

## **The Grammar of International Sign: A New Look at Pidgin Languages**

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The primary motive for studying contact language phenomena has been to further our understanding of language evolution and, eventually, of language universals. However, what we currently know about the development of pidgins and creoles is based almost completely on spoken language contact situations. There is some research on contact languages in the visual-gestural medium, but these studies have examined the structure of contact languages that have developed between hearing speakers and deaf signers. The objective of the current study of International Sign is to provide new information on the natural evolution and structure of a contact language that has developed entirely between and among signed languages. Our goal is to discover the linguistic status of International Sign and to investigate whether there is an influence of modality on language contact.

International Sign has the functional and social characteristics of a pidgin. This chapter reviews our investigation of how its structure fits into the pidgin/creole continuum (for full details, see Webb & Supalla in press; and Supalla & Webb, forthcoming). We analyzed data from videotaped lectures delivered in International Sign at an international meeting held in Europe. The lecturers were each fluent in their own national sign language, but their audience consisted of deaf signers from many distinct sign language backgrounds. That is, the lecturers and audience members did not share any mutually intelligible language. A situation such as this requires the lecturers to use the most general form of International Sign in order to be accessible to listeners from a wide variety of language backgrounds. Despite the restrictions

imposed by this contact situation, our investigation has revealed that International Sign has complex linguistic structures comparable to those found in full signed languages but that are not characteristic of spoken contact languages. International Sign displays regular grammatical patterns in marking grammatical relations among arguments of the verb and in organizing the constituent structure of sentences. International Sign also has a systematic set of negative structures which are similar to those found in full signed languages. We therefore conclude that the structure of International Sign is more complex than that of a pidgin in the spoken medium, and we propose that its structural complexity is due to a high degree of similarity in the languages in contact. The chapter concludes with a discussion of possible reasons for the similarity of International Sign to full signed languages and its difference from other contact languages.

### **HISTORY OF INTERNATIONAL SIGN**

Deaf people all over the world make contact with other deaf people who use different forms of sign language, ranging from homesign systems to national signed languages. There is one contact language at the international level with its own history, which may have begun in 1834 at the first banquet honoring Abbé de l'Épée in Paris. This type of contact language use was first reported in 1850 by Ferdinand Berthier, a deaf Frenchman, who boasted about how deaf people from different parts of the world could converse at the banquet and understand each other (Moody, 1987). International Sign refers to this type of signing used when deaf signers communicate across mutually unintelligible language boundaries. Deaf individuals use International Sign primarily in international settings to become acquainted with each other and to communicate about affairs of concern to them. It was the vehicle of communication among deaf Europeans and Americans when they organized the Comité International des Sports Silencieux (CISS) in 1924, the World Federation of the Deaf (WFD) in 1951, and the International Workshop for Deaf Researchers in 1985. Each organization has sponsored world-wide events that have drawn large crowds of deaf travelers who were then exposed to International Sign. In addition, International Sign has been recognized as the official sign language for the business meetings of these international organizations.

In regard to its status as a contact language, International Sign meets two important criterial features for a pidgin. First, there are no native users of International Sign. The language is not passed down from generations of adults to children. That is, there is no individual who has learned and used International Sign as a native language. This is also true for users of spoken pidgins. The second criterial feature for a pidgin is that it is used only for restricted purposes. Despite the long period over which International Sign usage has occurred, it has never had a continuous history or a stable com-

munity of users. Individual deaf people will occasionally find themselves at international occasions, and then may never experience such a circumstance again. With modern increases in international contacts, a small number of individuals heavily involved in international organizations may use International Sign on a regular or recurrent basis; but for the majority of users, International Sign is used for very limited times and purposes. Indeed, new users devise ways of communicating on an ad hoc basis, or observe others for relatively brief periods, and then build their usage as needed. A similar social situation in the spoken medium might be where traders from different parts of the world become acquainted with each other and make deals for trading. The structure of the contact language is limited as compared to the native languages of the participants, but it is adequate for the restricted purposes of the participants.

Despite its history as an international contact language between signed languages, then, International Sign is generally considered by its users as incomplete and limited as compared to their native sign languages. Its rate of expression is very slow, and the content is limited. In response to these limitations, there was an effort to expand and standardize its lexicon during the 1960's and 1970's, parallel to the movement to establish Esperanto as a universal spoken language. Committees were established to re-package International Sign as *Gestuno*, for which several dictionaries have been published (World Federation of the Deaf, 1959, 1965; British Deaf Association, 1975). However, this movement was hindered by several factors, for example, the strong preference among users for natural spontaneous signing and the nationalistic reactions to the selection of lexical forms from other signed languages. The impact of such standardization efforts on the lexicon of International Sign today is not known. Nevertheless, official publications of international deaf organizations now acknowledge and encourage the use of spontaneous forms of contact signing, which users have continued to employ.

There has been little documentation of the grammar of International Sign. Moody (1989) and Woll (1990) report that the grammar of International Sign uses many features found in full signed languages, such as the use of space for showing relations among arguments of the verb, the modification of movement in verbs for number or aspect, and the use of nonmanual signals for questions and negation. However, no linguistic analyses have been performed to determine whether such devices are used in a systematic and grammatical fashion.

### GOALS OF THE STUDY

We began with two alternative hypotheses regarding the linguistic status of International Sign. Signers might be using space, movement, and nonmanual signals as ad hoc or paratactic devices, along with nonlinguistic gestures,

for communicating with other signers not sharing a mutual language. On the other hand, it is possible that signers are using a simplified register that follows certain linguistic constraints. Evidence in support of the latter interpretation is that only those signers fully competent in native sign languages seem to be capable of fluently communicating in International Sign. If this is the case, International Sign may itself be based on one's native sign language, but simplified like a spoken contact language.

To examine these hypotheses, we investigate whether International Sign displays grammatical regularities, and if so, how they are similar to, or different from, those of other contact languages. First, we must discover whether signers use regular linguistic patterns in International Sign and whether these patterns are governed by formal linguistic constraints. We can then determine whether such constraints are the same as those in full signed languages or are more like other pidgin languages.

Todd (1990) has outlined several universal principles for simplification of language that involve both lexical and grammatical reduction. Pidgin language structures seem to vary in their degree of simplification, which seems to correspond to the function of the pidgin as well as the level of similarity among the languages in contact. When marginal contact is made among foreigners who attempt to communicate with each other only for a limited purpose, the pidgin tends to have a simple grammar generating short independent clauses. The lexicon is typically composed of mostly nouns and verbs. The grammar is limited to a single word order pattern with no inflectional morphology. As a result, the sentence is organized as follows:

( ) noun verb noun ( )

with optional placement of an adverb or single negator before or after the sentence (Koopman & Lefebvre, 1981; Romaine, 1988). Todd (1990) has suggested that the universal patterns found in contact languages may be due to an innate simplification mechanism, whereby humans adjust their language behavior in a way that is constrained by linguistic universals.

When a pidgin is used continuously as an auxiliary language by a stable community of users over a long period of time (e.g., Tok Pisin), its grammar is slowly expanded through the addition of more grammatical devices. Extended pidgins make use of a few bound morphemes, some function words, and pronouns, as well as some devices for clausal subordination. Such devices may either be borrowed from the superstrate and substrate languages, or evolved from within the system through grammaticalization (Romaine, 1988). These devices are, nevertheless, more limited and used less consistently than in full languages. In other words, the grammatical complexity of a particular pidgin language may increase during its lifecycle in virtue of its function in the community, but typically remains less complex than a full language.

In contrast to simple and extended pidgins, there is less grammatical simplification in cases where the linguistic contact is made between closely related languages sharing a similar grammar, as in the case of *koines* (Holm, 1988; Romaine, 1988). In such a situation, many grammatical devices from the contributing languages tend to be maintained.

Varying degrees of grammatical reduction also exist in the signed medium where signers adjust their language behavior for communicating across language barriers. Woodward (1973) first investigated the grammar of the contact language that is used for interaction between deaf signers of American Sign Language (ASL) with hearing signers who are not fluent in ASL. This contact language has developed naturally in a social context where ASL is the substrate language and English is the superstrate language. It uses the visual-manual modality and the lexicon of ASL, but with the word order and many grammatical devices of English. For these reasons, Woodward named it Pidgin Signed English (PSE). The structure of PSE seems to reflect typical pidgin language structure in that it uses invariant forms for nouns and verbs (i.e., it lacks inflectional morphology); but it differs from spoken pidgins in the way the other grammatical features are used (Woodward, 1973; Reilly & McIntire, 1980). In contrast to spoken pidgin grammars, where the morphology and syntax are both much reduced, PSE allows the use of a wider range of function words than is typically found in pidgins (e.g., a copula and definite article), as well as English devices for creating subordinate clauses.

This kind of grammatical complexity can be attributed to the social and educational uses of PSE in the Deaf community in America. The function of PSE has been extended into a standard language medium for communication between deaf and hearing signers for at least a century. Older Deaf American signers have been raised as bilinguals in the traditional schools, where ASL is regarded as a social language that deaf people may acquire from their peers for use in intimate situations, while PSE is considered superior, and thus to be used in formal situations in the community as well as for contact with outsiders. Thus, PSE may be equivalent, in both structure and circumstances of usage, to extended pidgins in the spoken language literature.

Recent research has shown that when this pidgin sign language is further adapted as an auxiliary language by fluent deaf signers for communicating with each other rather than with outsiders, it may develop yet a different kind of grammar. Lucas and Valli (1992) have described how this system has borrowed additional morphological and syntactic devices from the substrate language (ASL). For example, this system makes use of some classifier predicates similar to those found in ASL, and uses space and eyegaze for syntactic agreement of verbs with noun arguments in ways similar to the morpho-syntactic devices of ASL for verb agreement.

In short, when ASL is pidginized on an extended basis with English, the resulting pidgin appears to be similar in structure to extended or expanded spoken language pidgins. Indeed, continuous use within the ASL community may make PSE even more grammatically complex. Nevertheless, it is still not considered linguistically as complex or consistent as a full sign language; many structures typical of full ASL are used erratically, and others are omitted altogether.

These studies of contact between ASL and English in the American Deaf community have made up the literature on the structure of signed pidgin languages. However, there is a gap in the literature involving research on contact entirely among different sign languages, as in the situation with International Sign. As described previously, the circumstances of usage of International Sign allow us to ask a rather different set of questions than those addressed by PSE. For International Sign, the circumstances of usage are much more analogous to those of ordinary (i.e., limited) pidgins. The users each know one of a large number of distinct languages, but no one language is known by all. Moreover, the contact among users is sporadic and at most consists of recurrent short periods of usage; no continuous community of users with a lengthy history of interaction exists. In these regards International Sign is like a marginal pidgin and should thus be structured in accord with the typical, highly limited grammatical patterns of pidgins described by Todd (1990) and others. Furthermore, unlike PSE, International Sign is formed entirely from contact among signed languages; no spoken language is involved as a substrate or superstrate language. Its study therefore allows us to ask about the structure of a pidgin formed wholly in the gestural mode, to see whether a sign language pidgin follows the same principles of structural simplification as do spoken language pidgins.

We considered several possible ways to obtain data for our linguistic analysis of International Sign; for example, performing formal interviews with informants, recording spontaneous conversations between two individuals, or running experiments using picture description tasks (Bode, 1974; Jordan & Battison, 1976). However, these techniques may not adequately control for the contact register used by the subjects, because such signing might well vary depending on the linguistic background of the participants. To capture a more generic form of International Sign, we decided to use data from a situation in which individual signers are presenting a lecture to a linguistically diverse deaf audience. This would ensure that the signer uses the most general register in order to be accessible to listeners of a wide variety of language backgrounds. Our data are drawn from two videotaped lectures delivered at an international workshop for deaf researchers. The audience was 90 people with at least 20 different sign language backgrounds. The two presenters are deaf, one is a native signer, and the other learned sign language early in childhood. Lecturer A is fluent in French Sign Language

and Lecturer B is fluent in British Sign Language. Each had had several previous occasions (e.g., conferences or workshops) where he or she used International Sign and observed its use by other deaf individuals, but neither uses International Sign on a highly regular or continuous basis. They lectured on topics concerning deaf education in their countries, for approximately 20 minutes each.

Our analysis of the linguistic structure of the International Sign used in the two lectures is divided into three areas of enquiry: (a) the marking of the grammatical functions (e.g., subject vs. object) of the arguments of the transitive verb, (b) the ordering of the arguments in the sentence, and (c) the position of the negative marker and its function.

### **MARKING THE GRAMMATICAL FUNCTIONS OF ARGUMENTS**

We transcribed all sentences containing transitive verbs from the data corpus of both lecturers, and for each verb we noted the presence of what appeared to be inflectional morphology: subject number, subject person, object number, object person, and aspect. We identified these inflectional forms by their similarity to the verbal inflections in full sign languages that have been extensively analyzed in the linguistic literature. Our first question concerned whether these forms appeared systematically, and thus whether one could say that they were truly verbal inflections in International Sign.

Table 15.1 shows the frequency counts of various degrees of inflectional complexity (unmarked, singly-inflected and multiply-inflected forms) found in our corpus of transitive verb tokens. It also shows, for the inflected verb tokens, the frequency counts of apparent inflectional features (person, number, and aspect).

In contrast to the general lack of inflectional morphology in spoken pidgins, Table 15.1 shows that there is ample use of inflectional morphology in International Sign, in both the frequency and the complexity of inflected forms. The inflectional markers found in our corpus are abundant and diverse, and in this sense are comparable to those found in fully developed signed languages. Table 15.1 also shows that most transitive verbs in International Sign are marked with at least one inflection.

We also found the distribution of subject and object agreement marking in our corpus to be regular and predictable, which suggests that it is rule-governed in International Sign. Supalla (forthcoming) has found that agreement marking in ASL and several other full signed languages observes an implicational hierarchy. With regard to person agreement, this implicational hierarchy works as follows: Verbal subject and object agreement are not obligatory, but if the verb is marked for subject agreement, it must also be marked for object agreement. As can be seen in Table 15.2, this implicational structure for

TABLE 15.1  
Distribution of Inflectional Forms

	<i>Lecturer A</i>	<i>Lecturer B</i>
Total number of transitive verb tokens	209	109
Inflectional complexity of verb tokens		
Unmarked forms	80	31
Singly-inflected forms	86	43
Multiply-inflected forms	43	35
Frequency of agreement features marked in inflected forms		
Person	111	66
Number	21	10
Aspect	28	30

agreement marking appears to occur in International Sign just as it does in full sign languages.

The distribution of syntactic agreement-marking types across the verb tokens was obtained on the basis of which arguments were marked for agreement on the verb. For each verb token, we identified the subject and object arguments and noted whether the verb was marked for both subject and object, only for subject, only for object, or for neither. Table 15.2 shows the distribution of types of agreement marking across the verb stems.

In addition, we found that *International Sign* marks verb agreement using not only movement between spatial loci, but also using eyegaze and reference shifting for marking complex grammatical relations. This variety of agreement devices may be used in concert to mark multiple arguments on different verbs across more than one clause or sentence. (1) and (2) illustrate the various agreement devices used across two connected utterances in *International Sign*, as produced by one of our two lecturers. See the Appendix for a description of our transcription conventions.

- (1) GET-TOGETHER<sub>3i</sub> LOOK-AT<sub>3j</sub> EDUCATION PRO<sub>3j</sub>  
 ‘(The Deaf community) should get together and go examine the educational system.’

RS<sub>3k</sub>

\_\_\_\_\_ eyegaze<sub>3i</sub>    \_\_\_\_\_ eyegaze<sub>3j</sub>

- (2) GOVERNMENT GATHER-INFO<sub>3i</sub> SAY-OK-TO<sub>3i</sub> CHANGE<sub>3j</sub>  
 ‘The government should gather information (from the community).  
 Then they would have some agreement (with the community) and  
 make changes (in the educational system).’

(1) shows that agreement with two different noun arguments is marked by the spatial loci *i* and *j* in the inflected verbs (locus *i* = ‘the Deaf community’

TABLE 15.2  
Distribution of Subject and Object Agreement Marking

	<i>Lecturer A</i>	<i>Lecturer B</i>
Total verbs	28	28
Total usages	209	109
Unmarked	98	34
Subject agreement	—	—
Object agreement	84	68
Subject and object agreement	27	7

and locus  $j$  = 'the educational system'). (2) shows that a third noun ('the government') is introduced by the reference shifting of the signer's body to a new posture, thus setting up locus  $k$ . The three loci ( $i$ ,  $j$ , and  $k$ ) are used in verb inflections throughout the sentence to express various relations of the three arguments. The reference shift of the signer's body to locus  $k$  establishes the government as the subject of the sentence, while the signer's eyegaze toward the locus  $i$  identifies the Deaf community as the object for the first two verbs, and the eyegaze to the locus  $j$  during the last verb indicates the educational system is the object for that verb. These sentences illustrate how International Sign makes use of a number of different types of devices to mark complex relations among arguments shared by different verbs, similar to those used by other, full signed languages (Ahlgren & Bergman, 1990; Bos, 1990; Brennan, 1981; Deuchar, 1983; Engberg-Pedersen, 1986; Hansen & Engberg-Pedersen, 1984; Pizzuto, 1986; Wilbur, 1987). All of these complex syntactic and morphological structures are unexpected in a pidgin.

In sum, the use of apparent agreement morphology, its distribution, and the variety of agreement devices found in our International Sign data seem as complex as those found in full sign languages. This is quite different from spoken pidgins, in which it is typical for there to be virtually no morphology used at all (Holm, 1988; Romaine, 1988; Todd, 1990).

### WORD ORDER IN INTERNATIONAL SIGN

We examined the use of word order in International Sign by noting the ordering of each transitive verb and its nominal arguments. We found that the two signers did not randomly generate different word orders. Instead, they both frequently arranged lexical signs in an SVO order. However, other word orders occurred as well, which resemble pro-drop and object fronting structures found in full sign languages (see Table 15.3). Only very rarely did entirely distinct or unrelated word orders occur (as shown in Table 15.3, less than 2% of the corpus).

Pro-drop sentences occur only in contexts where old information is involved, or where the arguments are marked with verb agreement. For ex-

TABLE 15.3  
Distribution of Word Order Patterns

		Lecturer A	Lecturer B
Total number of sentences with transitive verbs		209	109
<i>Basic word order:</i>			
Subject, verb and object	(S V O)	16	18
<i>Pro drop sentences:</i>			
Subject NP drop	( V O)	31	12
Object NP drop	(S V )	53	28
Subject NP & object NP drop	( V )	83	40
<i>Object fronting sentences:</i>			
Object before subject and verb	(O S V)	4	3
Object before verb	(O V)	18	6
<i>Other word orders</i>			
	(S O V)	1	1
	(V O S)	1	—
	( V S )	1	—
	(IO V DO)	1	—
	(DO V IO)	—	1

ample, if several sentences in a sequence all refer to the same arguments, then the subject and object may be deleted in the later part of the sequence. To illustrate this, note that (2) has several verbs arranged in a sequence without nouns. Movement of the object to sentence-initial position appears in other contexts where the object is in focus. Such processes are similar to those found in ASL (Fischer, 1975, 1978; Liddell, 1978, 1980; Lillo-Martin, 1985; Padden, 1988; Petronio, 1991) and many European signed languages (Coerts, 1990; Deuchar, 1983).

In sum, our lecturers most consistently used an SVO word order, as is common in spoken language pidgins. However, the pro-drop and object fronting found in our data are more typical of creoles or full languages than of pidgins. As with verbal morphology, these word order patterns are unexpected in a pidgin.

### POSITION OF THE NEGATIVE MARKER AND ITS FUNCTION

We chose to analyze negation because negative utterances are easy to identify, often being accompanied by a headshake and having manual negative gesture forms similar to the natural negative gestures of hearing Europeans and Americans. Sentential negation in a full signed language like ASL involves the preverbal position of the negator in the sentence, with a headshake that spreads over its c-command domain (Aarons et al., 1992; Webb, 1994). In contrast, negation in spoken pidgins is limited to placement at the beginning

or end of the sentence only (Kay & Sankoff, 1974; Koopman & Lefebvre, 1981). Thus, an analysis of negation in International Sign allows us to compare its structure to that of full signed languages, as well as to that of spoken pidgins.

We found that the two lecturers used the same negative forms, meanings and structures despite their different linguistic backgrounds. We therefore combined Lecturer A's 50 instances of negation and Lecturer B's 44 instances into a single data pool of 94 negations. Our analysis revealed five classes of negative markers, based on similar forms and meanings, as illustrated in the first column of Table 15.4. The typology of each class is listed in the second column. Each of these types occurred in specific positions within the sentence, as shown in the third column of Table 15.4. The frequency of negative sentences using each type of negative marker is shown in the last column.

The first type of negator used by both signers is the post-verbal negator, which consists of a palm-up gesture.<sup>1</sup> This negator is articulated with one or two hands, and always immediately follows and negates a verb, as in (3). We gloss this form as "palm-up" (see the first row of Table 15.4). Nine of these followed the verb KNOW and one followed the verb HAVE.

- (3)  $\frac{\text{PRO}_{3+\text{allocative}}}{\text{t}}$   $\frac{\text{PRO}_1 \text{ KNOW palm-up}}{\text{hs}}$   
 'As for them, I don't know.'

The second negator type is the post-lexical quantifier, which we gloss as NONE or NOTHING. It always follows a noun and quantifies it, as shown in (4). As Table 15.4 shows, the signers used two different phonological forms for this type. One has a closed handshape with the finger tips touching the tip of the thumb, and is articulated with one or two hands, with single or repeated side-to-side movement. The other form has both hands articulated in a flat handshape, palm up, and the hands move rapidly apart to the side. This gesture may be accompanied by a facial gesture of blowing into the hands.

- (4) LONG-TIME-PAST RESEARCH NONE  
 'For a long time, there has been no research.'

These first two types of structures both have negative markers closely associated with a word. The remaining types of negative markers share a set of positions in the sentence, and negate an entire phrase or clause. These clausal negations are marked with either the nonmanual headshake or man-

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<sup>1</sup>Palm-up gestures were also used by both lecturers as independent lexical signs, not associated with a verb, to express non-negative meanings, such as forming a question or accompanying a shrug.

TABLE 15.4  
Typology and Frequency of the Negative Marker

<i>Form</i>	<i>Typology</i>	<i>Position</i>	<i>Frequency</i>
 Manual negator: palm-up	Postverbal negator	V Neg	(10)
 Two variants of NONE	Postlexical Quantifier	N Neg	(13)
 Headshake: <u>hs</u>	Simultaneous Headshake	<u>hs</u> [ ]	(9)
 Headshake: <u>hs</u>	Postclausal Headshake	[ ] <u>hs</u>	(12)
 Three variants of NOT	Postclausal Negator	[ ] Neg	(37)
 Two variants of CANNOT	Preverbal Negator	Neg [ ]	(5)
 Two variants of CANNOT	Double Negator	Neg [ ] Neg	(8)

ual gestures, and often both. We found that we could classify clausal negations in terms of their positions within the sentence.

Some negative utterances are marked by a headshake and do not contain any manual negative marker. Headshakes may be articulated simultaneously with a phrase or sentence. These are classified as simultaneous headshake. An example of simultaneous headshake negation is (5), where the headshake cooccurs with and negates the sentence. Such a structure has been reported in a number of full signed languages including ASL (Liddell, 1978), French Sign Language (Rondal, Henrot, & Charlier, 1986), Chilean Sign Language (Pilleux, 1991), and Sign Language of the Netherlands (Coerts, 1990).

- (5) hs  
DEAF TEACHER PRO<sub>1</sub> LIKE  
'I don't like deaf teachers.'

In other cases, headshakes do not co-occur with the clause, but instead follow the clause being negated, as in (6). Such negators are classified as post-clausal headshake.

- (6)  $\overline{\text{BRING-IN}}_{3+\text{habitual}} \text{ INTERPRETER GREAT} \text{ } \overline{\text{rq}} \text{ } \underline{\text{hs}}$   
 'We do not often bring in qualified interpreters.'

The other clausal negation constructions contain a manual negation marker, which also may be accompanied by a headshake.<sup>2</sup> We identified two classes of clausal manual negators found in our data on the basis of their meaning, function, and placement within the sentence (see the bottom row of Table 15.4). One class of manual negators has the meaning and function equivalent to English *not*, so we have glossed them as NOT. This class has a few different forms that are all found in the natural gesture of hearing and deaf alike, to express negation (Morris, 1977). The handshape is either a flat open handshape or a closed hand with extended index finger. These gestures typically have either a single or repeated side-to-side movement, and are articulated with one hand or two. In addition to these forms, Lecturer B articulated NOT on two occasions with the same form as the ASL sign NO, where the index and middle fingers are extended straight, and together close to contact the thumb tip. For the other class of negators, the two lecturers used a negative modal meaning *cannot*, but each used a very different phonological form. For Lecturer A, CANNOT was articulated like the Gestuno sign IMPOSSIBLE, with both hands in closed fists, starting at separate points in space, coming together and separating again. In contrast, Lecturer B articulated CANNOT like the ASL sign CANNOT, where both hands have the index fingers extended, and the dominant index comes down and strikes the tip of the nondominant index.

We propose that these two types of manual negative markers share one syntactic structure, in which there are two available sentential positions for negative markers, either or both of which may be used. The third column, bottom row of Table 15.4 shows the three related structures that make use of these two types of manual negation markers. The most frequently used structure in our data is the postclausal negator structure, which consists of a clause followed by a manual negator, either a NOT, as in (7), or the modal CANNOT.

- (7)  $\text{ORALISM } \overline{\text{IMPORTANT NOW}} \text{ } \overline{\text{rq}} \text{ } \underline{\text{hs}} \text{ } \text{NOT}$   
 'Oralism is not important now.'

Only Lecturer B made use of the pre-verbal negation structure, where the negative marker precedes the verb, as it does in ASL. The NOT and the modal CANNOT were both used as preverbal negators, as in (8) and (9).

<sup>2</sup>Because the headshakes in these structures are optional, they are not represented in the placement schematics of Table 15.4. However when the headshakes occur, they coincide with the articulation of the manual negator.

- (8) PRO<sub>1</sub>  $\overline{\hspace{1cm}}$ <sup>hs</sup> NOT SHOW<sub>3</sub> HEARING PRO<sub>3</sub>  
 'I will not show (my work) to hearing people.'
- (9) YOU CANNOT sit-and-cross-arms  
 'You just can't sit back.'

The third structure is the double negator structure, which negates a clause or phrase using two identical manual negative markers: one that immediately precedes the verb and one that immediately follows the clause or phrase. The scope of the negation is thus the constituents found between the two negative markers. The NOT marker, as in (10) and (11), and the negative modal CANNOT were used in these double negator structures. This type of structure is familiar to sign language linguists. French Sign Language and Chilean Sign Language both use a doubled negative marker that appears both before and after the negated constituents (Rondal et al., 1986; Pilleux, 1991).

- (10) NOT  $\overline{\hspace{2cm}}$ <sup>rs</sup> TEACH<sub>3</sub> HOW-TO-SIGN NOT  
 'Don't teach them (the children) how to make signs.'
- (11) PRO<sub>3i+pl</sub> HEARING  $\overline{\hspace{1cm}}$ <sup>hs</sup> NOT I KNOW! I KNOW!  
 $\overline{\hspace{2cm}}$ <sup>rs</sup>  $\overline{\hspace{1cm}}$ <sup>hs</sup> INTERRUPT<sub>3j</sub> CRITICIZE NOT  
 'The hearing (team members) are not there to understand the problem and then take over.'

If we consider the three clausal negation structures described here to be related, then we are left with a total of two types of clausal negation: simultaneous negation, which marks its scope with the simultaneous articulation of the nonmanual headshake marker, and preverbal/postclausal negation, which use negation markers sequentially (NOT, CANNOT, and headshake) to mark a clause as negative by positioning the markers before and/or after the verb phrase or both. This contrast in structure is supported by the complementary distribution of the headshake scope in relation to the manual negator. A negated clause is marked by the headshake in the simultaneous headshake structure (see (5)), while in the preverbal/postclausal negation structures, the negators may either both have a headshake ((11)) or no headshake ((10)), but a headshake never marks the negated clause itself. The negated clause may bear other grammatical markings, including rhetorical question (as in (6)) and reference-shifting (as in (10)).

In sum, our analysis of negative sentence structures in International Sign reveals a limited set of negative devices similar in structure and form to

those used in full signed languages. This variety of negators, with different functions and meanings, is uncharacteristic of pidgins. In fact, International Sign patterns like creoles or full sign languages in permitting preverbal and double placement of the negator, whereas simple pidgins generally permit only a single negator placed either before or after the sentence (Kay & Sankoff, 1974; Koopman & Lefebvre, 1981; Holm, 1988). In addition, International Sign uses other nonmanual markers, like those found in other signed languages, to mark complex sentence structures such as topicalized sentences, focus structures (as re-named by Petronio, 1991; these were previously called rhetorical questions), and reference-shifting. These syntactic complexities are not characteristic of young pidgins, but do appear in expanded pidgins (Todd, 1990).

### CONCLUSION

The objective of the current study of International Sign is to provide new information on the natural evolution and structure of a contact language that has developed entirely between and among signed languages. Our goal was to investigate the linguistic status of International Sign, and to compare this signed contact language with spoken contact languages and signed-spoken contact languages, to determine whether there is an influence of modality on language contact.

In regard to the linguistic status of International Sign, we began with two alternative hypotheses: (a) users may be employing an expanded type of nonlinguistic gesture and pantomime for communication, or (b) their utterances may be rule-governed grammatical structures. Our analysis provides evidence in support of the latter hypothesis. We found International Sign verb agreement, word order, and negation each to be systematic and rule-governed.

This in turn raised a subsequent question, concerning whether the grammar of International Sign is comparable to that of a spoken language pidgin, or is it more like an expanded pidgin, a creole, or even a full language. By circumstances of usage, International Sign is like a typical pidgin, with occasional usage in contact among different language groups, and no native speakers or even extended continuous usage. However, our linguistic analyses have shown that the structure of International Sign is much more complex than a typical pidgin, and indeed is more like that of a full sign language.

In regard to morphology, we have found that verbs in International Sign are marked with inflections for person, number, and aspect, very similar to those found in fully developed signed languages. Furthermore, verbs accept complex patterns of inflection in an implicational hierarchy for multiple agreement marking, which is also characteristic of many full signed languages

(Supalla, forthcoming). This is radically different from what we know about typical spoken pidgins, which involve almost no use of inflectional morphology (Romaine, 1988; Todd, 1990).

As for syntactic structure, we have found an underlying SVO word order in International Sign sentences. However, there are systematic word order variations generated by subject and/or object deletion and object fronting, which are more characteristic of creoles and mature languages than pidgins. Our analysis of negation shows that, contrary to expectations, there are five types of negators, each specialized in function and placement in the negative sentence, which are very similar to those found in full signed languages. This negation system is more characteristic of a creole or full language than a pidgin, where the negator is generally limited to one form that appears only before or after the sentence.

On the basis of our findings, we conclude that many morphological and syntactic devices have transferred from full native sign languages to the contact register among signers of different sign language backgrounds. We cannot say at this time if there is any reduction in this transfer of devices, as we would need to compare those structures to those in the particular native sign languages of the lecturers. Nevertheless, it appears to be the case that this transfer is quite extensive. We propose that this transfer of grammatical devices is due to the high degree of similarity in the grammatical and morphological organization of the languages in contact.<sup>3</sup> The similarity between European and North American sign languages has three possible explanations: it may be due to the fact that all sign languages are never far from their pidgin/creole origins, to historical relatedness of the languages in contact, or to an effect of modality on the degree of language variation.

Signed languages and their users have some unique characteristics that may account for the unusual grammatical and morphological characteristics of International Sign. First, most sign language users are first generation users of the language, and therefore, their native signing children often acquire it as a creole (Fischer, 1978; Gee & Goodhart, 1985; Gee & Mounty, 1986; Newport, 1981; Singleton, 1989; Singleton & Newport, 1992). Sign languages are thus never many generations away from their pidgin/creole origins, and this may account for their similarity in structure to creoles. Alternatively, the similarity among the European and North American signed languages may be due to historical relatedness of the languages (Fischer, 1991). Finally, this similarity may be due to constraints of the modality on language typology. Further research is needed to determine whether the range of linguistic variation among signed languages is more restricted than that of spoken languages.

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<sup>3</sup>International Sign was influenced very little by contact with South American, Asian, or African sign languages at the time that we collected our data. We therefore assume in this chapter that it has developed within the European community, with some contact with North Americans.

Whichever of these explanations is correct, however, we believe that there is great similarity of grammatical structure in the languages contributing to International Sign, and that the complexity of International Sign is the result of this similarity. If this hypothesis is correct, the development of International Sign can be seen as comparable to a koine. Koinés develop between spoken languages where the languages in contact are extremely similar (Holm, 1988; Romaine, 1988); the overlaps in both form and structure among the contributing languages contribute to the greater complexity of the resulting koine.

Interestingly, if we compare the three types of contact language in the signed modality that we have discussed, we find that sign languages may permit a wide range of contact languages that display different amounts of grammatical simplification: PSE, the signed-spoken contact language, has very few morphemes and syntactic devices imported from ASL and many borrowed from English; the contact signing register used between deaf American signers has incorporated more grammatical and morphological features of ASL; and International Sign, a signed-signed pidgin, has highly complex morphology and syntax similar to that found in the various full languages in contact. We propose that the kind of reduction that each contact language displays is due to selective inclusion of different components of the grammar. The degree of reduction would depend on the similarities and differences of the languages involved, as well as on the linguistic competence of the participants in the contact situation. Rather than a single innate or universal pattern governing reduction of a full language, we propose the idea that reduction is based on shared characteristics of the contact languages. If this proposal is supported by further research, the study of signed contact languages, and in particular International Sign, may shed new light on our understanding of language universals, evolution, and diversity.

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### REFERENCES

- Aarons, D., Bahan, B., Kegl, J., & Neidle, C. (1992). Clausal structure and a tier for grammatical marking in American Sign Language. *Nordic Journal of Linguistics*, 15(2), 103–142.
- Ahlgren, I., & Bergman, B. (1990). Preliminaries on narrative discourse in Swedish Sign Language. In S. Prillwitz & T. Vollhaber (Eds.), *Current trends in European sign language research: Proceedings of the third European congress on sign language research*. Hamburg: Signum-Press.
- Bode, L. (1974). Communication of agent, object, and indirect object in signed and spoken languages. *Perceptual and Motor Skills*, 39, 1151–1158.

- Bos, H. (1990). Person and location marking in Sign Language of the Netherlands: Some implications of a spatially expressed syntactic system. In S. Prillwitz & T. Vollhaber (Eds.), *Current trends in European sign language research: Proceedings of the third European congress on sign language research*. Hamburg: Signum-Verlag.
- Brennan, M. (1981). Grammatical processes in British Sign Language. In B. Woll, J. Kyle, & M. Deuchar (Eds.), *Perspectives on British Sign Language and deafness*. London: Croom Helm.
- British Deaf Association. (1975). *Gestuno: International sign language of the deaf*. The revised and enlarged book of signs agreed and adopted by the Unification of Signs Commission of the World Federation of the Deaf. London: British Deaf Association.
- Coerts, J. (1990). The analysis of interrogatives and negations in Sign Language of the Netherlands. In S. Prillwitz & T. Vollhaber (Eds.), *Current trends in European sign language research: Proceedings of the third European congress on sign language research*. Hamburg: Signum-Verlag.
- Deuchar, M. (1983). Is British Sign Language an SVO language? In J. Kyle & B. Woll (Eds.), *Language in sign: An international perspective on sign language*. London: Croom Helm.
- Engberg-Pedersen, E. (1986). The use of space with verbs in Danish Sign Language. In B. T. Tervoort (Ed.), *Signs of life: Proceedings of the second European congress on sign language research*. Amsterdam: The Institute of General Linguistics of the University of Amsterdam.
- Fischer, S. (1975). Influences on word order change in ASL. In C. Li (Ed.), *Word order and word order change*. Austin: University of Texas.
- Fischer, S. (1978). Sign languages and creoles. In P. Siple (Ed.), *Understanding language through sign language research*. New York: Academic Press.
- Fischer, S. (1991). Similarities and differences among sign languages: Some how's and why's. *Proceedings of the eleventh world congress of World Federation of the Deaf*. Tokyo: Japanese Federation of the Deaf.
- Gee, J. P., & Goodhart, W. (1985). Nativization, linguistic theory, and deaf language acquisition. *Sign Language Studies*, 49, 291–342.
- Gee, J. P., & Mountry, J. L. (1986). Nativization, variability, and style shifting in the sign language development of deaf children of hearing parents. In P. Siple & S. Fischer (Eds.), *Theoretical issues in sign language research, Vol. 2: Psychology*. Chicago: University of Chicago Press.
- Hansen, B., & Engberg-Pedersen, E. (1984). Danish Sign Language. In F. Loncke, P. Boyes-Braem, & Y. Lebrun (Eds.), *Recent research on European sign languages*. Lisse: Swetz & Zeitlinger.
- Holm, J. (1988). *Pidgins and creoles* (Vols. 1 and 2). New York: Cambridge University Press.
- Jordan, I. K., & Battison, R. (1976). A referential communication experiment with foreign sign languages. *Sign Language Studies*, 10, 69–80.
- Kay, P., & Sankoff, G. (1974). A language-universals approach to pidgins and creoles. In D. DeCamp & I. Hancock (Eds.), *Pidgins and creoles: Current trends and prospects*. Washington, DC: Georgetown University Press.
- Klima, E., & Bellugi, U. (1979). *The signs of language*. Cambridge, MA: Harvard University Press.
- Koopman, H., & Lefebvre, C. (1981). Haitian Creole pu. In P. Muysken (Ed.), *Generative studies on creole languages*. Dordrecht: Foris.
- Liddell, S. (1978). Nonmanual signals and relative clauses in American Sign Language. In P. Siple (Ed.), *Understanding language through sign language research*. New York: Academic Press.
- Liddell, S. (1980). *American Sign Language syntax*. The Hague: Mouton.
- Lillo-Martin, D. (1985). Null pronouns and verb agreement in American Sign Language. In S. Berman, J. W. Choe, & J. McDonough (Eds.), *NELS 15*. Amherst, MA: GLSA.
- Lucas, C., & Valli, C. (1992). *Language contact in the American deaf community*. San Diego: Academic Press.

- Moody, W. (1987). Jean-Fernand Berthier. In J.V. van Cleve (Ed.), *Gallaudet encyclopedia of deaf people and deafness*. New York: McGraw-Hill.
- Moody, W. (1989). La communication internationale chez les sourds. *Rééducation Orthophonique*, 17, 213–224.
- Morris, D. (1977). *Manwatching*. New York: Harry N. Abrahams.
- Newport, E. L. (1981). Constraints on structure: Evidence from American Sign Language and language learning. In W. A. Collins (Ed.), *Aspects of the development of competence: Minnesota symposium on child psychology* 14. Hillsdale, NJ: Lawrence Erlbaum Associates.
- Padden, C. (1988). *The Interaction of morphology and syntax in American Sign Language*. New York: Garland.
- Petronio, K. (1991). A focus position in ASL. *MIT Working Papers*, 14, 211–225. Department of Linguistics and Philosophy, MIT.
- Pilleux, M. (1991). Negation in Chilean Sign Language. *Signpost*, winter, pp. 25–28.
- Pizzuto, E. (1986). The verb system of Italian Sign Language (LIS). In B. T. Tervoort (Ed.), *Signs of life: Proceedings of the second European congress on sign language research*. Amsterdam: The Institute of General Linguistics of the University of Amsterdam.
- Reilly, J., & McIntire, M. L. (1980). American Sign Language and Pidgin Sign English: What's the difference? *Sign Language Studies*, 27, 151–192.
- Romaine, S. (1988). *Pidgin and creole languages*. London: Longman.
- Rondal, J., Henrot, F., & Charlier, M. (1986). *Le langage des signes*. Brussels: Mardaga.
- Singleton, J. (1989). *Restructuring of language from impoverished input: Evidence for linguistic compensation*. Unpublished doctoral dissertation, University of Illinois at Urbana-Champaign.
- Singleton, J., & Newport, E. L. (1992). *When learners surpass their models: The acquisition of American Sign Language from impoverished input*. Manuscript under review.
- Supalla, T. (forthcoming). *An implicational hierarchy in verb agreement in American Sign Language*. Manuscript under review.
- Supalla, T., & Webb, R. (forthcoming). *Structure of an international sign language pidgin*. Manuscript under review.
- Todd, L. (1990). *Pidgins and creoles*. London: Routledge.
- Webb, R. (1994). *Negation in ASL*. Unpublished manuscript. University of Rochester, Rochester, New York.
- Webb, R., & Supalla, T. (in press). Negation in International Sign. In I. Ahlgren, B. Bergman, & M. Brennan (Eds.), *Proceedings of the fifth international symposium on sign language research*. Durham, England: International Sign Linguistics Association.
- Wilbur, R. (1987). *American Sign Language, Linguistic and applied dimensions* (2nd edit.). Boston: College Hill Press.
- Woll, B. (1990). International perspectives on sign language communication. *International Journal of Sign Linguistics*, 1(2), International Sign Linguistics Association.
- Woodward, J. C., Jr. (1973). Some characteristics of Pidgin Sign English. *Sign Language Studies*, 3, 39–46.
- World Federation of the Deaf. (1959). *First contribution to the international dictionary of the language of signs, conference terminology*.
- World Federation of the Deaf. (1965). *Second contribution to the international dictionary of the language of signs, conference terminology*.

## APPENDIX

**Transcription Conventions**

International signs are glossed using capital letters. When more than one English word is required to gloss a single sign, the words are joined by hyphens. Small letters are used to describe the phonological form of signs such as “sit-and-cross-arms,” or “palm-up.”

Pronouns are glossed as PRO with a numerical subscript indicating first, second or third person. When there is more than one third person pronoun in an utterance, a letter (PRO<sub>3k</sub>) indicates identity. There may be additional subscripts such as PRO<sub>3+pl</sub> meaning third person plural pronoun, or PRO<sub>3+allocative</sub> meaning various unspecified third persons.

Verbs may also have subscripts indicating agreement with first, second or third person, and aspectual inflections. Subscripts preceding the verb indicate subject agreement; those following the verb indicate object agreement. See Klima and Bellugi (1979), Padden (1988), and Supalla (forthcoming) for a full description of verbal inflections.

Nonmanual markers are transcribed using a line over the constituents during which they occur. The letter at the end of the line indicates the type of nonmanual marker. This may also be followed by a number and a letter indicating person and identity which matches similar agreement features on accompanying verbs. If two non-manual markers are used simultaneously, then two lines appear in the transcription.

_____t	topicalization
_____q	question
_____hs	headshake
_____rq	rhetorical question
_____rs	reference shift
_____eyegaze <sub>3i</sub>	eyegaze to the locus for referent 3i