmutter (1992); however, it may be that each of these units plays some role in the Selected Fingers Constraint. POA exhibits similar behavior to that of selected fingers, in that the *setting* within a major POA region may change within a word (setting features include: ipsilateral, contralateral, proximal, distal), but only rarely does the major body

region itself change within a word (**POAs on the body**: head, arm, non-dominant hand, torso; **POAs in neutral space**: the 3-dimensional x-, y-, and z-planes in neutral space). Diachronic change is in this direction as well.

In 2-handed signs, structural complexity is primarily addressed in terms of Symmetry and Dominance. The Symmetry and Dominance Conditions articulated in LB (§1.4) are the starting point for all work on complexity in 2-handed signs. Symmetry is a property of handshape, orientation, and place of articulation in LB, and for single signs, the concept of symmetry has been explored further by Uyechi (1996).

The need for conditions, such as the Symmetry and Dominance conditions, has led both to debates about the best way to use feature geometry to express the phonological representation of 2-handed signs (Brentari 1998, Sandler, 1987, 1989, van der Hulst and Sandler, 1994, van der Hulst, 1996), and to analyze phenomena that are intertwined with the representation of 2-handed signs. One such phenomenon is Phonological Deletion of the non-dominant hand (sometimes referred to as Weak Drop, Padden and Perlmutter, 1987, Brentari, 1998). Why do some signs allow this, while others do not? Phonological deletion occurs when a sign that is 2-handed allows a 1-handed surface form, not when the non-dominant hand is encumbered by driving, carrying packages, etc., but rather under normal signing conditions. There are 2-handed signs from all three types that may undergo this optional process (e.g. **Type 1**: SUNDAY; **Type 2**: REMEMBER; **Type 3**: READ). It is possible to predict which signs will allow Phonological Deletion and which ones will not (Padden & Perlmutter, 1987; Brentari, 1998); both analyses refer to some extent to the phonological complexity of signs to make their arguments. Padden and Perlmutter (1987) address this issue for Type 1 signs; Brentari (1998) analyzes all three types of signs. This set of work was not simply influenced by the initial observations and analyses in LB; it was launched in Battison's project. The existence of the Symmetry and Dominance conditions and their role in the phonology is convincing evidence, even to the non-specialist, that sign languages have phonology, because a physiological or a phonetic account of this complexity will fall short of explaining the facts.

I have only given a few examples here of how LB has served as a point of departure for important work in sign language linguistics. I would like to thank Sign Media, Inc., for undertaking this new printing of LB. Such publications make it possible to include these texts in our courses and to continue to inspire us for generations to come.

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ⁱ If there is an antecedent in a previous utterance, this sentence is fine, but not as a first mention.

Preface

If this were a study of a spoken language, we could begin with many expectations about the form of the language, the ways people used it, and the ways in which they regarded it. Since it is about sign languages, and one sign language in particular, American Sign Language, there is much that cannot be taken for granted. We have much to learn about signing, signers, and deaf culture.

Most work to date on deafness and deaf people has been based on impaired hearing and its consequences rather than on the substance and organization of deaf people's lives. As individuals, deaf people fit well into a clinical framework: pathological sensory loss, diagnosis, and remediation. Considered as a group, however, they form a community whose cohesion is not so much based on pathological audition as it is on shared experiences: similar experiences in interacting with parents, siblings, peers, and professionals; similar educational backgrounds; and a group identity derived from the use of a common sign language, which simultaneously distinguishes them from others as much as it holds them together.

Hearing people largely encounter and view deaf people as aberrant individuals in a larger societal context, and hence impose something like a clinical—pathological model of thought in any interaction with them. But any effort to understand what deafness entails will fall short if it is limited to the one-sided perspective suggested by defective speech and hearing, and may have disastrous social consequences. More important to understanding deaf people is finding out how they do obtain sensory information about the world around them, how they process and interpret it, and how this affects their interaction and communication with those they perceive as like themselves and those they perceive as being outside their group.

If we consider the deaf from this socially based perspective, much becomes clear; for the collective attitudes and policies of the hearing majority toward the deaf minority are based primarily upon language use, a complex set of social acts. Some may consider deaf people to be “slow” because they do not understand or respond to

everything that is said in the majority language; they are hard to understand because of their often imperfect spoken command of that language, and if they resort to writing it often resembles a foreigner's fumbblings; they are overtly different because they wave their hands and fingers in the air to communicate with one another. Consequently, understanding this group of very special people requires understanding the organization of their lives on their own terms—one must understand the principles of the sign languages that they use to communicate among themselves.

Ignorance of how deaf people live, think, and communicate is unfortunately present even among those of us who have professional interests in the deaf, such as teachers, speech and hearing specialists, and social workers. Textbooks used in training these specialists typically discuss sign communication superficially, and label it esthetically, expressively, and psychologically inferior to speech. In the absence of linguistic inquiry, sign languages have often been viewed as linguistically inferior; where test validity assumes the possession of spoken or written language skills, the intelligence and achievement levels of signers are often underrated; in societies that stigmatize overt use of the hands to communicate, signing is taken to indicate social maladjustment. Those who hold these attitudes seem to reason that an inferior language indicates culturally and intellectually deprived users of language; and vice versa, that simple people require a simple language. In fact, one of the unfortunate by-products of teaching chimpanzees how to use signs is a mistaken conclusion that sign language must be very simple if even chimps can use it.

We have learned recently from investigations of sign languages, that they are complete languages both in the technical and extended sense, that they are comparable to spoken languages on many dimensions, and that they are far from simple. In fact, they are quite complex. Information about the linguistic nature of sign languages thus has implications for linguistic theory, language planning, the psychology of language, the education of deaf people, and attitudes towards deafness and deaf people.

Along with many other linguists, I have been interested for the past several years in the *form* or “pronunciation” of gestures used as signs in American Sign Language (ASL), in the *organizational principles* of their formation, and in their relationship to the *human capacity* for making gestures with our hands and perceiving them with our eyes. These issues are useful reference points for comparing the nature of spoken languages and sign languages.

One of the central problems of such a comparison is the gross difference between the acoustic signal produced vocally and the visual signal produced manually, with all the differences in production and perceptual processing this entails: How much of these physical, channel-specific differences are reflected in other, more abstract linguistic structures of the language? For example, since we have two hands but only one tongue, it is sometimes possible to articulate two signs simultaneously, but never to pronounce two words simultaneously. What does this mean for the way we identify and isolate individual signs and words, the way we compute rate of information transmission, or the way we represent syntactic relationships among words

or signs in a sentence? A host of such questions arises whenever we begin comparing physical signals and work upwards to more abstract language structures.

As a case in point, the present study examines some English words that are often fingerspelled by signers, but which have a special status; these manually produced words physically change and actually become ASL signs in a systematic and predictable manner, leading to the conclusion that the process of word borrowing and restructuring in ASL is highly similar to the same process in spoken languages. In other words, despite the very great physical differences between signing and speaking, there are underlying regularities common to both ASL and English. This is just one of the many ways in which we can show that ASL is a complex linguistic system—a true language.

While this study focuses on the formational aspects of signing, an analysis of loan signs and the English influence that prompts their borrowing also depends upon the social world of signers, in particular those aspects of social interaction that create ASL-English bilinguals. Just as we cannot divorce a language from the way it is physically expressed, we cannot separate it from the culture or cultures in which it is used; a diverse approach is necessary for understanding any one aspect of a language. I sincerely hope that others will continue working in this very exciting area. We are still in a rich discovery period for the study of American Sign Language.

This study has involved the efforts of many who deserve special thanks. I was fortunate in having Elizabeth Baird as an illustrator during the early stages; she not only created with her pen, but also served as a consultant and reinforced my excitement about the data (needless to say, adapting her drawings to this text has sometimes spoiled the artist's original intent, for which I apologize). Thanks go also to my deaf "mother", Bonnie Gough, who very patiently introduced me to American Sign Language; to Carol Padden, who served as a consultant on the nuances of much of the data and on deaf social interaction—I am grateful to her also for teaching me most of what I know about using ASL conversationally; to William Stokoe for his encouragement and support over the years in the Linguistics Research Laboratory at Gallaudet College; to Edward Klima and Ursula Bellugi for their continuing support and editorial help as academic advisors and colleagues; to Nancy Frishberg for loads of data and encouraging revisions; to Ella Mae Lentz, a consultant who secured the services of others; to Barbara Kannapell, a creative consultant who pushed me in practical directions; and to many others who assisted either as consultants, advisors, friends, or some valuable combination of the three: Genaro Abenchuchan, Charles Baird, MJ Bienvenu, Nancy Chinchour, Cathy Cogen, Dennis Cokely, Gil Eastman, Wally Edington, Tim Johnson, Harlan Lane, Gil Lentz, Agnes Padden, Don Padden, Carlene Canady Pedersen, David Peikoff, Marie Philip, Ted Supalla, Ruth Ann Sussman, Ronnie Wilbur, and Sylvia Wood.

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