How does Modality Contribute to Linguistic Diversity?

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Introduction
Large-scale studies on linguistic diversity such as Nichols (1992) and Greenberg (1963) have attempted to “establish typologically, historically, and areally stable features in the world’s languages [and] to sort out genetic, geographical and universal determinants of linguistic patterning” (Nichols 1992). These studies generally sample a wide variety of the world’s languages, from many different stocks and families with the assumption that a more diverse sample leads to a more explanatory description/typology. Unfortunately, studies such as Nichols and Greenberg have focused only on spoken languages. So much more insight into linguistic diversity could be gained by examining languages in other modalities, such as the visual-gestural modality of signed languages.

In this paper I examine the distribution of one particular morphological feature, inclusive/exclusive marking, among both spoken languages and signed languages, to see if this feature patterns similarly within both types of languages. If the same patterns occur, then perhaps including signed languages in a language typology is not necessary. However, if different patterns occur, this would suggest that including signed languages in a study of diversity is extremely important, because without them the description would not be an accurate generalization about all of the world’s languages.

The Category of Person
Before looking at inclusive/exclusive marking, it is necessary to understand the linguistic category of person. According to Lyons (1968), “the category of person is clearly definable with reference to the notion of participant-roles: the ‘first’ person is used by the speaker to refer to himself as a subject of discourse; the ‘second’ person is used to refer to the hearers and the ‘third’ person is used to refer to persons or things other than the speaker and hearer.” In categories of the singular, this definition is straightforward enough. First
person denotes the speaker, second person denotes the addressee, and third person denotes someone/something other than the speaker or the hearer. In categories of the plural, however, Lyons’ definition is only partly sufficient. Presumably, second person plural denotes more than one addressee and third person plural denotes more than one person or thing not involved in the speech act. However, first person plural typically does not follow this pattern.

**First Person Plurals**

Unlike second person and third person, the first person plural category is somewhat anomalous. The English first person plural pronoun ‘we’, for example, is not plural in the same sense that an English noun is plural. ‘I’ refers to the speaker, but ‘we’ does not mean ‘more than one speaker’. Benveniste (1971) notes: “If there cannot be several ‘I’s conceived of by an actual ‘I’ who is speaking, it is because ‘we’ is not a multiplication of identical objects but a junction between ‘I’ and the ‘non-I’, no matter what the content of this ‘non-I’ may be.” This is not only true of English, but of other languages as well. According to Zwicky (1977), “no language has been reported with multiple speaker morphemes distinct from speaker plus other morphemes.” He also mentions that situations do arise in which there are truly multiple speakers (Greek choruses, for example). In these cases, the first person plural form is used, but in no known language is there ever a distinct morpheme used for the multiple speaker reading.

Given that the first person plural category can be ambiguous as to how many speakers are included, it should not be surprising that some languages encode other information instead (e.g., information about included addressees or non-addressed third parties). This is what has happened in languages that have separate categories for inclusive and exclusive pronouns.

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1 Actually, even these assumptions are not completely accurate. For example, the second person plural form *y'all* in some English dialects can be used to address only one person in some contexts.
Inclusive/Exclusive

Forchheimer (1953) surveys the person systems of 71 languages, classifying them according to person, number, complexity of morphological marking and inclusive/exclusiveness. Over half of those 71 languages (45, to be exact) have a distinction between inclusive and exclusive. This introduces the question: what determines whether or not a language has an inclusive/exclusive distinction?

Distribution of Inclusive/Exclusive Across Languages

According to Nichols (1992), there is a strong correlation between the inclusive/exclusive opposition and geography. That is, the frequency of languages that have the inclusive/exclusive distinction varies greatly across continents, with the greatest frequencies in Australia and the New World, such that Old World < New World < Pacific. There is also a strong genetic correlation; the inclusive/exclusive distinction tends to occur within entire language families. For example, the following language families make the inclusive/exclusive distinction: Austroasiatic, Austronesian, Daic, Dravidian, Algonquian, and many, many others. However, as Nichols points out, the inclusive/exclusive distinction can be spread by diffusion. Therefore, the main correlation here is areal rather than genetic. 2

Nichols reports that there is no correlation between the inclusive/exclusive distinction and any typological features. Although Klimov (1977) claims that stative-active languages tend to have the distinction more than the other alignment types (e.g., ergative or accusative languages), Nichols notes that this may be artifactual based on the fact that most stative-active languages are in the New World or Pacific. Thus, again, the main correlate for inclusive/exclusive in spoken languages seems to be geography.

So according to Nichols (1992), if we look at the distribution of inclusive/exclusive across languages, we should see that the languages of the Pacific show this distinction more

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2 It should be noted here that although the inclusive/distinction is primarily an areal phenomenon, the genetic connection is strong enough that when the distinction is in a language family, it is not likely to be lost by diffusion from that family.
frequently than do languages of the New World, which in turn show it more frequently than languages of the Old World. This represents a geographical hierarchy for inclusive/exclusive.

Other hierarchies arise when we break down the inclusive/exclusive distinction by number rather than geography. Combining the number and inclusive/exclusive data from Forchheimer (1953) and Ingram (1978) results in the hierarchical pattern shown in Table (1).

<table>
<thead>
<tr>
<th>Type</th>
<th>Sing</th>
<th>Plural</th>
<th>Dual</th>
<th>Trial</th>
<th>Languages</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>I</td>
<td>we-incl</td>
<td>Ø</td>
<td>Ø</td>
<td>Malay, Tagalog, Ful, Tamil, Ordos Mongol, Algonquian, Somali, Garo, Purik, Baltic, Chitkuli, Melanesian Pidgin English, Telegu, Tungus, Nkosi</td>
</tr>
<tr>
<td></td>
<td></td>
<td>we-excl</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>I</td>
<td>we-incl-ltd</td>
<td>Ø</td>
<td>Ø</td>
<td>Sierra Popoluca³</td>
</tr>
<tr>
<td></td>
<td></td>
<td>we-incl-gen</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>we-excl</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>I</td>
<td>we</td>
<td>we-2-incl</td>
<td>Ø</td>
<td>Lower Kanauri, Coos, Ewe</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>we-2-excl</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>I</td>
<td>we-incl</td>
<td>we-2-incl</td>
<td>Ø</td>
<td>Southern Paiute, Lakota, Winnebago</td>
</tr>
<tr>
<td></td>
<td></td>
<td>we-excl</td>
<td>we-2-incl</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>I</td>
<td>we-incl</td>
<td>we-2-incl</td>
<td>Ø</td>
<td>Kanauri, Hawaiian, Shoshone, Chinook, Siuslawan, Mohawk, Central Kanauri, Mundari, Otomi, Dyirringan, Kamilaroi, Saibalgal, Bongu, Kate, Yokuts, Kiowa</td>
</tr>
<tr>
<td></td>
<td></td>
<td>we-excl</td>
<td>we-2-excl</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>I-incl</td>
<td>we-incl</td>
<td>we-2-incl</td>
<td>Ø</td>
<td>Rotuman</td>
</tr>
<tr>
<td></td>
<td>I-excl</td>
<td>we-excl</td>
<td>we-2-excl</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>I</td>
<td>we-incl-ltd</td>
<td>we-2-incl-ltd</td>
<td>we-3-incl</td>
<td>Kele⁴</td>
</tr>
<tr>
<td></td>
<td></td>
<td>we-incl-gen</td>
<td>we-2-incl-gen</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>we-excl</td>
<td>we-2-excl</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>I</td>
<td>we-incl</td>
<td>we-2-incl</td>
<td>we-3-incl</td>
<td>Nogogu, Worora</td>
</tr>
<tr>
<td></td>
<td></td>
<td>we-excl</td>
<td>we-2-excl</td>
<td>we-3-excl</td>
<td></td>
</tr>
</tbody>
</table>

Table (1) Distribution of the inclusive/exclusive distinction among spoken languages⁵

³Sierra Popoluca and Kele (Types 2 and 7, respectively) distinguish between limited inclusive (ltd) and general inclusive (gen); limited includes first and second (but not third) person, and general includes first, second, and third person. Since these two types of inclusive categories differ only in terms of the presence or absence of a third person, this suggests the possibility that there may be languages that have inclusive/exclusive distinctions in the second person (i.e., including or excluding the third person). Zwicky (1977) acknowledges the possibility of second person inclusive/exclusives, although he is not aware of any languages that have this particular distinction.

⁴See Footnote #3

⁵Notation: “incl” = inclusive; “excl” = exclusive; Ø indicates that the language(s) in question lack the number category/categories denoted by the column heading.
Inspection of Table (1) reveals that if a language marks the inclusive/exclusive distinction in the plural, it will also mark inclusive and/or exclusive in the dual, if that language has a dual category in the pronominal system (cf. Types 4, 5 and 6). Likewise, if a language marks the inclusive/exclusive distinction in the plural, it will also mark inclusive and/or exclusive in the trial, if that language has a trial category (cf. Types 7 and 8). Furthermore, if a language has an inclusive/exclusive distinction in the singular, it will also mark inclusive and exclusive in the dual and plural (and - we may speculate - the trial, although Forchheimer offers no example of a language that would fit this description). Thus we may propose the hierarchy shown in (2) for number in languages with the inclusive/exclusive distinction:

(2) Dual, Trial < Plural < Singular

Silverstein (1976) achieves this same hierarchical ordering by using a feature-based account of person and number. Categories in which certain features are neutralized are regarded as higher ranked on the hierarchy than categories in which those features are not neutralized. In one example, Silverstein uses the features [plural] and [restricted], where [+plural] indicates more than one referent and [+restricted] indicates that non-speaker individuals are “specified as unique and finitely enumerable.” These features act together to produce the categories *singular, dual, and plural*, where *singular* = [+plural, -restricted], *plural* = [+plural, -restricted], and *dual* = [+plural, +restricted]. By Silverstein’s unidirectional neutralization principle, then, the feature [restricted] will never be neutralized with respect to [plural]. In addition, Silverstein’s universal of hierarchization of features states that if a language uses one of the other features Y, Z, W, etc., then that language will necessarily use the neutralized feature X. Thus, Silverstein claims, “if a language distinguishes [+restricted]...
‘duals’ from [-restricted] other numbers, then it always distinguishes [+plural] ‘non-singualrs’ from [-plural] ‘singulars’.” This is essentially the same as the hierarchical statement Dual < Plural < Singular. To extend Silverstein’s analysis to the data presented here in Table (1), [+restricted] would presumably include trials as well as duals, yielding the same hierarchy as in (2) above. Thus Silverstein’s analysis lends support to the markedness hierarchy proposed in (2).

Markedness
Looking at these hierarchical patterns of inclusive/exclusive brings up interesting questions about markedness. Which is more marked, inclusive or exclusive? Jacobsen (1980) notes that in Tübatalabal and Yokuts, the “inclusive formation contains fewer morphemes than the exclusive”. Also, many Australian languages have a simple form $ηali$ for first person plural inclusive and an augmented form of $ηali$ for first person plural exclusive (Dixon & Blake 1979). Since for these languages, the exclusive form is more complex than the inclusive form in terms of number of morphemes, one might assume that exclusive is more marked than inclusive.

However, other evidence suggests that the opposite may be true. In terms of person features, inclusive is more complex, since it includes the two positively specified (and hence, marked) features [+speaker] and [+addressee], while exclusive includes only the one feature [+speaker]. Thus, the inclusive is actually more complex in terms of features than the exclusive form, given this analysis of feature content and markedness. Even stronger evidence for inclusive as the marked category can be seen in Table (1) above. Languages that in certain categories mark either inclusive or exclusive (but not both) invariably mark inclusive, not exclusive (cf. Types 4 and 7). That is, no language among Forchheimer’s 45 languages marks exclusive without also marking inclusive. Taken together, these observations suggest that inclusive is marked while exclusive is unmarked in terms of first person - singular or plural (as in French “On va?”, entailing “Shall we go?”).
Inclusive/Exclusive Pronouns vs. Verbal Affixes

Some languages mark the inclusive/exclusive distinction in certain grammatical categories but not in others. For example, the language Otomi, which marks person with verbal affixes, has an inclusive/exclusive distinction for subject affixes, but not object affixes. Another example is Sierra Popoluca. The pronominal system of Sierra Popoluca does not distinguish between inclusive and exclusive, but the person markers on the verbs do have the inclusive/exclusive distinction. Forchheimer (1953) notes: “The plural need not be expressed in nouns and pronouns and may be expressed in the verb only. If the pronoun has the plural suffix, the verb need not take it. As in all similar languages, the free pronouns are less representative, and the affix pronouns are all-important.” Many languages have some categories that show more morphological distinctions than others; therefore, it should not be surprising that some languages have a categorial distinction/feature that may be overt in one morphological category (e.g., free pronouns) and not overt in others (e.g., verbal affixes).

Person in American Sign Language

So far this paper has focused on the inclusive/exclusive distinction in spoken languages. However, in order to make accurate crosslinguistic generalizations about the distribution of the inclusive/exclusive distinction in the world’s languages, it is also important to examine this distinction in signed languages. In fact, inclusive/exclusive distinctions do exist in sign languages, although very little is mentioned in the sign literature about this distinction; cf. Deuchar 1984 on inclusive/exclusive pronouns in British Sign Language and Wilbur & Patschke (in press) on nonmanual marking of inclusive/exclusive in ASL. The rest of this paper will be devoted to examining person systems (especially inclusive vs. exclusive marking) in American Sign Language (ASL) and other signed languages.
Previous Analyses of Person in ASL

The issue of person in ASL has been a matter of some controversy. Some researchers posit a three-way distinction in person (e.g., Friedman 1975), while some maintain only a two-way distinction between first and non-first (Meier 1990). Still others claim that there is no person in ASL at all, that pronominal reference in ASL is purely indexic (Lillo-Martin and Klima 1990, Liddell 1995). That is, pronominal reference works simply by pointing to the referent or referents. Since this applies whether the referent is a signer, addressee, other person, object, etc., these researchers claim that “there are no contrasts for person in ASL” (Lillo-Martin & Klima 1990).

Friedman (1975) assumes the standard view -- based on the category of person in spoken languages -- that first, second and third persons exist in ASL. Friedman admits that third person has two different types of manifestation: one in which the signer’s eyegaze is directed toward somewhere other than the referent, and one in which the signer points to herself/himself. The second possible manifestation would normally be interpreted as a pronoun referring to the signer. In cases of role shift, the signer points to the center of his/her chest to indicate the signer of the embedded clause, not the signer of the matrix clause; cf. Example (3) from Meier (1990):

(3) YESTERDAY INDEXs SEE FRIEND.

\[
\text{gaze } j
\]

\[
\text{[INDEXs LOOK-FOR[\text{Durational}] INDEX]}]
\]

‘Yesterday I saw a friend. “I’ve been looking for you,” she said.’

Meier uses the signer’s point to self (among other things) to argue for the existence of first person. “Both tokens of INDEXs necessarily refer to the signer of an utterance. The identity of the signer is determined from the discourse content” (Meier 1990). Meier also argues that there is no distinction between second-person and third-person, based on factors such as eyegaze and verb agreement. Previous researchers have noted that eyegaze is the
contrastive feature between second person and third person in ASL. Meier shows that, based on its distribution, eyegaze is an important conversational feature in sign, but it is not a grammatical marker of second person. Also, Meier notes that some agreement verbs lack first-person object forms, but there are no known lacking object forms for either addressee or non-addressed person. The same arguments for a two-person system (first vs. non-first person) have been made for other signed languages as well, such as Taiwan Sign Language (Smith 1990) and Danish Sign Language (Engberg-Pedersen 1993).

**ASL Pronominal System**

A personal pronoun in ASL normally takes the form of a pointing sign (index finger extended and other fingers closed) directed toward a distinct location or locations in space. By using a pointing sign, the signer associates the pronoun with this distinct location; the association between signs and locations in space is referred to as *indexing*. Any subsequent signs that point to a location established in this manner are interpreted as being coreferential. If the referent is physically present (e.g., the addressee, a non-addressed individual, or the signer him/herself), the signer points to the location of that referent. In the case of self-reference, the signer points to his/her chest. If the referent is not physically present (e.g., in the case of a non-addressed individual), the signer simply chooses a location in neutral space for that referent.7

This same principle of indexing applies to plural pronouns that refer to addressees or non-addressed individuals. To refer to more than one addressee, the signer uses a pointing sign with a sweeping motion that refers to all the addressees. Likewise, to refer to more than one non-addressed person, the signer uses a pointing sign with a sweeping motion that refers to all the non-addressed individuals, as in Figures (4a & b).

7 Other researchers have claimed that there are other factors that determine where a locus is established in signing space (e.g., discourse factors, semantic affinity with another referent, conventional location, etc.). Thus, the establishment of loci is rarely arbitrary (Engberg-Pedersen 1993).
Based on these forms, one might hypothesize that plural pronouns are formed by adding a sideways sweeping motion to the singular form. However, the first person plural pronoun is a bit different. The citation form (dictionary form) for the sign WE is a pointing sign that begins with contact on one side of the signer’s chest and ends with contact on the other side of the signer’s chest - see Figure (5) below. This form of the first person plural pronoun is idiosyncratic and is not indexic in the same sense that the other plural pronouns are (Meier 1990). Individual referents, other than the signer, are not indicated by the sign WE. As was established earlier, the entire category of first person plural is anomalous, so we might expect the formation of the plural in the first person to be different morphologically from the second or third persons, as it often is with spoken languages (Forchheimer 1953).

**First Person Pronouns in ASL**

Before identifying the forms of first person plurals in ASL, it may be helpful to look at what form plurals take in spoken languages; these forms are relevant to the following discussion of plural formation in ASL. According to Forchheimer (1953), some languages modify the first person singular pronoun for the plural (e.g., Chinese *uo* ‘I’ vs. *women* ‘we’). Other languages use an entirely separate lexical item for the plural (e.g., Korean *na* ‘I’ vs. *uri* ‘we’). Still other languages have what Forchheimer refers to as “‘composite plurals’, i.e., pluralic forms that are composed of two or more simple elements”. He cites as an example Melanesian Pidgin English, which has the composite plural form *jumi* ‘you plus me’.
Similar forms for plurals exist in ASL. For example, previous ASL literature (e.g., Baker-Shenk 1981) has identified the signs WE, OUR, the dual TWO-OF-US, and the number-incorporated signs (THREE-OF-US, FOUR-OF-US, etc.), shown below in Figures (5-8). All of these signs are among those that the informants in this study produced (study will be discussed below). While it is fairly clear that the number-incorporated signs are lexical plurals, the status of WE and OUR is not so clear. Meier (1990) claims that WE and OUR are lexical plurals because in both signs the hand contacts the chest twice. Thus, he claims, the form of these signs cannot be predicted based solely on what might be called a “plural marker” in other signs - that is, the sweeping horizontal movement (e.g., YOU vs. YOU-PL; HE/SHE/IT vs. THEY).

In addition to the general sign WE, there are also other plural pronominal forms that are more specific in one way or another.8 There is a dual form TWO-OF-US, which indexes the locations of two individuals (i.e., the signer and one other person). There is also a set of number-incorporated pronouns (e.g., THREE-OF-US, FOUR-OF-US, and FIVE-OF-US) which indicate a specific number of referents; see Figure (8) below (Baker-Shenk 1981). The difference between the dual form and the other number-incorporated forms will be discussed further below.

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8 Several of the informants also produced a form WE-GROUP (5 hand, palm orientation down, circular movement). For some signers this form only occurred with other first person plural signs; in these cases, this “pronoun” may be simply a locative modifier, meaning something like ‘in this area’. Given the unknown status of this form, it has not been included in this paper.
In addition, there are alternate ways of expressing plurality. For instance, a signer may point individually to each of the included referents (Baker-Shenk 1981). I call this form WE-COMP, because it is similar to the composite forms that Forchheimer (1953) describes (recall Melanesian Pidgin English *yumi* “you plus me”). Also, reference to all members of some specific set can be expressed by the sign A-L-L, a fingerspelled loan sign (Baker-Shenk 1981).
This sign can be used to indicate “all-of-us”. Finally, ASL has a first person plural possessive sign OUR that patterns similarly to the sign WE. More thorough descriptions of the phonetic form of these signs are given below.

**Pronoun Elicitation Study**

Given that the status of person in ASL is unclear, and that the category of first person plural tends to be crosslinguistically idiosyncratic, I designed a study to determine exactly what pronominal forms exist in ASL to indicate first person plural. Since the inclusive/exclusive distinction is widespread within certain spoken language families, the study was also designed to determine whether ASL has an inclusive/exclusive distinction. Overall, the study was devised to elicit the following information: a) forms of first person plural pronouns, b) whether any of those forms had an inclusive/exclusive distinction, c) whether agreement morphology on agreement verbs also exhibited an inclusive/exclusive distinction, d) the effect of distributive vs. collective forms on inclusive/exclusive morphology, and e) whether first person plural possessive pronouns exhibited the same patterns as non-possessive pronouns.

**Data Collection**

The study was designed to elicit pronominal forms that would be semantically consistent across the four informants; therefore, the same contexts and sentences were given to each informant. Furthermore, since the physical location of discourse participants is so crucial to how indices are set up in the signing space, visual aids were used with three of the four informants to help them imagine real-world discourse situations.

Videotaped data from 4 deaf informants were elicited, all native signers raised in

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9 There is a set of signs in ASL referred to as fingerspelled loan signs. These signs are based on fingerspelled words, but have acquired lexical status in ASL because of their idiosyncratic characteristics not typically found in normally fingerspelled words.

10 Interestingly, while there is a composite form of WE (WE-COMP), there is no composite form of the possessive pronoun OUR (i.e., there is no OUR-COMP). Multiple tokens of the possessive OUR are only used with the possessed noun, to indicate distributive, as described later in this paper.
signing households. The informants will be referred to here as A, B, G and K. A questionnaire was devised to elicit different forms of first person pronouns. The informants were asked to translate a total of 116 English sentences (64 each for A, B and K and 52 of those same 64 for G) - each with a specific context - into ASL. The sentences all used the English pronouns *we, us, or our*; since English does not have an inclusive/exclusive distinction, the informants had to rely on the context to determine the appropriate form of the ASL pronoun. In the context given with each sentence, the number of referents was manipulated so as to elicit the following forms: dual inclusive, dual exclusive, trial inclusive, trial exclusive, plural inclusive, and plural exclusive. For the dual and trial forms, the context specified two and three referents, respectively. For the plural forms, the context specified either *10 or more* or an indefinite *many* referents. Three of the informants - A, B and K - were provided with visual aids, a set of figurines that were put in front of them to represent where the referents were located in space. The figurines were occasionally moved from right to left and vice-versa to see what effect it had on the location of the pronoun.

Several different types of verbs were used in this study - specifically, one verb with no agreement morphology (*LIKE*) and four verbs that can inflect for subject and/or object agreement (*HELP, KISS, GIVE, and WATCH*). For each verb and context combination, first person plural pronouns were elicited in subject position and object position. Table (9) shows which verbs were used with which contexts. (See Appendix for a list of sample sentences taken from the questionnaire.)

<table>
<thead>
<tr>
<th></th>
<th>LIKE</th>
<th>HELP</th>
<th>KISS</th>
<th>GIVE</th>
<th>WATCH</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 incl</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
<td>x</td>
</tr>
<tr>
<td>2 excl</td>
<td></td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3 incl</td>
<td>x</td>
<td></td>
<td>x</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3 excl</td>
<td></td>
<td>x</td>
<td></td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>3 excl (dist)</td>
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<td></td>
<td>x</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>many incl</td>
<td>x</td>
<td>x</td>
<td></td>
<td>x</td>
<td>x</td>
</tr>
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<td>x</td>
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</tr>
<tr>
<td>many excl</td>
<td></td>
<td>x</td>
<td>x</td>
<td></td>
<td>x</td>
</tr>
</tbody>
</table>

Table (9). Combinations of verbs and contexts used in questionnaire

11 The verb *WATCH* was not used with informant G.
In addition, first person plural possessive forms were elicited to determine if the inclusive vs. exclusive distinction exists for ASL possessive pronouns as well. The English sentence used for this section was, *Our land is for sale*. The context was manipulated 8 different ways for G and 12 different ways for the other informants to elicit different number forms, the same forms as for the verbs. Also, for each number form, a distributive and collective form was elicited (e.g., distributive: ‘individual plots of land that each of us own separately’ vs. collective: ‘one plot of land that we all own together’). Again, see Appendix for sample sentences and contexts.

**Results**

*Phonetic Form*

My study revealed roughly five different forms of the first person plural pronoun and one possessive in ASL, each with two versions.

general “we”

Signs in which the hand moves in an arc motion from one point on the signer’s chest to another, both in the same horizontal plane.

**WE-CENTRAL**

The central version is produced at or near the center of the signer’s chest; the signer’s midline is the axis of the arc. (The midline is an imaginary vertical line running from the signer’s head to feet, i.e., along the sagittal axis.) This version may or may not have any arcing motion; if not, the signer merely touches with her index finger two points in the same horizontal plane at the center of his/her chest. Baker-Shenk & Cokely (1981) claim that the version with arcing motion is used when the referents are present, while the version without arcing motion is used when the referents are not present. However, it is not clear if this is indeed the case; Brentari (1998) describes the two variants of WE but does not mention if the two vary in meaning.
WE-DISPLACED

The displaced version is produced slightly to the left or slightly to the right of the signer’s chest and typically involves a rotation of the wrist.

“three/four/five-of-us”

Signs made with either a 3, 4 or 5 handshape (palm up) that moves in a small circular motion.

THREE/FOUR/FIVE-OF-US-CENTRAL

The central version is produced at or near the center of the signer’s chest.

THREE/FOUR/FIVE-OF-US-DISPLACED

The displaced version is produced on either the signer’s left side or right side.

“our”

Signs made with the same handshape as in the sign KNOW (flat bent hand, fingers together). Sign starts with thumb-side of hand near or contacting the chest with an arcing movement so that pinky-side of hand ends up near or contacting the chest.

OUR-CENTRAL

The central version starts slightly ipsilateral (i.e., on the right side for right-handed signers and on the left side for left-handed signers) and ends slightly contralateral (i.e., on the left side for right-handed signers and on the right side for left-handed signers).

OUR-DISPLACED

The displaced version starts and ends ipsilateral (i.e., on the right side for right-handed signers and on the left side for left-handed signers), or starts and ends contralateral (i.e., on the left side for right-handed signers and on the right side for left-handed signers).

“all”
Signs made with an A-handshape that moves outward, opening to an L-handshape. The trajectory of the hand indexes the locations of the referents (for some signers). Not to be confused with the sign ALL, which never indexes locations.

**A-L-L-CENTRAL**

The central version is produced at or near the center of the signer’s chest; the signer’s midline is the axis of the arc (see WE-CENTRAL above for definition of midline).

**A-L-L-DISPLACED**

The displaced version is produced slightly to the left or slightly to the right on the signer’s chest.

**Composite “we”**

Based on the composite pronouns described in Forchheimer (1953), WE-COMP is a set of pointing signs that refer exhaustively to each member of some set. This form differs from a simple concatenation of pointing signs in that the pointing signs of WE-COMP are produced in quick succession, sometimes with alternating hands (e.g., right, then left, then right, etc.), and with dampened movement. This dampened movement is similar to the movement of agreement verbs that have been inflected for exhaustive (i.e., distributive) aspect; see Figure (10) below.

**WE-COMP-ADR**

This version includes a point toward the addressee.

**WE-COMP-NOT-ADR**

This version does not include a point toward the addressee.

Note: Both versions include a point toward the signer.
“two of us”

Signs made with a K handshape where the arm or wrist moves between locations associated with the signer and some other referent. The K handshape here is idiosyncratic; one might expect a 2-handshape with this sign, given the handshapes of the other number incorporated signs.

TWO-OF-US-ADR

This version indexes the signer and addressee.

TWO-OF-US-NOT-ADR

This version indexes the signer and some other referent (not the addressee).

Classifying the pronouns

The pronouns above fall into two classes: one class that includes the versions central and displaced, and one class that includes the versions adr (indexing the addressee) and not adr (not indexing the addressee). I will refer to these two classes as lexical plurals and indexical plurals, respectively. Lexical plurals (including the general plural WE, the number-incorporated forms, the sign ALL, and the possessive OUR) do not index the locations of individual referents, while the indexical plurals (including the dual and composite forms) do index locations of individual referents. In inclusive contexts, the signers generally produced signs that were central (lexical) or adr (indexical), while in exclusive contexts the signers generally produced signs that were displaced (lexical) or not adr (indexical). However, this
does not necessarily imply a categorial distinction between inclusive and exclusive. In order to posit a true categorial inclusive/exclusive distinction in ASL, an informal follow-up study was done.

I met with each informant to get grammaticality judgments about the inclusive/exclusive forms. This was done to ensure for example that the “inclusive” forms that the informants produced in the inclusive contexts were ungrammatical in exclusive contexts and vice versa.

<table>
<thead>
<tr>
<th>Lexical Plurals</th>
<th>Inclusive</th>
<th>Exclusive</th>
</tr>
</thead>
<tbody>
<tr>
<td>WE-CENTER</td>
<td>√</td>
<td>√</td>
</tr>
<tr>
<td>WE-DISPLACED</td>
<td>*</td>
<td>√</td>
</tr>
<tr>
<td>3/4/5-OF-US-CENTRAL</td>
<td>√</td>
<td>√</td>
</tr>
<tr>
<td>3/4/5-OF-US-DISPLACED</td>
<td>*</td>
<td>√</td>
</tr>
<tr>
<td>A-L-L-CENTRAL</td>
<td>√</td>
<td>√</td>
</tr>
<tr>
<td>A-L-L-DISPLACED</td>
<td>*</td>
<td>√</td>
</tr>
<tr>
<td>OUR-CENTRAL</td>
<td>√</td>
<td>√</td>
</tr>
<tr>
<td>OUR-DISPLACED</td>
<td>*</td>
<td>√</td>
</tr>
</tbody>
</table>

Table (11) Results of follow-up study: Lexical plurals

<table>
<thead>
<tr>
<th>Indexical Plurals</th>
<th>Inclusive</th>
<th>Exclusive</th>
</tr>
</thead>
<tbody>
<tr>
<td>WE-COMP-ADR</td>
<td>√</td>
<td>*</td>
</tr>
<tr>
<td>WE-COMP-NOT-ADR</td>
<td>*</td>
<td>√</td>
</tr>
<tr>
<td>TWO-OF-US-ADR</td>
<td>√</td>
<td>*</td>
</tr>
<tr>
<td>TWO-OF-US-NOT-ADR</td>
<td>*</td>
<td>√</td>
</tr>
</tbody>
</table>

Table (12) Results of follow-up study: Indexical plurals

(√ indicates grammaticality; * indicates ungrammaticality)

Table (11) shows that the central forms of the lexical plurals can be inclusive or exclusive, while the displaced forms can only be exclusive. Table (12) shows that the adr forms of the indexical plurals can only be inclusive, while the not adr forms can only be exclusive.

Based on grammaticality judgments shown in Tables (11) and (12), the semantics of each form were determined as follows:
Semantics
(*=Kleene star, NATP=non-addressed third person)

general “we”

WE-CENTRAL

Same semantics as English ‘we’: [+speaker] and (either [+addressee] or [+NATP]* or both)

WE-DISPLACED

[+speaker] and [-addressee] and [+NATP]*

composite “we”

WE-COMP-ADR

‘me, him, her, him and you’ [+speaker] and [+addressee] and [+NATP]*

WE-COMP-NOT-ADR

‘me, him, her, him, but not you’ [+speaker] and [-addressee] and [+NATP]*

“two of us”

TWO-OF-US-ADR

[+speaker] and [+addressee] and [-NATP]

TWO-OF-US-NOT-ADR

[+speaker] and [-addressee] and [+NATP]

“the 3 of us / the 4 of us / the 5 of us”

THREE/FOUR/FIVE-OF-US-CENTRAL

[+speaker] and (either [+addressee] or [+NATP]* or both)

THREE/FOUR/FIVE-OF-US-DISPLACED

[+speaker] and [-addressee] and [+NATP]*
“our”

OUR-CENTRAL

Same semantics as English ‘our’: [+speaker] and (either [+addressee] or [+NATP]* or both)

OUR-DISPLACED

[+speaker] and [-addressee] and [+NATP]*

“all”

A-L-L-CENTRAL

all of a given set such that [+speaker] and (either [+addressee] or [+NATP]*

or both)

A-L-L-DISPLACED

all of a given set such that [+speaker] and [-addressee] and [+NATP]*

Obviously, any form that is specifically marked for [+addressee] is inclusive, and any form that is specifically marked for [-addressee] is exclusive. Any form that is marked [+-addressee] is neutral (i.e., neither inclusive nor exclusive). These classifications yield the results shown in Figure (13) (the checkmark indicates that a form for each of these pronouns exists for the category given). Since there is no form within the lexical plurals that is grammatical for inclusive but ungrammatical for exclusive, we cannot posit a distinct inclusive category for lexical plurals. However, the fact that the displaced forms of the lexical plurals are grammatical in the exclusive context and ungrammatical in the inclusive context shows that there is a distinct exclusive category for lexical plurals. For the indexical plurals, both inclusive and exclusive are categorically distinct. That is, since neither can occur where the other does, they are in complementary distribution and therefore categorically distinct.
It should be noted that the number-incorporated signs (THREE-OF-US, FOUR-OF-US, and FIVE-OF-US) can but often do not index the locations of the referents. The number-incorporated forms can be used indexically to distinguish between different person categories, as shown by the juxtaposition of the first person THREE-OF-US with the second person THREE-OF-YOU in Figures (14) and (15), respectively. Baker-Shenk and Cokely (1981) claim that the location of the referents regardless of person determines the location of the pronouns, such that in Figure (16), the pronoun THREE-OF-US at Location 1 would include (signer + Y + Z), and the same form at Location 2 would include (signer + X + Z). In contexts not marked for inclusive or exclusive, I agree with these claims. However, the number-incorporated pronouns are classified here as lexical, not indexical, because my data shows that modulations for inclusive/exclusive interfere with the default indexic properties of these number-incorporated pronouns. A lexical pronoun marked as exclusive will be displaced. Therefore, the pronoun shown in Figure (17) [Location 1], which is displaced to the signer’s right side, is a possible exclusive form (i.e., THREE-OF-US-DISPLACED). In an exclusive context (assuming that Y is the addressee), the referents for this pronoun according to Figure (16) could be (signer + X + Z) or possibly (signer + Z + some other referent W), but not (signer + Y + Z) as Baker & Cokely would claim.

<table>
<thead>
<tr>
<th></th>
<th>Inclusive</th>
<th>Exclusive</th>
<th>Neutral</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Lexical Plurals</strong></td>
<td>√</td>
<td>√</td>
<td></td>
</tr>
<tr>
<td><strong>Indexical Plurals</strong></td>
<td>√</td>
<td>√</td>
<td></td>
</tr>
<tr>
<td>(WE-COMP, TWO-OF-US)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table (13) Inclusive/exclusive categories for lexical and indexical plurals
Example (17) and Figure (18) show that the location of exclusive pronouns does not have to match the location of the referents. In Figure (17), the referents of the pronoun THREE-OF-US (i.e., the visual aids) are to the right of the signer (signer + Y + Z), as shown in Figure (18). Informant K, however, produces a pronoun not only on her left side (represented in Figure 18 by “*”), but also with her left hand (she is normally right-handed). Examples like this suggest that an exclusive context requires displacement of the pronoun, but the pronoun’s location need not match the location of the referents.
(17) THREE-OF-US-DISPLACED KISS-HAND CAT
three of us                          love            cat
‘The three of us (excl) love cats.’

Figure (18) Schematic representation of discourse situation during Informant K’s production of Figure (17). X, Y, and Z are referents; X represents the addressee. The location of the pronoun THREE-OF-US-DISPLACED is marked with an “*”.

Other Descriptive Issues

Sequences of pronouns

Some signers use combinations of pronouns to specify that certain individuals are included or excluded. Below is an example of many of the pronoun sequences the informants of this study produced.

Pronoun Sequences

A-L-L-DISPLACED, WE-CENTRAL
WE-CENTRAL, A-L-L-DISPLACED
WE-CENTRAL, A-L-L-CENTRAL
WE-DISPLACED, A-L-L-DISPLACED
2-OF-US-ADR, OUR-CENTRAL
2-OF-US-NOT-ADR, OUR-DISPLACED
3-OF-US-DISPLACED, OUR-CENTRAL
A-L-L-DISPLACED, 3-OF-US-INCL
WE-CENTRAL... WE-CENTRAL
WE-GROUP, A-L-L-DISPLACED, WE-DISPLACED
2-OF-THEM, YOU, ME, WE-CENTRAL
WE-CENTRAL... THEY-COMP-ADR
WE-CENTRAL, THEY-COMP-ADR
A-L-L-DISPLACED, WE-GROUP, OUR-CENTRAL
WE-DISPLACED, OUR-CENTRAL
OUR-CENTRAL, 2-OF-US-ADR
YOUR X, MY X (Distributive possessive)
POSS X, POSS X, MY X (Distributive possessive)
YOUR X, POSS X, MY X (Distributive possessive)
YOUR X, POSS X, POSS X, POSS X, MY X (Distributive possessive)
Our displaced, we displaced
2-of-them, we displaced
me, we-group
me, three-of-us-displaced

Table (19). Sequences of pronouns produced by informants in study

Signers produced specific pronouns followed by more general ones, but they also produced general pronouns followed by specific ones. Thus, there does not seem to be any particular pattern in which sequences occurred.

Nonmanual Signals (NMS)

An important element of ASL is facial expression and body position, referred to collectively in the literature as nonmanual signals (NMS). NMS are important for grammatical as well as affective marking. Some of the more prevalent NMS that the signers produced were: cheek-to-shoulder (CS), body shift, body lean and eye gaze. All of these signals act as grammatical markers; some may additionally be used for affect. Each of these NMS will be discussed in detail below.

- Cheek-to-shoulder (CS)

  The signer brings one shoulder close to his/her cheek. This indicates nearness in proximity, either in time or space (Liddell 1980). This NMS is adverbial in nature, so that the sign CAR-CRASH with CS would indicate that the car crash just happened. Likewise, CS can be used with the sign FUTURE in FUTURE WEDNESDAY (lit. ‘next Wednesday’) to indicate ‘this coming Wednesday’, a construction that is awkward in English. CS can also be used to express nearness in terms of physical location, so that the sign BEHIND with CS would mean something like “right behind”.

  Interestingly, the signers in this study used CS more often in exclusive contexts than in inclusive contexts. One possible reason for this use of CS may be to accentuate the cohesiveness of those included and also to create opposition between those included (i.e., the signer and others) and the one excluded (i.e., the addressee). Thus CS used with exclusives may have the same effect as the English word “just”,

26
as in “just the three of us”.

- **Body lean**
The signer leans to one side, without necessarily rotating the torso. This can be used for a variety of purposes, e.g., verb agreement (Bahan 1996). Wilbur & Patschke (in press) claim that forward and backward leans indicate inclusion and exclusion, respectively. However, they focus only the dual and number-incorporated pronouns, and their use of inclusive vs. exclusive refers to including the signer vs. excluding the signer. Thus the contrast Wilbur & Patschke set up is between first person and non-first person, rather than the traditional use of inclusive and exclusive as subcategories of first person.

In this study, body leans served a purpose similar to CS. That is, the signer would often lean to one side when using an exclusive pronoun. In particular, when the signer leaned to one side, it was always the same side that the pronoun was produced.

- **Body shift**
The signer's torso rotates so that the shoulders noticeably change orientation. Body shift can be used for several purposes, but it is primarily used as a grammatical marker of role shift, where the signer assumes a role of another discourse participant. This shift is used extensively with direct discourse (Engberg-Pedersen 1995).

In this study, body shift was most often used in exclusive contexts. However, the direction of the body shift (left or right) did not always match the location of the pronoun, so it is not clear if the body shift is further marking of inclusive or exclusive.
Eyegaze

The direction or object towards which the signer’s eyes are focused. Eyegaze in this study varied greatly, and was difficult to code because it can change so often and so quickly. However, it is clear that eyegaze is an important factor in determining inclusive vs. exclusive. During the follow-up study, one of the informants remarked that WE-CENTRAL can be interpreted as inclusive if the eyegaze is toward the addressee and exclusive if the eyegaze is directed away from the addressee. This pattern may not have arisen in the original study due to the method of data collection. The informants were instructed to sign to the camera as if the camera was the addressee, but the informants more often gazed at the questionnaire or the visual aids. A more in-depth study on eyegaze as a marker of inclusive/exclusive would therefore be very helpful; I leave this for future research.

Signers might not use CS or body shift or body lean, but eyegaze is always a factor in sighted signers. Therefore, this NMS may need to be considered separately.

Other NMS used included raised eyebrows, furrowed eyebrows, head nods and head shakes. While these NMS were used extensively by the informants in this study, none were used reliably to mark inclusive or exclusive. This may be due to the fact that these NMS are used quite frequently for other grammatical and affective reasons (e.g., topic marking, affect for doubt, affirmative marking, and negation); they were used in this study for these same purposes.

Distributive vs. collective

Distributive and collective forms were elicited for possessive pronouns and for several verbs. One goal was to determine the form of distributive vs. collective possessive pronouns (e.g., OUR in OUR LAND ‘the land that all of us own together’ vs. OUR in OUR LAND ‘my land, your land, his land...’). Two of the informants (B and K) did not
distinguish collective “our” from distributive “our”. The other two informants (G and A) distinguished collective and distributive “our” by using multiple singular possessives as in Example 20a (or WE-COMP, as in 21a) with the possessed noun to indicate distributive, and the normal possessive sign “our” (optionally in addition to another pronoun as in 21b) to indicate collective, as in Examples (20b) and (21b).

(20) Distributive vs. collective possessives (informant: G)
   a. YOUR LAND HIS LAND MY LAND FOR SALE
      “Our land (distributive) is for sale.”
   b. OUR-CENTRAL LAND FOR SALE
      “Our land (collective) is for sale.”

(21) Distributive vs. collective possessives (informant: A)
   a. WE-COMP-NOT-ADR THEIR LAND MY LAND FOR SALE
      this person, that person, that person... their land my land for sale
      “Our land (distributive) is for sale.”
   b. THREE-OF-US-CENTRAL OUR-CENTRAL LAND FOR SALE
      “The land that belongs to the three-of-us (collective) is for sale.”

Another goal was to determine the effect of inclusive and exclusive contexts on these distributive and collective forms. The collective forms were marked for inclusive/exclusive in the usual way, (i.e., central or displaced). Two of the informants (B and K) did not distinguish between distributive and collective possessives; their distributive forms were also marked by displacing or not displacing the sign OUR, as shown in Example (22). However, the other two informants (G and A) used distinct forms for distributive. These distributive forms were marked for inclusive/exclusive in a way similar to the indexical plurals. That is, inclusive was marked by including the possessive phrase YOUR X, and exclusive was marked by not including the possessive phrase YOUR X, as shown in Example (23).

(22) Collective possessives: Inclusive vs. exclusive
   a. OUR-CENTER LAND TRUE FOR SALE (Informant: K)
      “Our (neutral) land is for sale.”
   b. OUR-DISPLACED WE-DISPLACED LAND FOR SALE (Informant: B)
      “Our (exclusive) land is for sale.”

(23) Distributive possessives: Inclusive vs. exclusive
   a. YOUR LAND HIS LAND MY LAND FOR SALE (Informant: A)
      “Our (inclusive) land is for sale.”
   b. HIS LAND MY LAND FOR SALE (Informant: G)
      “Our (exclusive) land is for sale.”
One of the verbs in this study, GIVE, was also tested for distributive vs. collective properties. GIVE is an agreement verb; its articulation includes a path movement from the location associated with the subject to the location associated with the object. With collective forms, the verb agrees with a single location as if the pronoun were singular; see (24). With distributive forms, the situation is more complex. Agreement verbs can be modified for a type of distributional aspect called ‘exhaustive’, in which “actions are distributed to each individual in a group, and the actions are viewed as a single event” (Klima & Bellugi 1979); see Figure (10) for illustration. This is one of the ways the informants indicated distributive; see (25). The exhaustive is most often used when the object is the thing being distributed. The exhaustive form may also be used if the subject is the thing being distributed, as in (26). Note however, that (26) has the lexical sign EACH, also inflected for exhaustive. Yet another way of indicating distributive was using WE-COMP along with a verb, as in (27). Finally, distributive was sometimes not marked at all, as in (28).\(^{12}\)

(24) WE GIVE TEACHER FLOWER
“We collectively gave the teacher flowers.”

(25) TEACHER GIVE\[^{[M:Exhaustive]}\] CANDY
“The teacher gave each of us candy.”

(26) EACH\[^{[M:Exhaustive]}\] GIVE\[^{[M:Exhaustive]}\] FLOWER
“We each gave flowers.”

(27) WE-COMP THREE-OF-US GIVE FLOWER
“That person, that person, and I, the three of us, gave flowers.”

(28) TEACHER GIVE WE CANDY
“The teacher gave us candy.”

Another goal for this part of the study was to determine how the distributive/collective inflection interacts with inclusive/exclusive in agreement verbs. In collective contexts, exclusive is marked as usual, as shown in (29); the lexical pronoun WE is displaced to mark exclusive. With distributive verbs that were overtly marked for exhaustive, these verbs included a path movement toward the addressee in inclusive contexts, as shown in (30) and (31). In exclusive contexts these verbs did not include a path movement toward the

\(^{12}\) The notation in Examples (24-28) has been simplified to highlight the marking for distributive/collective.
addressee. Note that there are no overt pronouns in (30) and (31); first person is indicated by the verb only. In cases where the signer used the pronoun WE or WE-COMP to mark distributive, inclusive and exclusive are marked as usual, as shown in (32) and (33).

(29)  WE-DISPLACED GIVE, TEACHER FLOWER
“We (exclusive) collectively gave the teacher flowers.”

(30)  TEACHER GIVE [M:Exhaustive] CANDY
“The teacher gave each of us (inclusive) candy.”

“We (inclusive) each gave flowers.”

(32)  WE-COMP-NOT-ADR THREE-OF-US-DISPLACED GIVE FLOWER
“That person, that person, and I, the three of us (exclusive), gave flowers.”

(33)  TEACHER GIVE WE-DISPLACED CANDY
“The teacher gave us (exclusive) candy.”

In this section we have seen how some signers use sequences of pronouns, nonmanual signals, and distributive/collective marking in addition to inclusive/exclusive marking.

Discussion: Inclusive/exclusive in ASL

Markedness

Based on the features given for each pronoun, the following chart represents a continuum of specificity for each pronoun variant. The most specific forms (2-OF-US-ADR and 2-OF-US-NOT-ADR) indicate both the location and number of referents, whereas the least specific forms (WE-CENTRAL and OUR-CENTRAL) indicate neither the location nor the number of referents. The forms of the pronoun A-L-L are not included here, because it is not clear whether totality with number unspecified (e.g., “all of us”) is more or less specific than non-totality with number specified (e.g., “three-of-us”).
more specific

<table>
<thead>
<tr>
<th>Pronoun Form</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>TWO-OF-US-ADR</td>
<td>Most specific: Indexes all and only those included (location and number specified) 1+2 or 1+3</td>
</tr>
<tr>
<td>TWO-OF-US-NOT-ADR</td>
<td>Indexes most and only those included (location specified; low numbers specified, high numbers not) 1+2+3+3+3... or 1+3+3+3...</td>
</tr>
<tr>
<td>WE-COMP-ADR</td>
<td>Less specific: Indicates addressee excluded (number specified, location not) 1+3+3 / 1+3+3+3 / 1+3+3+3+3</td>
</tr>
<tr>
<td>WE-COMP-NOT-ADR</td>
<td>Indicates addressee excluded (number specified, location not) 1+3+3 / 1+3+3+3 / 1+3+3+3+3</td>
</tr>
<tr>
<td>3/4/5-OF-US-DISPLACED</td>
<td>Indicates number included, nothing more specified 1+ (2 or 3) +3 / 1+ (2 or 3) +3+3 / 1+ (2 or 3) +3+3+3</td>
</tr>
<tr>
<td>WE-DISPLACED</td>
<td>Less specific: Indicates addressee excluded (number not specified) 1+3...</td>
</tr>
<tr>
<td>OUR-DISPLACED</td>
<td>Indicates addressee excluded (number not specified) 1+3...</td>
</tr>
<tr>
<td>WE-CENTRAL</td>
<td>Least specific: 1st person plural, nothing more specified 1+(2 and/or 3...)</td>
</tr>
<tr>
<td>OUR-CENTRAL</td>
<td>1st person plural, nothing more specified 1+(2 and/or 3...)</td>
</tr>
</tbody>
</table>

less specific

Note that the duals are more specific than the composite forms, which are more specific than the number-incorporated forms. These are in turn more specific than the general first-person plural exclusive forms, which are more specific than the general first-person plural neutral forms. This can be considered to be a continuum of semantic markedness, where more specific forms are more highly semantically marked than less specific forms. This continuum of specificity differs from that of spoken languages. According to Silverstein (1976): “... it is clear that notions of markedness are not the same for indexic and non-indexic referring categories. In terms of referential specificity, the indexicals ‘inclusive, dual’, ‘first person singular’ and ‘second person singular’ are more highly marked semantically than ‘exclusive
dual’ and ‘exclusive plural’.” Thus for Silverstein, inclusives and singles are more marked than exclusives. Table (34) shows that the same is generally true for ASL (inclusives are generally more semantically marked than exclusives), but this may be due to the fact that indexicals are more highly marked than non-indexicals. Therefore, this possible similarity between spoken languages and signed languages in terms of markedness of inclusive/exclusive may be artifactual.

Also, in one set of pronouns in ASL (i.e., WE, OUR, 3/4/5-OF-US), there is no form specifically for inclusive, but there is a distinct form for exclusive. In another set of pronouns (i.e., TWO-OF-US, WE-COMP), inclusive and exclusive are both marked. Thus, while inclusive may or may not be marked, exclusive seems to be always marked in ASL. Based on this observation, ASL does not follow the same pattern of markedness for inclusive/exclusive that spoken languages do; recall from Table (1) that many spoken languages mark only inclusive in a given number category, but no spoken languages mark only exclusive in a given number category.

**Agreement**

Pronouns in ASL, as we have seen already, are associated with particular locations in space. There is a class of verbs in ASL called agreement verbs which make use of the association between nouns phrases and distinct locations in space. An example of an agreement verb is GIVE, which begins at the location associated with the subject and ends with the location associated with the object. So the sign SHE-GIVE-ME ‘she gives me’ begins at a location associated with SHE and ends at the location associated with the signer (which is always at the signer’s chest). Each referent in the discourse has a “locus” (a particular location in the signing space that is associated with that referent). Agreement with loci has been termed “locus agreement” (Cormier, Wechsler & Meier 1998).

Given that agreement verbs in ASL have locus agreement, the indexic use of space in ASL looks like it may lend itself to agreement with not only “first-person” locus agreement with the signer, but inclusive/exclusive locus agreement as well. In order to determine if this
possibility exists in any language, we first look to spoken languages since they are better documented: Do any spoken languages that have a distinction between inclusive and exclusive also agree in incl/excl? Algonquian languages such as Ojibwa have the inclusive/exclusive distinction in free pronouns as well as verbal affixes (Bloomfield 1958). Further, the verbal affixes and free pronouns can co-occur within a sentence. However, in these languages, the inclusive/exclusive distinction is marked primarily on verbal affixes; free pronouns in general are optional and used only for emphasis (Thomason, personal communication). Even if there are languages that mark the distinction primarily on free pronouns but also on verbal affixes, it is not obvious whether the verbal affixes would act as agreement affixes or simply incorporated pronouns that redundantly indicate the information conveyed by the free pronouns. Thus, the question of whether inclusive/exclusive is reflected in the agreement systems of any spoken languages is still unanswered.

Based on the data from this study, the question of whether inclusive/exclusive is reflected in the agreement systems of ASL is also unanswered. Given that exclusive pronouns are produced at the side of the chest (rather than the center of the chest), we might expect that agreement verbs with exclusive arguments (especially objects) would agree in “exclusiveness” with those arguments. For example, the verb GIVE-US-EXCL ‘give us (not you)’ might have a path movement ending at the side of the chest rather than the center. Unfortunately, with only one video camera directed head-on toward the signer, it was difficult to determine whether any path movements fit this pattern. Most verb paths for the GIVE-US forms seemed to converge at the center of the signer’s chest rather than either side, but it was not clear if this was indeed the case. I leave this issue for future research.

**Inclusive/Exclusive in Other Signed Languages**

Unfortunately, not much information is available on inclusive/exclusive pronouns in any signed language, ASL or otherwise. One problem may be that researchers of signed languages tend to consider all personal pronouns in signed languages to be indexic (Lillo-
Martin & Klima 1990, Liddell 1995, Engberg-Pedersen 1995). For example, Baker-Shenk & Cokely claim that pronouns with an index handshape (including WE) are indexic.

“Pronominal reference generally involves ‘pointing’ to a person or persons with a particular handshape. The handshape that is used indicates the type of reference. ...the pronouns [with an index handshape] are indexic (meaning ‘we’), whereas the ones [with a closed fist handshape] are reflexive/emphatic (meaning ‘ourselves’)” Baker-Shenk & Cokely (1981).

Baker-Shenk & Cokely’s assumption that the sign WE is indexic goes against the claim made here that the sign WE is not indexic. One possible reason for this discrepancy may be their use of the term ‘indexic’. They loosely define ‘indexic’ as “pointing to”, but my argument here is that the pronoun WE and the number-incorporated pronouns do not point to their referents in the same way that some of the other pronouns do (like TWO-OF-US and the singular pronouns). Also, the number-incorporated signs are considered by most researchers to be indexic for the reasons outlined above - i.e., in contexts not specified for inclusive/exclusive, the number-incorporated pronouns are indexic in that they index the location of the group. However, as I explained earlier, I have classified these number-incorporated pronouns as lexical rather than indexic because in inclusive/exclusive contexts, the indexic nature of these signs is often lost. Thus, for whatever reason, the inclusive/exclusive distinction is largely unstudied for signed languages.

From personal communication with informants contacted through the Sign Language Linguistics listserv, I was able to determine that the following signed languages do indeed have a distinction between inclusive and exclusive: Polish Sign Language, Icelandic Sign Language, New Zealand Sign Language, Australian Sign Language, German Sign Language, Japanese Sign Language, Danish Sign Language, and Israeli Sign Language. British Sign Language also has distinct forms for first person inclusive and exclusive pronouns (Deuchar 1984). Furthermore, duals in most signed languages tend to be indexical and in that case must have an inclusive/exclusive distinction -- e.g., French Sign Language (Moody 1983) & British Sign Language (Brien 1992).
Importantly, I have yet to learn of any signed languages that do NOT have some
distinction between inclusive and exclusive pronouns. Much more research needs to be done
in this area.

**Conclusion**

We have seen several differences between signed languages and spoken languages
from a typological perspective. Generally, the inclusive/exclusive distinction in spoken
languages is an areal and genetic phenomenon, whereas the inclusive/exclusive distinction
may exist in all signed languages. Furthermore, markedness relationships in American Sign
Language are different from those in spoken languages; inclusive is the marked category in
spoken languages, whereas exclusive in the marked category in ASL.

Given that pronouns are generally taken to be indexic (within ASL and perhaps in all
signed languages), other researchers would probably explain inclusive and exclusive forms
in the same way - i.e., changing the location of pronoun changes the meaning of the pronoun
because different referents are being indexed. Perhaps this is why the inclusive/exclusive
distinction in signed languages has never before been compared to the distinction in spoken
languages; the pronominal systems of signed languages are taken to be fully indexic and
therefore not comparable to the pronominal systems of spoken languages. This paper has
challenged that notion. The fact that ASL has an exclusive distinction with both indexical and
lexical plurals is unexpected.

Much more information is needed before generalizations can be made about the status
of inclusive/exclusive in signed languages. However, I suspect that the incl/excl distinction
is common if not ubiquitous among all signed languages. That is, there seems to be
something inherent in the visual modality of signed languages that lends itself to making this
sort of distinction. Thus even though I have shown that the pronominal system of ASL is
not entirely indexic, the modality still appears robust enough to allow very specific
pronominal reference.
Furthermore, the fact that the signed modality practically entails an inclusive/exclusive distinction suggests that modality itself may be a typological determinant than can be as robust as the other determinants mentioned by Nichols (1992) - i.e., presence of other typological features, area, and genetic affinity. This has major implications for Nichols’ framework and design.

More importantly, the fact that this morphological feature patterns so differently in spoken and signed languages highlights the importance of including signed languages in language typologies and studies of linguistic diversity. Any language typology that does not include signed languages may be making inaccurate generalizations about the world’s languages and about the possibilities of human languages in general.
References


Appendix

Notation

As is conventional in ASL literature, English glosses are given in small caps. Nonmanual signals such as eyegaze are noted with a solid line over the sentence. Verbs are translated in present tense for clarity (ASL does mark aspect and can mark tense, but often tense is not marked if it is understood in context). Also, different genders are used here to distinguish between different locations, although ASL does not grammatically distinguish gender.

<table>
<thead>
<tr>
<th>SIGN</th>
<th>English gloss for an ASL sign</th>
</tr>
</thead>
<tbody>
<tr>
<td>INDEX&lt;sub&gt;e&lt;/sub&gt;</td>
<td>A pointing sign directed toward the signer (i.e., the pronoun ME)</td>
</tr>
<tr>
<td>INDEX&lt;sub&gt;j&lt;/sub&gt;</td>
<td>A pointing sign directed toward some location j</td>
</tr>
<tr>
<td>VERB&lt;sup&gt;[N:Durational]&lt;/sup&gt;</td>
<td>A verb inflected for durational aspect</td>
</tr>
<tr>
<td>SIGN-SIGN</td>
<td>English gloss for ASL sign requiring more than one English word for interpretation</td>
</tr>
<tr>
<td>,VERB&lt;sub&gt;i&lt;/sub&gt;</td>
<td>Agreement verb marked for first person subject agreement (with signer) and third person object agreement (with some location i)</td>
</tr>
<tr>
<td>,GIVE&lt;sub&gt;i,k...AS&lt;/sub&gt;&lt;sup&gt;[M:Exhaustive]&lt;/sup&gt;</td>
<td>Agreement verb marked for third person subject agreement (with some location i) and exhaustive object agreement (with some locations j, k, etc., and also with signer and addressee)</td>
</tr>
<tr>
<td>[…]&lt;sub&gt;1&lt;/sub&gt;</td>
<td>A phrase signed within role shift</td>
</tr>
</tbody>
</table>

Excerpts from Questionnaire

The following situations and sentences are extracted from the questionnaire used for this study. The informants were asked to read each situation and translate the sentence in italics into ASL. Since the English pronouns we and us are vague with respect to who is included, the situations were devised in the hopes that the informants would rely on the context (instead of the English pronoun) to determine the appropriate ASL pronoun.

Examples 1 and 2 use the verb HELP, 1 with a context of three inclusive and 2 with a context of three excluding addressee. For the informant who used visual aids (Informant B), Figures 7 and 8 show how the visual aids were set up in relation to the informant and the camera. (Visual aids were used for all 64 sentences with informant B.) The visual aids (bear
figurines) were set up on a table between the signer and the camera, so that the bears were visible to both the signer and also the camera but did not hinder the view of either.

EXAMPLES 1 AND 2. **You, B, C & D** do community service. **You, C & D** help senior citizens, and **B** volunteers at the animal hospital.

1. **You, C & D** are discussing the success of the organization.

   **C** asks **you**:
   Are we really contributing to the community?

   **You** answer **C**:
   *Yes, we help senior citizens.*

   [Figure 7. Aerial representation of camera, signer, and visual aids for Number 15 (Visual aids marked "YOU", "C" and "D")]

2. **B** joins the discussion with **you & C & D** about community service.

   **B** asks **you**:
   On my weekends I volunteer at the animal hospital. What do all of you do to serve the community?

   **You** answer **B**:
   *We help senior citizens.*
Examples 3 and 4 show the same verb HELP with the first person plural pronoun as the object instead of the subject. Example 3 uses the context many inclusive, while 4 uses a many excluding addressee context.

EXAMPLES 3 AND 4.  A, B, C & D are three of many members of a support group. At one of the meetings, the coordinator asks A if she thinks the meetings have been beneficial to everyone.

3. A thinks the meetings have been helpful to everyone in the group.

A says to the coordinator:
\textit{The meetings help us.}

4. A thinks the meetings have been helpful to herself (A) and to many others, but not to B.

A says to B:
\textit{The meetings help us.}

Examples 5 and 6 are eliciting the possessive OUR. Number 5 has a three inclusive context, while number 6 has a three excluding addressee context.

5. You & B & C all three jointly own a certain piece of land. The three of you have decided to try to sell the land for a profit.
You tell B & C:
Why worry about new property taxes? Our land is for sale.

6. (Continued from #5) Later you are talking to your friend D. D is not a landowner.

You tell D:
B & C and I will not worry about the new property taxes. Our land is for sale.

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