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Taboo expressions in American Sign Language

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Abstract

This is an introduction to taboo expressions in ASL. Several word-formation processes are exploited in coining ASL taboo-terms, most also exploited by non-taboo terms. Further, ASL taboo terms are both entrenched and clever (sometimes humorous). This is expected if the entrenchment vs. evanescence of slang and taboo terms in sign languages is affected by the same (or similar) factors relevant to slang and taboo terms in spoken languages. With regard to syntax, taboo terms appear isolated or embedded in larger structures as predicates or referential NPs. They rarely appear as modifiers, unlike in English. Instead, sometimes a sentence with no taboo terms is followed by an explicitly sexual or otherwise taboo sentence emphasizing it. Alternatively, to convey vulgarity or emphasis, one will modulate a sign's movement and employ appropriate affective nonmanuals. English and ASL exploit the same mechanisms for emotionally-charged language—taboo terms, modulation of phonetic properties, and facial expressions—but to differing degrees. Since the manual articulators are slower than spoken language articulators, ASL favors the use of nonmanuals, which do not lengthen the duration of an ASL sentence, allowing affective information to be efficiently integrated into the message.

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1. Introduction

Taboo expressions are lexical items or larger constructions whose use in a given situation is strongly prohibited, so that they are considered rude, crude, vulgar, or insulting. The taboo language usually studied in research on spoken language consists of terms that regard for the most part religion, disease and death, sex, and bodily excretions (Andersson and Trudgill, 1990; Hughes, 1992; Montagu, 1967).

Taboo expressions differ from taboo acts (incest, murder, bestiality, pederasty, and so on) in that using these expressions in conversation are not necessarily taboo. How the participants in the conversation relate to each other and what the purpose of talking about these topics is are crucial to whether or not the expressions themselves are to be labeled taboo. So, for example, in a discussion with a rabbi, psychiatrist, proctologist, lover, and so on, the use of many lexical items related to these topics may be perfectly normal (Andersson and Trudgill, 1990).

Studies of taboo expressions in spoken languages of North America and Europe have described their behavior with respect to a number of conversational (or illocutionary) functions, including exclamations, maledictions, and name-calling (Napoli and Hoeksema, 2009, and see the references cited there). Such functions are generally insulting or rude,

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although, of course, how they are intended or received can vary greatly. For example, good friends might call each other all sorts of crude names, just for fun.

Over the past sixty years, studies of taboo expressions in spoken language have rarely asked what they can tell us about the linguistic structure of a particular language or about linguistic theory. However, a handful of theoretically inclined linguists have paid attention to this matter, looking across several languages, and that number has recently increased (e. g. Brame, 1978; den Dikken and Giannakidou, 2002; Hoeksema, 2001, 2002; Hoeksema and Napoli, 2008; Horn, 2001; Huang and Ochi, 2004; Merchant, 2002, 2006; Napoli and Hoeksema, 2009; Pesetsky, 1987; Postal, 2004; Postma, 1995, 2001; Sprouse, 2005; Zwicky et al., 1971).

Interestingly, the study of taboo expressions can lead to insights into the study of grammar that are not so easily gained in other ways. For example, taboo constructions in English (that is, fixed constructions containing taboo terms) can be used as emphasis markers in a variety of syntactic structures regardless of their literal meaning (such as: *Get the {hell/fuck} out of here; The {hell/fuck} I will!*). Normally the enlistment of lexical items by various constructions is based on the category and features of the items in question, and these in turn are in part determined by lexical semantics, and in part arbitrary. In these taboo constructions, however, lexical meaning appears to play no role. Instead, what matters is precisely their taboo nature—a pragmatic status that is culturally motivated by the fact that certain topics are offensive or forbidden to talk about within a given society. Thus, for example, societies differ with respect to which animals can be referenced in insults such as name-calling (Andersson and Trudgill, 1990). Theories of grammar that rely on a compositional semantics (i.e. most of them) cannot adequately account for the distribution of taboo terms across the grammar and need to be modified to include whole constructions as being meaningful (Hoeksema and Napoli, 2008; Napoli and Hoeksema, 2009).

As far as we know, however, no linguistic studies have been made of taboo expressions in any sign language. We aim to redress that lack with this initial study of taboo-terms and their usage in American Sign Language.

We first comment on the nature of taboo in sign languages and then describe how we gathered our data. Next, we examine word-formation in ASL taboo terms, offering a sampling that shows a range of phonological and morphological play. We turn to syntax, beginning with a discussion of taboo terms that occur as isolated (that is, single-sign) constructions. Then we look at taboo terms embedded in larger syntactic structures, showing that they can occur as referential NPs and as predicates, but, generally, not as emphatic modifiers (in contrast to English). Nevertheless, ASL can use taboo expressions for emphasis in the following way: we often find an inoffensive sentence followed by a separate sentence that is entirely taboo, in the sense that it explicitly deals with sex or bodily effluents or other taboo topics. The second sentence emphasizes the first one, and generally brings a laugh. We also find otherwise inoffensive sentences made rude or vulgar—and thus taboo—by the presence of taboo nonmanuals. We account for the syntactic differences we observe between ASL and English regarding the use of taboo expressions by appealing to overall timing considerations in signed and spoken sentences.

2. A word on taboo terms in sign languages

Regardless of our readers' knowledge of Deaf communities, we expect them to easily imagine situations in which terms about religion, disease and death, sex, and bodily excretions are taboo among signers. However, there are three points we must make pertinent to the identification of taboo expressions among signers in contrast to among hearing people.

First, it is common practice within Deaf communities (at least in the Americas and Europe, but also in other Deaf communities we have read about) to describe a person based on physical characteristics that are visually obvious (Mindess, 2006), whether or not mentioning those characteristics might be considered vulgar in spoken language. For example, if you want to pick out a woman from a group and she's remarkable among that group because of her ample breasts, then an ASL signer is probably going to employ some type of classifier construction to show the shape and size of the breasts, by cupping the hands around the imaginary breasts and then moving the hands away from the body to show the extent of the breasts (just as an ASL signer might pick someone out by their large nose, acned skin, or asymmetrically placed eyes). This is perfectly acceptable behavior; it is not rude or even politically incorrect, regardless of the situation. Such descriptions are not taboo in ASL (though they might be in English) and, accordingly, they are not included in our discussion. Misunderstanding of this point has led to unfortunate instances, such as the firing of an ASL instructor as recently as 2010 (Gadley, 2010).

Second, for a full discussion of taboo in sign language, one more topic must be added to the earlier list of topics typically spawning taboo expressions: hearing. The mention of whether someone is hearing or not may simply be giving information about one's audiological status. But, in certain circumstances, the mention of one's behavior with respect to hearing people or with respect to Deaf culture can be used as so strong an insult that it constitutes a taboo expression. For that reason, we will fold appropriate such examples into our discussion below.

Third, facial expressions in sign languages are a crucial part of any sentence, carrying grammatical, lexical, and affective information (Liddell, 1981, 2003). Facial expressions can occur alone as taboo insults or can make an otherwise

inoffensive sentence taboo. Parents, for example, might scold their child for making certain expressions in certain contexts; adults might be considered inordinately rude for making certain expressions in certain contexts. Thus we will include a discussion of the relevant uses of nonmanuals.

3. Gathering the data

The taboo expressions investigated here were collected by examination of the literature on ASL, by using information we already knew, and by asking deaf and hearing native signers of ASL in Austin, Texas, Washington, DC, and the Philadelphia, PA area what signs they considered taboo. Two of the authors of this paper are native signers, one deaf, one hearing. With respect to our informants, we asked them to demonstrate how they use in conversation the taboo expressions they identified. Our work with informants took place in casual settings (conversations in their homes). All consulted signers, totaling 10, were between the ages of 19 and 61. We here offer data that exemplify the range of phenomena we observed.

4. Taboo terms and the lexicon

At the level of individual signs, taboo terms have a range of interesting linguistic properties, most stemming from play with phonological parameters.

4.1. Manual letter handshapes

ASL has a manual alphabet with handshapes standing for letters and a manual numerical system with handshapes standing for numbers. So when we talk about the "L-handshape", for example, we mean the handshape that is used to represent the letter L in the manual alphabet. (Appendix A gives all the handshapes referred to in this paper.) Using the manual letter handshape of the first letter of the corresponding English word in making a sign is called initialization (as in FAMILY, KITCHEN, NURSE, and so many others—note that English glosses for ASL signs are written in capitals, by convention), and it is common in American Sign Language (Battison, 1978). A more complex form of initialization can occur when an ASL sign corresponds to an English compound, although, we stress, the ASL sign itself is not a compound. Sometimes the handshape will start out as the first letter of the first element of the English compound and then change to the first letter of the second element of the English compound (as in WORKSHOP, which has W-handshape > S-handshape). And, finally, less commonly one can find initialization coupled with what one might call "finalization". In such signs the handshape begins as the first letter of the corresponding English word and then changes to the final letter of that word (as in LINGUISTICS, which has L-handshape > S-handshape).

Some taboo terms employ simple initialization. Thus one variant of the sign HELL is an H-handshape that moves in a diagonal from high contralateral to low ipsilateral position, as shown in Illustration 1.

Other taboo terms are built on English compounds and use the more complex form of initialization. An example is one of the signs for BULLSHIT. We need to make an aside before discussing this particular sign. A range of situations are appropriate for the use of various different ASL signs translated as 'bullshit', just as in English, from something not being true (compare to English *He said he's never met her, but that's bullshit; they went to school together*) to a reaction that something is unreasonable, whether unreasonably good or unreasonably bad (compare to English *They're charging* \$1500 for a flight to Italy; can you believe that bullshit? vs. They're charging \$150 for a flight to Italy; can you believe that bullshit?), to many other things. Furthermore, choice of lexical items can vary based on the conversation participants. When this issue arises below, we try to give a single appropriate example for the signs we use, but that example in no way circumscribes all their different uses.

In some (older) varieties of ASL one variant of BULLSHIT (used as in THAT PRICE BULLSHIT) starts out as a B-handshape in front of the mouth, which moves away, changing to an S-handshape. Liddell and Johnson (1989) point out that in those varieties of ASL it is just like the sign THANK-YOU except for the fact that the handshape changes from B to S. These letters correspond to the first letters of each of the elements of the English compound: *Bull, Shit*. Today many varieties make a B-handshape followed by an S-handshape in neutral space, starting out more at the chest level than the chin or mouth level (that is, lower than a couple of decades ago) and with the fingertips pointed toward the addressee or an appropriate spatial index with the palm facing contralateral, as shown in Illustration 2.

We will see examples of the third kind of manual letter play, initialization plus "finalization", in later subsections.

4.2. Exploitation of connotations associated with phonological parameters

One can create signs by exploiting connotations associated with particular phonological parameters, some of which may be iconic in nature and perhaps even morphological (Johnston and Ferrara, 2011; Johnston and Schembri, 1999).

Various locations have connotations, for example, and those connotations are so strong that they allow a family of signs to be built around them (Fernald and Napoli, 2000; Fischer and Gough, 1978). Signs made at the side of the forehead (or, for some speakers, at the top of the cheek) often have to do with cognition (KNOW, THINK, FIGURE-OUT, REASON, IMAGINE, DREAM). Creative language, particularly in jokes, exploits these connotations (see Klima and Bellugi, 1975; Sutton-Spence and Napoli, 2009, for many examples).

Exploiting the connotations associated with a particular location is a common way to coin taboo terms and insults, as well. One insult of taboo-strength related to the ASL cognition family just discussed is to take the sign HEARING and change its location from in front of the lips to in front of the forehead, to mean THINK-LIKE-A-HEARING-PERSON, as shown in Illustration 3. This sign is derogatory or degrading because it indicates a person who uses hearing-based behaviors and norms, thereby going contrary to culturally Deaf tendencies and, in context, it can certainly be considered a taboo sign (Wilcox, 2000:93–94).

The nose is the location of a handful of signs having to do with unpleasant things, such as UGLY, BORING, SNOB, and while today many signs without a pejorative connotation are made at the nose, that location used to be reserved for slang or taboo signs (Schein and Stewart, 1995), and it is still employed in coining insults. In the 1980s there was a television soap called "Dynasty". People in the Philadelphia area who didn't like the program used the name sign of a Dhandshape at the forehead, moving down to become an N-handshape at the nose, then moving down to become a Yhandshape at the chin—with the palm oriented toward the signer throughout. (This particular example was offered to one of the authors of this paper by a Deaf signer in Phìladelphia back in the late 1990s. The signer was in his late 30s at the time.) They were building on the fact that the letters D, N, and Y occur in that order in the name of the program—that is, initialization. But each letter also carried meaning with it because of its particular articulatory location. The D-handshape at the forehead evoked the idea of dumb, since DUMB, STUPID, NO-BRAINS are all made in that location. The Yhandshape at the chin is the sign WRONG, so this sign was fully incorporated into the name sign (and we return to incorporation later). But what is most relevant to the point we are making now is that the N-handshape at the nose contributed a pejorative sense primarily because of the unpleasant connotations of that location. Many English words start with the letter N, but given that the N-handshape in this name sign is made at the nose, a pejorative connotation comes across. So this name sign is consistently insulting, in all three of its locations. This name sign does not use a taboo term and does not have the force of a taboo. We mention it to show that in coining new signs the nose can be used to give a pejorative connotation to that sign. (And we note that the nose may have a pejorative connotation in spoken languages, too (She's a hard nose/If you lie, your nose will grow like Pinocchio's), but we do not know if this fact is related to the ASL fact.)

There are various taboo signs that mean 'shit'. One is made with an S-handshape in front of the nose followed by either an elbow movement lowering the hand away from the nose, or a wrist nod (perhaps with a slight twist) as in Illustration 4. We contend that the location allows the sign to exploit the pejorative connotations associated with the nose.

4.3. Compounding and incorporation

Whole signs can appear inside a sign via compounding or incorporation. Compounding occurs frequently in ASL (PAJAMAS < SLEEP + CLOTHES, SOFT-HEARTED < SOFT + HEART, PARENTS < MOTHER + FATHER, and so on). In compounds the two input signs are largely discrete, with one temporally following the other, although there may be a great amount of spreading of phonological features (particularly handshape and orientation) and reduction of movement (repeated movements are regularly reduced to one, for example), so that, in fact, sometimes the input signs to lexicalized compounds are difficult to recognize (Del Giudice, 2007; Liddell and Johnson, 1986).

Compounding can occur between a taboo sign and a non-taboo sign to create a new taboo sign. The sign FUCK-UP, for example, is made with FUCK (where the V-handshape on each hand taps each other, palms facing each other), followed by UP (the thumbs-up version of UP), for example, a simple calque from English.

The identification of taboo compounds is not always obvious, just as the identification of non-taboo compounds is not. For example, consider PISS-OFF. That sign starts with the P-handshape and changes to the F-handshape (the first and last letters of *piss off*), so we have initialization coupled with "finalization". (Note that the P-handshape is identical to the K-handshape except in fingerspelling, where orientation is distinctive. We label the handshape P or K depending on pertinence of the manual letter to the analysis of a given sign.) However, something else has occurred here, as well. The sign PEE is made by a tap of the P-handshape on the tip of the nose. The taboo term PISS-OFF starts as PEE, then the wrist twists away from the nose as the handshape changes to F, as shown in Illustration 5.

We contend that compounding has applied here—with the first element clearly being the sign PEE and the second element being the fingerspelled word O-F-F—a suggestion offered to us by an anonymous reviewer. In support, note that the starting point for the second element of the compound is the nose, and if that element were, in fact, originally O-F-F, the twist away from the nose as the hand moves into neutral space is expected. This analysis entails loss of the letter O and, perhaps, of the first F. But loss of letter(s) is typical of lexicalization of fingerspellings (Battison, 1978), particularly non-final

letters. So here we have initialization coupled with what winds up looking like "finalization" in a sign compound rather than in a simple sign.

The other word-coining process in which a whole sign can appear in another sign is incorporation. The term incorporation is, in fact, used to cover a variety of word-formation processes, where typically one word is fused inside another (Bybee, 1985). So it has a multiple-word input, like compounding, but generally those inputs are not arranged in a discrete order, unlike compounding. Incorporation is common in ASL, typically of numerals appearing as the handshape in another sign where those other signs are, for the most part, time expressions (Liddell and Johnson, 1989). One might object to calling this incorporation, rather than blending (discussed in the next subsection), since only the handshape of the numeral appears in the other sign, but not the orientation, movement, or location. Such an objection is well-taken. However, numerals are arguably special signs in that their handshape appears to be their most salient phonological property. Indeed, there is no movement in a numeral. Instead, a dictionary will give neutral space as their location, with palm oriented inward or outward (typically inward for ONE through FIVE, and outward for higher numbers). But, in fact, we often recognize numerals regardless of their orientation or location, simply by the handshape. For example, if we want to indicate that a T-shirt has the numerals 5-3-3 printed on the center of it, we can make the handshapes of these numerals on our chest, moving across, here palm oriented inward. This is utterly normal, and it contrasts with other signs. So if we wanted to say that there was a picture of a cat in the center of the Tshirt, we would not try to make the sign CAT on our chest nor the sign PICTURE on our chest. It's ludicrous to even entertain the idea, since the movement and location of CAT and PICTURE are so important in recognizing the signs. Given this, we accept the general consensus in the literature that numeral incorporation occurs in ASL. Supalla (1992) goes further and analyzes many name signs as involving incorporation, in which case a large variety of signs can be incorporated into other signs.

Many times it is difficult to distinguish between compounding and incorporation. For example, the Austin, Texas area uses a different name sign for the television show "Dynasty" from the Philadelphia-area one discussed earlier. It consists of the D-handshapes tapping once (fingertips to fingertips) followed by the Y-handshapes tapping once (again palms oriented toward each other). The D followed by the Y is an example of initialization and "finalization". But this name sign is clever. The sign DATE consists of D-handshapes tapping twice, and the sign CLASH consists of Y-handshapes tapping twice. It is reasonable to see this name sign, then, as containing both the sign DATE and the sign CLASH, since the show is about romantic mishaps. This name sign works particularly well at the phonological level. DATE and CLASH are phonologically similar in that both are two-handed signs symmetrical across the midsaggital plane that involve the hands contacting each other; moreover, no change in orientation is needed in making the transition from DATE to CLASH, thus making for a very smooth, albeit complex, sign. But both signs alone involve two taps of the hands while the name sign involves a total of two taps. So do we have a compound of DATE followed by CLASH, with reduction of movement (typical of compounds), as we would analyze it, or do we have DATE incorporated into the first movement (perhaps syllable, depending on one's analysis of syllables in ASL) of CLASH or CLASH incorporated into the second movement (or syllable) of DATE?

The same question of compounding versus incorporation comes up with regard to the analysis of taboo signs. A taboo sign can appear inside a name sign, where the point is to insult the referent, along the lines of the derogatory name sign for "Dynasty" in Philadelphia. An example is a common name sign for Alexander Graham Bell (discussed in Mirus, 2008, among others). This sign consists of making the A, G, then B handshapes at the forehead, so it uses initialization, as shown in Illustration 6. But, again, there is more to it. The A on the forehead is the sign DUMB. The G there evokes the sign PEA-BRAIN. The B there is the sign BASTARD.

4.4. Blending

Blending is a word-formation process whereby some phonological properties of one sign are combined with some phonological properties of another sign to make a new sign that is related in sense to both of the original signs. In English we will often take the onset of a syllable of one word and the rime of a syllable of another word to make a new word that is blended both phonologically and semantically (such as *smog* from *smoke* and *fog*; but we also have blends where one of the source words is polysyllabic, such as *brunch* from *breakfast* and *lunch*).

Blending is like both compounding and incorporation in that the meaning of a blend comes from a combination of the meanings of the input signs. It differs from compounding in that we do not have one sign followed by a second sign (often with spreading of features in either or both directions). It differs from incorporation in that we do not have a complete sign fused into another sign. In crucial contrast to both compounding and incorporation, only some of the phonological properties of each input sign appear in the output sign.

We also hold blending distinct from signs coined by exploitation of connotations associated with phonological parameters (as discussed in section 4.2 earlier). With the latter we have a general association of some (perhaps underdetermined) sense with a particular phonological parameter—and we use that in coining a new sign. But in blending,

we simply merge some of the phonological properties of two signs, where perhaps each of the input signs could be iconic in some way, but, importantly, neither of the signs is built on some phonological parameter that has a strong connotation.

Blending of signs is a less common word-coining process in ASL, particularly in clever or humorous signing (Klima and Bellugi, 1975). We see it, for example, in the sign BROWN-NOSE. The sign NOSE is made by touching the nose with the 1-handshape. Notice that we are not appealing to any negative connotation here—the nose is simply iconic for itself. (Also note that many signs that have no pejorative connotation are made at the nose, such as MOUSE, FUNNY, SILLY.) BROWN is an initialized sign, made with the B-handshape moving down the side of the face. The sign BROWN-NOSE consists of a B-handshape moving down the side of the nose. The general location comes from NOSE, although we now use the side of the nose rather than the tip. The handshape and movement are from BROWN. And notice that the location, being the nose, adds to the pejorative connotation. Another example is STRICT. The sign HARD is two-handed, with bent V-handshapes hitting sides, one on top of the other. The sign STRICT is a made by touching the nose with the side of the bent-V-handshape, which we suggest is literally HARD-NOSE—blending the handshape and palm orientation of HARD with the location and movement of NOSE to give an equivalent of the English expression hard nose. (This is almost a calque—but a true calque would be a compound in ASL, just as it is in English.) Again, the pejorative connotation of the nose as location may be adding insult to injury. Additionally, the use of a bent handshape may be contributing to the unpleasant sense of STRICT, since bent handshapes are often associated with pejorative or negative senses (or "offensive behavior" as in Frishberg, 1975:714).

One can, likewise, blend an ordinary sign with a taboo sign to make a new taboo sign, and this is often done in order to create an insult, particularly in name signs. For example, when Deaf schools compete with each other in sports, sometimes they make up taboo name signs for the other school (Rutherford, 1993). Sophara Sok and Rebecca Furland (in unpublished coursework at Gallaudet University that they discussed with us in spring 2011) note that one such school is the Deaf school from Louisiana. Its ordinary sign name is simply L-A, with the hand moving from the center outward (ipsilaterally). Note that the sign SHIT is made with the nondominant hand forming an A, and the dominant hand forming a 10 (which is an A-handshape with an extended thumb). The thumb of the 10-handshape starts out inside the nondominant A-handshape and moves out, going at a diagonal downward and ipsilaterally (iconic of defecation). The insult name sign for the Louisiana Deaf school uses a nondominant A-handshape and a dominant L-handshape, where the thumb of the L starts out inside the nondominant A-handshape and moves out, going diagonally downward and ipsilaterally, and changing to an A-handshape, as shown in Illustration 7.

So the L-A name sign has been blended with the sign SHIT to form the taboo name sign. That is, the phonological parameters of both input signs are affected as this new sign is formed (the direction of movement for L-A is affected; the dominant handshape for SHIT is affected). Interestingly, many younger Deaf are using this originally pejorative sign in a neutral or conversational way to indicate the state (not the school for the Deaf).

Blending also occurs between a sign and a taboo gesture. The sign UNDERSTAND is produced near the side of the forehead and is made with the S-handshape changing to the 1-handshape, palm oriented to the rear. If the 1-handshape is replaced with the finger gesture meaning "fuck you" (the fist with middle finger extended—the gesture we will hereafter call "the taboo finger gesture"), we get a sign meaning both that I understand you and you can fuck off, all in one. This sign is used by Lentz (1995) in the poem "The Baseball Game". Again, this is blending rather than incorporation, since the taboo gesture alone does not call for a handshape change, but the sign UNDERSTAND does. So phonological input from both signs is blended.

Another sign-gesture blend involves the sign MOTHER, a one-handed sign made with the 5-handshape tapping against the chin. If the handshape is replaced with the taboo finger gesture, but with the thumb extended and tapping against the chin, we get the blend MOTHERFUCKER, shown in Illustration 8.

Another less commonly known blend for MOTHERFUCKER has the 3-handshape with a bent wrist tap on the chin, then move ipsilaterally and then down, following what is known as the 7 path-shape (and angle shape) to neutral space. The starting location on the chin is the location of the sign MOTHER. The ending location in neutral space is the location of the sign FUCK (the two-handed variant in which the hands meet, with palms facing each other). The 3-handshape and the bent wrist, however, are not found in either MOTHER (which uses the 5-handshape) or FUCK (which uses the V-handshape, where the two extended fingers are iconic of legs in this sign), so this sign is more complex than a simple blend. We note that if one started with a V-handshape and simply opened the thumb, V would change to 3, allowing the contact at the chin to be the same as in the sign MOTHER. This taboo sign was observed in Austin, Texas, where it was used with a distinctly in-your-face dynamics. We therefore wonder if both the 3-handshape and the bent wrist might be independent features taken from rapping, where they are common. In any case, the introduction of phonological material not found in either of the input signs shows a complexity not observed in the other taboo blends discussed here, but found in the non-taboo blend BROWN-NOSE discussed at the beginning of this subsection.

Another plausible example of blending that requires some explanation in order to be recognized as a blend relies even more heavily on iconicity. The sign PHILADELPHIA is a P-handshape in neutral space that traces a 7 path-shape. An insult name sign for the city of Philadelphia is two-handed; the dominant hand forms a P-handshape and the nondominant

hand forms an S-handshape. The middle finger of the P-handshape comes down from above and dips inside the S a couple of times, iconic of anal intercourse, as shown in Illustration 9. The actual sign ANAL-INTERCOURSE has a nondominant 1-handshape poking through the circle of an F-handshape on the dominant hand.

The insult name sign for Philadelphia does not at first look like a blend of PHILADELPHIA and ANAL-INTERCOURSE for two reasons. First, the dominant rather than the nondominant hand is doing the poking action. Second, the hand poked into is not an F, but an S. Both differences, however, follow from phonological restrictions. To see this, consider the fact that in a two-handed sign that is asymmetrical, typically one hand moves while the other serves as a base (or location) for that movement. In the vast majority of cases, the base hand is one of the seven unmarked handshapes: 1, 5, A, B, C, O, S (see Battison's 1978 Dominance Condition; for comments on it as well as for discussion of frequency of marked handshapes in these signs, see Napoli and Wu, 2003). So if the P-handshape of PHILADELPHIA (which is per force the dominant hand since this is a one-handed sign) is to be maintained in the blended insult name sign, then the dominant hand must be a P. That entails that the dominant hand, the P-handshape, will be the one to do the poking. Now we consider the nondominant hand. If it is to be the part dipped into, we'd expect it to be the F seen in ANAL-INTERCOURSE. But it cannot be F since the non-moving hand must be one of the unmarked handshapes. Among the unmarked handshapes, both O and S offer the opportunity for being dipped into. But S was chosen, perhaps to indicate that the orifice is tight, or perhaps to evoke the nondominant hand A in SHIT (where A is just S with the thumb beside the curled fingers rather than crossing over them). A second reason why F would not have been a well-formed choice is that the handshapes P and F have different selected fingers, so the resulting insult name sign would have violated the Selected Finger Constraint, limiting a sign to only one group of selected fingers (Mandel, 1981). So, we argue that this insult name sign is a blend of PHILADELPHIA and ANAL-INTERCOURSE.

4.5. Combinations

The various methods of coining signs can combine, resulting in morpho-phonologically complex taboo signs. We have already seen initialization combining with other word-formation processes above. Now we will look at additional types of combinations.

In an earlier subsection we mentioned a variation of the sign FUCK-UP that is a compound (FUCK + UP). But many other variations are more complex. In one variation the hands begin with the sign FUCK (the V-handshapes tap each other, but now only once), then the dominant hand changes to P as the hands tap against each other a second time, as shown in Illustration 10. (We note that some speakers orient the fingertips of both hands slightly upward in this sign.)

The second part of the sign here is a blend of FUCK with fingerspelled U-P. Note that U-P has lost the initial U. Since U and V are just closed versus spread variants of one another, another way to analyze this is to say the initial U of U-P has been replaced with V, so that the nondominant hand gives us a V, approximating the U of U-P, while the dominant hand gives us a P.

In another variation of FUCK-UP the nondominant hand is a 5 in neutral space, palm up (the location and orientation of the nondominant hand in FUCK), while the dominant hand hovers above it, with a 3-handshape and the palm contralateral. The dominant hand lands on the nondominant hand with 3 > 10 handshape change, as shown in Illustration 11.

Here we see the V-handshape found in the sign FUCK replaced by a 5 on one hand and an initial 3-handshape on the other. Since the 3-handshape shows up in the Austin, Texas variant for MOTHERFUCKER discussed earlier, one might propose that the 3-handshape is independently associated with obscenities. Alternatively, there is a phonological account. Handshapes V and 3 differ only by closed or open thumb, as noted in the discussion of V > 3 in MOTHERFUCKER. The opening of a closed thumb is also seen in the lexicalized fingerspelling loan sign #NO. The tucked-in thumb of N, when paired with the following O, is replaced by the open thumb which then meets the extended fingertips to form O. Perhaps the same kind of phenomenon is at play here: in anticipation of the open thumb of the 10-handshape of the second half of the sign, the thumb of the V-handshape opens to 3.

Our linguistic consultants produced many variants on FUCK-UP, and undoubtedly, there are more variants that other signers across the USA and Canada produce, but the two variants we have discussed are representative of the kinds of complex morphological and phonological play that we have seen.

Finally, there are various signs we label FUCK-UP-IN-THE-HEAD. One variant is one-handed made at the forehead. The 3-handshape (with the index finger in contact with or close to the forehead) then changes to a 10-handshape as it moves forward, away from the forehead, as shown in Illustration 12.

Another variant is identical, except the middle finger of the 3-handshape starts out in contact with the forehead. A third variant starts with both fingers of the 3-handshape in contract with the forehead, then the hand changes to a 10-handshape as it moves to the ipsilateral side. All these signs are used to describe someone who is very drunk or obviously on drugs, and they clearly make use of the cognitive connotation association with the location of forehead to enrich the meaning as they blend and compound and make use of that (mysterious) 3-handshape again.

4.6. Implications

In sum, while the examples of taboo-terms here are phonologically or morphologically creative in a number of ways, all those various ways are also employed in creative language that does not involve taboo terms (such as jokes) and sometimes are involved even in the ordinary lexicon. So the study of the coining of taboo terms reinforces what we know about coining signs in ASL in general.

Further, these taboo terms are humorous, and that fact turns out to be important. It's been shown that humor is a key factor in whether or not a slang term is memorable, and the quality of being memorable affects whether a slang term is evanescent or remains in the language for years (Chesley and Baayen, 2010; Labov, 1992). Since taboo terms are used in many of the same social conditions in which slang is used, particularly in creating a sense of familiarity with others who use the same slang and a sense of being distinct from and not understood by those who don't use that slang (Andersson and Trudgill, 1990; Labov, 1992), we might well expect humor to be a key factor in whether or not a taboo term disappears quickly or gets entrenched. The taboo terms discussed in this section are, indeed, considered humorous, and they (or variants of them) are well-entrenched not just in the Deaf communities we have studied but also in Deaf communities we have questioned our friends about, adding another argument to the claim that humor is relevant to the memorability of new lexical items. The entrenchment of taboo terms might, in fact, be of particularly strong importance in Deaf communities since the use of humor in creating a close linguistic community and in establishing one's membership in such a community, is especially strong among Deaf communities, at least in North America and the United Kingdom (Sutton-Spence and Napoli, 2009).

5. Taboo expressions and the syntax

Taboo expressions can appear as isolated structures. They can also be embedded within larger syntactic structures. And, finally, they can form whole sentences that serve to emphasize a previous sentence, or to give new information related to the situation asserted in the previous sentence.

5.1. Syntactically isolated taboo terms

We pointed out in the introduction that taboo terms in many spoken languages can function as exclamations (*Oh, damn!*), maledictions (which are often in the form of imperatives; *go fuck yourself*), and name-calling (*you ass-wipe*) (Napoli and Hoeksema, 2009, and see the references cited there). Employment of taboo terms in these three functions occurs naturally in ASL, as well, and with a similar range of lexical items to those found in spoken languages and a similar generally insulting or rude tone (although that is context dependent). Among exclamations we find HELL, DAMN, SHIT.

A frequently used taboo is the loan sign F-K! (that is, the lexicalized fingerspelling), which can be used for malediction (as in F-K, directed toward a spatial index, to mean *Fuck that!*). Another common malediction is FUCK-YOU, in which the taboo finger gesture moves the hand upward, so that the middle finger points up. Arguably, this is not a sign, but the gesture found in spoken language, as well. (There is another predicate that uses this taboo finger gesture and has become a directional sign, with the middle finger pointed at a spatial index; this particular verb has been bleached in meaning, so that it is no longer taboo, and has more the sense of 'ditch' as in *I'm ditching you*. Since it is no longer taboo—in fact, not even rude in the slightest way—we will not discuss it further here.)

Name-calling includes various examples, such as variants of ASSHOLE (such as A-H and an F-handshape), SLUT, PUSSY. We note that often anatomical and taboo terms are distinguishable only by the dynamics of movement and the nonmanuals. For example, VAGINA, the anatomical term, differs from PUSSY, the name-calling taboo term, by the fact that the latter calls for a quick, sharp movement and sometimes an angry (or perhaps joking, depending on the situation) facial expression.

In none of these three functions do the taboo terms raise problematic questions with respect to syntactic structure in any spoken or sign language we know of (except perhaps the use of both *fuck you* and *fuck yourself* in English—see Dong, 1971—and other peculiarities in Zwicky et al., 1971). That's because in these conversational functions the taboo term tends to occur in syntactic isolation; it is not embedded within a larger syntactic structure.

5.2. Syntactically embedded taboo terms

There are other conversational functions that taboo terms can serve, however. For one, in English they can be referential NPs (I hate that bitch) or predicates (He's a real ass-wipe/He fucks up everything.). Such uses occur in ASL, not surprisingly, given that taboo items occur in name-calling and maledictions.

In English we also find taboo terms used as pejorative modifiers (the professor from hell), degree adverbials (scared shitless), and, especially, emphasis in a wide variety of syntactic structures (What the fuck is she talking about? Get the hell out of here! Like fuck I will! and so on). Other spoken languages of Europe exhibit a different but similarly wide range of uses for taboos, including Dutch, Italian, and Polish (Napoli and Hoeksema, 2009). Study of these uses often does, in fact, tell us quite a bit about the syntactic structure of the language since the taboo terms in these uses are embedded within larger syntactic structures (and see Hoeksema and Napoli, 2008, in particular). These uses can often be purely emphatic, carrying no sense of insult or rudeness (although crudeness and vulgarity are still present, so they are still taboo).

Comparable emphatic uses of taboo terms embedded in larger syntactic structures in ASL are hard to find. We have not yet found an example of a taboo term acting as a pejorative modifier, for example (so nothing like *She's a fucking bully*). Examples of taboo terms as degree adverbials also escape us (so nothing like *She's so fucking beautiful*). However, we have found a few instances of taboo terms used for emphasis in other syntactic structures. It will turn out useful to organize our discussion in comparison with English examples.

In the English sentence given in (1) the taboo term is purely emphatic:

(1) Get the fuck out of bed before Mamma comes home.

Here we could convey the same command without the taboo term:

(2) Get out of bed before Mamma comes home.

but the addition of the taboo term adds urgency.

In other English sentences, the taboo term is crucial for grammaticality:

- (3) She beat the hell out of him.
- (4) *She beat out of him.

This is because the taboo term in (3) fills the grammatical function of direct object. Still, its conversational function is to carry emphasis. (For an overall comparison of structures like those in (1) versus those in (3), see Hoeksema and Napoli, 2008.) ASL also uses taboo terms for emphasis (as we discuss immediately below), but not generally with intransitive verbs. The only exception that we have come across is a taboo term used with the intransitive verb we'll call FINISH, which consists of a 5-handshape extended forward and trilled (that is, shaking rapidly), palm facing contralateral. (It is like the dominant hand of the sign TREE, just with the forearm extended forward instead of pointing upward.) The taboo term F-K or the taboo finger gesture can emphasize this sign, as in (5), which is shown in Illustration 13.

(5) F-K FINISH!

'That's fucking enough already.'

There is a FINISH aspectual marker as well as a FINISH verb. FINISH in (5) is the verb, not the aspectual marker. (5) is understood as an order or request, and the request is, precisely, to stop doing something (whatever one has been doing, which is unstated in this sentence)—that is, to finish. Importantly, (5) does not mean that a sexual act (literal or figurative) has ended, which is the reading we would get if F-K was the verb and FINISH was the aspectual marker.

Like taboo terms used for emphasis in spoken language, the taboo term in (5) can have a playful force or a serious one; so (5) can be comparable to English *Cut it out! Stop it!*, or, more literally, the gloss we assigned it. The nonmanuals in (5) give evidence that this is a single clause (Nicodemus, 2009; Sandler, 1999). That is, we observed no lengthening of signs, eye blink, body leans, hand clasping, cheek puffing, nose wrinkling or changes in head position or eye aperture between F-K and FINISH.

We note that in English taboo NPs used for emphasis eschew sentence-final position. So we find contrasts like:

(6) Shut the fuck up!

But not:

(7) *Shut up the fuck!

English emphatic taboo NPs like to be sandwiched between the verb and some coda (to use Hoeksema and Napoli's 2008 term) that finishes off the referential extension of the action or state of the verb, although they may be sentence-final in

elliptical expressions like What the fuck?! This might be due to the history of this emphatic use of taboo expressions; they might have arisen via analogy with taboo expressions that originally were true direct objects followed by PPs (as in (3) and examples like Beat {the devil/the hell} out of him). Since direct objects come between the verb and a following PP, that would be the natural position for the emphatic taboo expression.

Interestingly (and a fact we will return to), it appears that ASL also disfavors placing emphatic taboo NPs in sentence-final position. So none of our consultants felt comfortable with moving F-K to follow FINISH in (5), for example. In (5) we have no direct object, but we find that discomfort with a sentence-final emphatic taboo term holds even when a direct object is present. For example, the English sentence *She scared the hell out of me* can be rendered in ASL with a verb, its direct object, and an emphatic taboo term sandwiched between them:

(8) GIRL SCARE HELL ME. 'The girl scared the hell out of me.'

(While there are variants for signs meaning 'hell', the one our linguistic consultants used in (8) is the one given in Illustration 1.) However, our consultants did not like (8) when HELL was moved to sentence-final position.

English can also insert a taboo NP or PP after a wh-word for emphasis (What the fuck are you doing? Where the hell did you find him? How in fuck's name can I respond to that?). This can also be done in ASL:

- (9) WHERE FUCK HE GO? 'Where the fuck did he go?'
- (10) WHAT HELL YOU {BEHAVE/ACT}? 'What the hell are you doing?'

We note that in (9) some of our linguistic consultants reduced FUCK to simply the dominant hand making a V-handshape, jabbing in neutral space, and others used the taboo finger gesture rather than the sign FUCK, although they said the one-handed variant of the sign was possible there, too. (These informants ranged in age from 22 to 32, and the youngest claimed that this was very commonly seen among students at Gallaudet, where he was then (that is, in 2011) a student. Our older informants did not use the taboo finger gesture here.) In fact, with the one-handed variant of the sign FUCK, (9) is even more emphatic; the one-handed FUCK is more drawn out, giving it an exaggerated sense. (We also note here that there are various signs meaning 'what'. The variant used in (9) and (10) was always the 1-handshape of the dominant hand hitting and moving down and across the B-handshape of the nondominant hand. We leave this observation without explanation.)

While the example in (5) was produced spontaneously, the uses of taboo terms in (8–10) were produced only after we questioned our consultants specifically about these kinds of constructions. Since all our consultants are literate in English and since we explained what we were looking for by bringing up English examples, (8–10) might well be due to contact with English (which is why we framed this discussion in terms of comparison to English). It's possible that (5) is, as well. We suspect this for several reasons.

For one, the discomfort with the emphatic taboo appearing in sentence-final position in (5) and (8) follows from English influence, but is otherwise unaccounted for.

For another, the introduction of the taboo finger gesture in (9) is clearly influenced by its use among hearing people. For a third, the use of an independent lexical item to emphasize another lexical item is not characteristic of ASL. Scholars of sign literature (Robinson, 2006, among many), and teachers of ASL (such as Grayson, 2003, among many) agree that instances of intensification or emphasis in ASL are more typically handled by modulating the movement or by nonmanual means. In particular, nonmanuals are used to convey the information we find in degree modifiers in English, such as *very* or *really* (Bridges and Metzger, 1996). Linguists seeking a unified syntactic account of the lack of manual degree modifiers and of taboo-terms used as intensifiers might propose that these items fill a single syntactic slot and that ASL lacks this slot, an explanation that could lead to interesting contrastive studies with sign languages such as Auslan, which does allow a few degree modifiers (Johnston and Schembri, 2007). We take a different approach below, appealing to timing considerations. But whatever the explanation for the lack of manual degree modifiers, the use of taboo items to emphasize other signs would be atypical of ASL syntax, casting doubt on the naturalness of (5) and (8–10).

And finally, surface word order in ASL is quite different from English. In asking where one went, for example, WHERE is more likely to occur in sentence-final position than sentence-initial position. But in (9) and (10) and all other such examples our informants produced, the word order corresponded closely to English word order, and, we repeat, our informants are all literate in English. In particular, our informants did not produce examples with the same lexical signs in (9) or (10) just arranged in a different syntactic order (such as *HE GO FUCK WHERE? or *HE GO WHERE FUCK?), nor did they accept such sentences when we asked.

Nevertheless, we should not be hasty in dismissing the data in (8–10), especially since there is debate over the underlying word order of ASL. (ASL has been argued to have underlying SVO order (as in Fischer, 1975), V-final order (as in Friedman, 1976), and topic-comment order (as in Baker and Cokely, 1980). To this list we add that ASL has been analyzed as varying between SVO and SOV depending on sociolinguistic factors (Woodward, 1980). So it is important to take a moment to pursue the possible implications of data like those in (9–10), in particular.

In contrast to (9–10), for example, we note that if the wh-word is in final position, the sentence is not acceptable with the same interpretation for our consultants. That is, if we move WHERE to the end of (9), the result is grammatical only if the now-initial FUCK is an independent exclamation (with all the nonmanual indications of a separate utterance, see Nicodemus, 2009; Sandler, 1999), as in the English *Fuck! Where did he go?*

If a researcher could find linguistic consultants who produced (9–10) unselfconsciously (that is, not trying to import an English usage into ASL), this construction in ASL could offer interesting evidence for the proposal that wh-words are moved to the left (Petronio and Lillo-Martin, 1991) rather than to the right (Neidle et al., 2000) in ASL, exemplifying how the study of taboo terms can illuminate syntactic issues in a language. We leave the question open.

In sum, taboo terms used for emphasis, while not frequently found in ASL (at least among our consultants), may still give us useful information about the syntax of the language, particularly with respect to the analysis of wh-questions.

As an addendum to this subsection on taboo terms within larger syntactic structures, we have found bleached taboo terms used as predicates that have unusual syntactic behavior for ASL. Since the semantic bleaching means they are not, in fact, taboo—indeed, they aren't even considered rude or vulgar (people use them in family and school settings, for example)—we discuss them separately (Napoli et al., in progress).

5.3. Taboo classifier sentences used as emphasizers

In English, one can make emphatic a sentence like *She's beautiful*, by adding a taboo term, as in *She's fucking beautiful*. In ASL our consultants do not do this. However, one way they can emphasize such a sentence is to follow it by another sentence that is explicitly sexual or scatological or otherwise taboo. That is, in ASL one can have taboo expressions (here, whole sentences) that do not necessarily involve any single manually expressed taboo term. So one might sign:

(11) SHE BEAUTIFUL. GET-ERECTION.

This means something like 'She's so beautiful, it makes me hard.' The second sentence consists of only a classifier construction: a 1-handshape classifier below or near the waist shoots from pointing down to forward.

Sometimes these taboo sentences do not emphasize the assertion of the previous sentence, but instead give new information related to the situation asserted in the previous sentence. In these cases, as well, the classifier taboo sentences are highly emphatic. The classifier sentence in (11) (the second sentence), then, might well follow a sentence like LOOK-AT-HER, without any mention of her attractiveness. Likewise, one might sign (12) or (13):

(12) OPEN-DOOR. NIPPLES-STIFFEN.

(13) OPEN-DOOR, BALLS-SHRINK

These mean something like 'I opened the door. It was so cold {my nipples got hard/my balls shrank}.' (And in context, of course, the subject need not be first person.) For (12) and (13), again, the taboo sentences consist of classifiers. In (12), the 1-handshape classifier on each breast shoots from pointing down to forward. For (13), both hands are in a claw (the bent 5-handshape) in neutral space with the palms oriented up. Then the fingers close more, almost to an S-handshape. The torso might get involved in both of these, with the upper arms pulling closer to the sides of the chest and the shoulders tightening, as in the sign COLD (and might be analyzed as a blend of some of the phonological features of COLD into the classifier construction).

These taboo classifier sentences are humorous; again (as we saw above in the coining of individual taboo terms), they have a flair comparable to the classic British sentence *It was cold enough to freeze the balls off a brass monkey.* They are typical in ASL as well as in British Sign Language (Rachel Sutton-Spence, personal communication, September 2011).

6. Non-lexical ways of conveying taboo-level rudeness, insults, or emphasis: phonetic properties and the nonmanuals

Conversing rudely or insultingly in a spoken language does not necessarily call for the use of taboo terms, of course, nor does speaking emphatically. In many spoken languages one can be incredibly nasty merely employing a certain tone

(try saying *Thank you* with a disdainful tone). Further, one can be emphatic by adding words other than taboo terms (such as the word *incredibly* in the previous sentence). However, spoken languages, particularly in the western world, can and often do insert taboo terms into an otherwise inoffensive sentence in order to emphasize it (Napoli and Hoeksema, 2009, and the references cited there).

ASL, on the other hand, does not typically insert emphasizing taboo terms into an otherwise inoffensive sentence, as discussed earlier. While doubling (Petronio, 1993) or copies (Lillo-Martin, 1991) can also be used for emphasis, two more common ways are to modulate phonetic properties of signs or to employ appropriate nonmanuals. A discussion of these factors will turn out to shed light on differences in the uses of taboo expressions between ASL and English.

6.1. Modulation of phonetic properties

A very common way to show emphasis is to increase the speed of movement (Coulter, 1990) or the size of signs. For example, in experiments in which sighted signers were under conditions of reduced vision, in order to shout (purely because of visual noise here, not for the sake of emphasis or rudeness), they produced signs within a larger volume of signing space, with greater velocity, greater distance traveled, and a longer duration (Emmorey et al., 2009). Rather than adding FUCK or F-K to an order like that in (1) above (Get the fuck out of bed before Mamma comes home), one would simply sign the equivalent of (2) with fast, jerky, large motions (Get out of bed before Mamma comes home).

An aside about terminology is in order here. Since the phonetic properties discussed above tend to spread across intonational phrases (Nespor and Sandler, 1999; Wilbur, 1999), their domain is not the word. Given that, one might want to call them suprasegmentals, of a kind similar to intonation for dynamics, and to intensity (loudness) for size. However, the term *suprasegmental* often carries with it the notion of distinctive contrast (as in lexical tone), so we are uncomfortable applying it to instances where the only matter at stake is emphasis. The phonetic variants of interest to us here contrast not linguistically but paralinguistically (for relevant discussion, see Crasborn, 2001; Mauk, 2003). For that reason we frame our discussion around phonetic properties rather than suprasegmentals.

6.2. Nonmanuals

Beyond playing with the manual phonetic properties of signs to convey emphasis or rudeness, signers can avail themselves of nonmanuals. Nonmanuals in ASL have similar functions to intonation in English with respect to conveying both grammatical information (such as question-formation—Lillo-Martin, 2005; Sandler and Lillo-Martin, 2006) and affective information (such as insult or rudeness). Furrowed brows, pursed lips, and a torso leaning forward when ordering someone to get out of bed before the mamma comes home, for example, can be extremely emphatic.

In spite of the similarity of functions of nonmanuals in ASL to intonation in English, we treat the nonmanuals separately from the phonetic properties. Both are able to be superimposed on a string of manual signs, however, they differ in that the nonmanuals can occur without the manuals at all (for discussion, see Stokoe, 1972). Additionally, the phonetic properties, while conveying emphasis, cannot alone convey rudeness or insult. But the nonmanuals can. The nonmanuals are the key conveyers of insult or rudeness in ASL and the keys to mitigating potentially insulting or rude comments (Hoza, 2008; Roush, 2007).

Most studies about the nonmanuals examine their grammatical functions (such as Pfau and Quer, 2010), rather than their affective functions, probably because it is in their grammatical functions that we gain information about syntactic structure. Even the scholar Bienvenu (1989:22), when writing about humor in sign language, gives only the slightest nod to affective nonmanuals: "Of course the humor is most pronounced when a contorted face accompanies the deviant signs..." Indeed, affective nonmanuals are crucial in sign language humor (Sutton-Spence and Napoli, 2009). While scholars will mention that the affective nonmanuals are critical to understanding a sign language sentence, they by and large omit description of these nonmanuals, as though we can all easily imagine what they might be.

However, there are a handful of studies which do describe the particulars of affective nonmanuals, such as the important studies that contrast affective and grammatical uses of nonmanuals in questions: Baker-Shenk (1983) and de Vos et al. (2009). Several other studies that look at affective nonmanuals concern politeness in sign languages and most of those deal mainly with register (Baker and Cokely, 1980; Hoza, 2007, 2008; Liddell and Johnson, 1989; Ross and Berkowitz, 2008; Roush, 2007; Zimmer, 1989). George (2011), in fact, who examines Japanese Sign Language, proposes that the affective nonmanuals have typological salience across sign languages as the crucial factor in politeness versus rudeness.

Nonmanuals conveying politeness are easily distinguished from other nonmanuals. In a study of requests in ASL, Roush (2008), building on Hoza (2007), found that what's known as a polite pucker (puckering and protruding the lips, similar to what is known as the mm mouth in Baker and Cokely, 1980) indicates solidarity and is a signal of a cooperative stance. Tight lips can be used to mitigate moderate impositions. A polite grimace (a worried look that involves clinching

and exposing the teeth) mitigates more serious threats to face (often conveying deference), and a polite grimace frown (a polite grimace in which the corners of the mouth turn downward) mitigates severe threats to face. Finally, the body-head teeter (rocking of the body and head from side to side) can mitigate extreme impositions associated with difficult requests or rejections.

Likewise, the nonmanuals can indicate rudeness or insult, though we know of only scattered remarks here and there in the literature to that effect, and we have found no explicit descriptions of rude or insulting nonmanuals. In Wilbur (2011) we find the mention that affective nonmanuals in ASL can show anger, with reference to an illustration of the poet and storyteller Patrick Graybill. In the illustration Graybill's eyes are wide with a diagonally upward gaze. And in Wilbur (1987) we find the observation that nose wrinkling can have an evaluative purpose, showing the signer's attitude toward the topic under discussion.

We have observed several nonmanuals that occur with taboo signs, but also occur with rude commands, questions, or remarks in ASL that do not employ taboo signs. In these latter instances, the nonmanuals themselves are the conveyors of rudeness and insult—so much so that signers can respond to them just as they would to a manual taboo expression. Like Wilbur (2011), we include widened eyes on the list (and, remember, that the rudeness comes out only in context—so not all instances of widening eyes are rude). However, narrowing of the eyes can also add emphasis, which in a given context can be exceedingly rude. And like Wilbur (1987), we put nose wrinkling on the list. Several other nonmanuals can signal offensive language, as well. A stiff upright torso can indicate a superior attitude, while a torso leaning distinctly forward can be aggressive or threatening. A tight face, where lips are pursed, cheeks are bunched, and eyebrows are lowered, typically goes with an angry outburst (and such combinations have been argued to have a biological basis and thus be universal, see Ekman, 1982 and other work by him and his colleagues). A deadpan face can show deadly sarcasm. A protruding tongue can be obscene or otherwise highly offensive. Gazing away, so that eye contact is broken, signals that one has exited the conversation, which can be as rude as clapping hands over ears in spoken language (Lewis and Henderson, 1997).

6.3. Mimicry and manual codes

Playing with phonetic properties and the nonmanuals is typical of constructed dialogue in ASL (Metzger, 1995). One kind of insulting constructed dialogue is mimicking someone's language. In spoken language, mimicry is used to great effect when a speaker ridicules a non-native speaker for language errors. In a sign language pointing out differences in language can be simply a form of jest, or an extremely biting insult, strong enough to be considered taboo language—so that adults might look askance at it and parents might scold their children for it. Mimicry can involve the lexicon, the morphology, and the syntax, and it consistently involves phonetic properties and always involves the nonmanuals.

In ASL one way to insult hearing people who are just learning sign is to mimic them by signing with large, jerky movements and cramped or wild handshapes, yielding something that is somewhat close to real signs but not quite there. The result is gobbledy-gook. Such insults can be made even less subtle by including whole body movements (which would never occur in sign, such as twirling around or leaping) or locations for signs that are phonologically impermissible (such as the middle of the back or the bottom of the foot). In all this, again, the nonmanuals are key. The face, in particular, shows the idiocy of the person mimicked, as with a vacant gaze and perhaps a sideways protruding tongue tip.

In ASL it is also not uncommon to insult spoken language in general and, hence, hearing people in general. One kind of insult is to mimic a hearing person's speech by moving the lips quickly and keeping the face deadpan. Movement of the lips alone could seem to be merely a weird muscular behavior—but the nonmanuals tell us this is mimicry of speech, since hearing people are notorious for lacking expression in their faces as they talk.

Another kind of insult of hearing people with respect to how they talk is to sign not ASL, but, instead, one of the several forms of Manually Coded English (MCE) (such as Signed Exact English (SEE)). The mockery here is more closely tied to education and culture. Signers doing this are demonstrating that they know what MCE is and that it is not ASL. This second point is important, since many hearing people either have no idea that ASL is not simply a manual version of English or have tried to push MCE on deaf people, often with the misguided assumption that this would be an aid in gaining literacy. This kind of mockery can be at once a rebellion against an ineffective educational policy and a show of pride in the communicative superiority of ASL over MCE.

In these insults, as well, the face is where we learn whether this is light jest or lethal insult or something in between. The nonmanuals are consistently crucial with regard to the issues of this paper.

7. Concluding discussion

Sign languages and spoken languages can each coin a range of taboo terms, exploiting various morpho-phonological processes, and use them in exclamations, name calling, and maledictions. They can each use taboo terms as referential

NPs or as predicates in larger utterances. They can have whole clauses that are taboo in nature and that give emphasis to some other clause (often a prior independent sentence). And they each exploit phonetic properties and facial expressions to support the intent in these taboo expressions. This should come as no surprise: there is a tendency for emotionally-charged speech to be identifiable by facial expression and by phonetic properties, such as loudness (Barra et al., 2006), so we might expect emotionally charged sign to be likewise identifiable by facial expression and by phonetic properties, including rate of language production.

Further, they can each employ a single mechanism to convey rudeness or insult as well as emphasis. In a sign language, that single mechanism is the nonmanuals (facial expression, head and torso position). A sign simply cannot be emphatic or rude (even a taboo term) without the appropriate nonmanuals, where generally the nonmanuals for emphasis are distinct from the nonmanuals for rudeness (so ambiguity does not arise). In fact, nonmanuals alone can constitute taboo expressions in the absence of any manually expressed language at all and, in particular, in the absence of manually expressed taboo terms.

In spoken language that single mechanism is taboo terms. And notice that taboo terms can be used without any particular loudness or pitch and still maintain their emphatic or rude status. Saying softly, in a formal tone, and with a sweet face, "Get the fuck out of my office," is just as effective—and perhaps more so—than saying it loudly, with an agitated tone, and with an angry face.

Why should emphasis fall together with rudeness or insult in both modalities? It would seem to be merely a case of strong language. When insulting someone, you want to be strong. When emphasizing something, you want to be strong. So why not be efficient and use one mechanism for a range of situations in which strength is needed, allowing context to distinguish between the two?

While we may share an intuitive sense of what strong language is, it is useful to attempt to find measures. One measure of strength in language is how long it stays in short term memory. In surprise memory tests, recall of taboo terms and language concerning taboo topics is superior (Allan and Burridge, 2006) regardless of phonetic features. Further, among facial expressions, angry ones (the ones most closely aligned to those one might find in rude or insulting language in ASL) not only have enhanced recall but also superior accuracy in surprise recognition tasks when presented to depressed individuals (Wells et al., 2010). Since signers have superior working memory for faces than non-signers do and since this is centered on recall of facial features with communicative import (eyes, mouth, nose) rather than features not used in sign language (such as shape of the face, protrusion of the cheekbones, and so on—see Keehner and Atkinson, 2006, for an overview), memory could well be the relevant measure for strength with respect to nonmanuals in ASL, too (even for individuals who are joyous).

Both modalities, then, can use lexical and non-lexical features in these strong messages, but in a sign language the nonmanuals are a necessity while in a spoken language they are often but not always important. The differences between the two modalities then is not one of spoken languages using taboo terms while sign languages use nonmanuals, but rather in the extent to which each use both mechanisms.

We suggest that the contrast between the heavy reliance on nonmanuals for rude or emphatic modification in ASL and the rather frequent use of taboo terms for emphasis among certain speakers of English and many other western languages is due to timing differences between the two modalities. Speech articulators move much more quickly than sign articulators do. So adding lexical items to a sign sentence increases the duration of an utterance much more than adding lexical items to a spoken sentence (Klima and Bellugi, 1979, chapter 8). That fact has been used to account at least partially for why sign languages so often use layering or simultaneous occurrences (Bellugi and Fischer, 1972; Klima and Bellugi, 1979; Meir and Sandler, 2008; Wilbur, 2000, 2009; and many others). Exploitation of the affective nonmanuals, in contrast to addition of lexical items, requires no additional time, allowing information to be prosodically integrated into the message in an efficient way. The affective nonmanuals, then, are the perfect way to convey both rudeness and emphatic modification in a sign language.

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Appendix A. Supplementary data

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References

Allan, K., Burridge, K., 2006. Forbidden Words: Taboo and the Censoring of Language. Cambridge University Press, Cambridge.

Andersson, L., Trudgill, P., 1990. Bad Language. Oxford University Press, Oxford.

Baker, C., Cokely, D., 1980. American Sign Language: A Student Text. T.J. Publishers, Silver Spring, MD.

Baker-Shenk, C., 1983. A microanalysis of the nonmanual components of questions in American Sign Language. Doctoral dissertation, University of California, Berkeley.

Barra, R., Montero, J.M., Macias-Guarasa, J., D'Haro, L.F., San-Segundo, R., Cordoba, R., 2006. Prosodic and segmental rubrics in emotion identification. In: Proceedings of the International Conference on Acoustics, Speech, and Signal Processing. pp. 1085–1088.

Battison, R., 1978. Lexical Borrowing in American Sign Language. Linstok Press, Silver Spring, MD.

Bellugi, U., Fischer, S., 1972. A comparison of sign language and spoken language. Cognition 1 (2-3), 173-200.

Bienvenu, M.J., 1989. Reflections of deaf culture in deaf humor. In: Erting, C., Johnson, R.C., Smith, D.L., Snider, B.C. (Eds.), The Deaf Way: Perspectives from the International Conference on Deaf Culture. Gallaudet University Press, Washington, DC, pp. 16–23.

Brame, M., 1978. Base Generated Syntax. Noit Amrofer, Seattle, WA.

Bridges, B., Metzger, M., 1996. DEAF TEND YOUR: Non-manual Signals in ASL. Calliope Press, Silver Spring, MD.

Bybee, J., 1985. Morphology: A Study of the Relation between Meaning and Form. John Benjamins, Amsterdam.

Chesley, P., Baayen, R.H., 2010. When listeners become speakers: an experimental study of factors leading to active entrenchment. Unpublished ms. University of Minnesota Department of Linguistics, Minneapolis, MN.

Coulter, G., 1990. Emphatic stress in ASL. In: Fischer, S.D., Siple, P. (Eds.), Theoretical Issues in Sign Language Research: Linguistics, vol. 1. University of Chicago Press, Chicago, IL, pp. 109–126.

Crasborn, O., 2001. Phonetic Implementation of Phonological Categories in Sign Language of the Netherlands. LOT, Utrecht, The Netherlands. de Vos, C., van der Kooij, E., Crasborn, O., 2009. Mixed signals: combining linguistic and affective function of eyebrows in questions in sign language of the Netherlands. Language and Speech 52 (2/3), 315–339.

Del Giudice, A., 2007. A constraint-based analysis of compound formation in the sign modality. (accessed 12.09.11) http://idiom.ucsd.edu/~delgiudice/DelGiudice-ASLcompounds.pdf.

den Dikken, M., Giannakidou, A., 2002. From hell to polarity: aggressively non-D-linked wh-phrases as polarity items. Linguistic Inquiry 33, 31–62. Dong, Q.P., 1971. English sentences without overt grammatical subjects. In: Zwicky, A., Salus, P., Binnick, R., Vanek, A. (Eds.), Studies Out in Left Field: Defamatory Essays Presented to James D. McCawley on his 33rd or 34th birthday. Linguistic Research, Edmonton, Alberta, (accessed 28.12.10), pp. 3–10. http://douglemoine.com/english-sentences-without-overt-grammatical-subjects/.

Ekman, P., 1982. Emotion in the Human Face. Cambridge University Press, New York.

Emmorey, K., Gertsberg, N., Korpics, F., Wright, C.E., 2009. The influence of visual feedback and register changes on sign language production: a kinematic study with deaf signers. Applied Psycholinguistics 30, 187–203.

Fernald, T., Napoli, D.J., 2000. Exploitation of morphological possibilities in signed languages: comparison of American Sign Language with English. Sign Language and Linguistics 3, 3–58.

Fischer, S., 1975. Influences on word order change in American Sign Language. In: Li, C. (Ed.), Word Order and Word Order Change. University of Texas Press, Austin, TX, pp. 3–25.

Fischer, S., Gough, B., 1978. Verbs in American Sign Language. Sign Language Studies 18, 17-48.

Friedman, L., 1976. The manifestation of subject, object, and topic in American Sign Language. In: Li, C. (Ed.), Subject and Topic. Academic Press, New York, NY, pp. 125–148.

Frishberg, N., 1975. Arbitrariness and iconicity: historical change in American Sign Language. Language 51, 696–719.

Gadley, E., 2010. Shasta College Student Try to Get their ASL Teacher Reinstated. (accessed 16.11.11) http://www.khsltv.com/content/localnews/story/Shasta-College-Student-Try-to-Get-Their-ASL/QLSnlzkgbkSoea-3-iAX3w.cspx.

George, J.E., 2011. Politeness in Japanese Sign Language (JSL): polite JSL expression as evidence for intermodal language contact influence. Doctoral dissertation, University of California, Berkeley. http://linguistics.berkeley.edu/dissertations/JGeorge_dissertation_2011.pdf.

Grayson, G., 2003. Talking with Your Hands, Listening with Your Eyes: A complete Photographic Guide to American Sign Language. Square One Publishers, Garden City Park, NY.

Hoeksema, J., 2001. Rapid change among expletive polarity items. In: Brinton, L. (Ed.), Historical Linguistics 1999. Selected Papers from the 14th International Conference on Historical Linguistics, Vancouver, 9–13 August 1999. John Benjamins, Amsterdam/Philadelphia, pp. 175–186. Hoeksema, J., 2002. Minimaliseerders in het standaard-Nederlands. Tabu 32, 105–174.

Hoeksema, J., Napoli, D.J., 2008. Just for the hell of it: a comparison to two taboo-term constructions. Journal of Linguistics 44, 347-378.

Horn, L., 2001. Flaubert triggers, squatitive negation and other quirks of grammar. In: Hoeksema, J., Rullmann, H., Sánchez-Valencia, V., van der Wouden, T. (Eds.), Perspectives on Negation and Polarity Items. John Benjamins, Amsterdam, pp. 173–202.

Hoza, J., 2007. It's Not What You Sign: It's How You Sign It. Gallaudet University Press, Washington, DC.

Hoza, J., 2008. Five nonmanual modifiers that mitigate requests and rejections in American Sign Language. Sign Language Studies 8, 264–288. Huang, C.-T.J., Ochi, M., 2004. Syntax of *the heli:* two types of dependencies. In: Moulton, K., Wolf, M. (Eds.), Proceedings of NELS, vol. 34, Graduate Linguistics Student Association University of Massachusetts, Amherst, MA, pp. 279–293.

Hughes, G., 1992. Swearing: A Social History of Foul Language. Wiley-Blackwell, London.

Johnston, T., Ferrara, L., 2011. Lexicalization in sign languages: when is an idiom not an idiom? In: Proceedings the 3rd UK Cognitive Linguistics Conference, University of Hertfordshire, 6–8 July 2010, In: http://www.uk-cla.org.uk/proceedings.

Johnston, T., Schembri, A., 1999. On defining a lexeme in a signed language. Sign Language and Linguistics 2 (2), 115-185.

Johnston, T., Schembri, A., 2007. Australian Sign Language: An Introduction to Sign Language Linguistics. Cambridge University Press, Cambridge.

Keehner, M., Atkinson, J., 2006. Working memory and deafness: implications for cognitive development and functioning. In: Pickering, S. (Ed.), Working Memory and Education. Elsevier, London, pp. 189–219.

Klima, E., Bellugi, U., 1975. Wit and poetry in American Sign Language. Sign Language Studies 8, 203-224.

Klima, E., Belluqi, U., 1979. The Signs of Language. Harvard University Press, Cambridge, MA.

Labov, T., 1992. Social and language boundaries among adolescents. American Speech 67, 339-366.

Lentz, E.M., 1995. The baseball game. In: Taylor, L. (Director), Smith, C., Mikos, K., Lentz, E.M. (Producers), The Treasure: Poems by Ella Mae Lentz. Motion Press, Berkeley, CA.

Lewis, K.B., Henderson, R., 1997. Sign Language Made Simple. Doubleday, New York.

Liddell, S., 1981. American Sign Language Syntax. Mouton, The Hague.

Liddell, S., 2003. Grammar, Gesture, and Meaning in American Sign Language. Cambridge University Press, Cambridge.

Liddell, S., Johnson, R.E., 1986. American Sign Language compound formation processes, lexicalization, and phonological remnants. Natural Language and Linguistic Theory 4, 445–513.

Liddell, S., Johnson, R.E., 1989. American Sign Language: the phonological base. Sign Language Studies 64, 195–277.

Lillo-Martin, D., 1991. Universal Grammar and American Sign Language: Setting the Null Argument Parameters. Kluwer Academic Publishers,

Lillo-Martin, D., 2005. Sign linguistics and the interfaces. In: Bateman, L., Ussery, C. (Eds.), Proceedings of the Thirty-Fifth Annual Meeting of the North East Linguistic Society, Graduate Linguistic Student Association, Amherst, MA, pp. 43–61.

Mandel, M., 1981. Phonotactics and morphophonology in American Sign Language. Doctoral dissertation, University of California, Berkeley. Mauk, C., 2003. Undershoot in two modalities: evidence from fast speech and fast signing. Doctoral dissertation, University of Texas, Austin. Meir, I., Sandler, W., 2008. A Language in Space: The story of Israeli Sign Language. Taylor & Francis, New York.

Merchant, J., 2002. Swiping in Germanic. In: Zwart, J.-W., Abraham, W. (Eds.), Studies in Comparative Germanic Syntax. John Benjamins, Amsterdam, pp. 295–311.

Merchant, J., 2006. Sluicing. In: Everaert, M., van Riemsdijk, H. (Eds.), The Syntax Companion. Blackwell, London, pp. 269-289.

Metzger, M., 1995. The paradox of neutrality: a comparison of interpreters' goals with the realities of interactive discourse. Doctoral dissertation, Georgetown University, Washington, DC.

Mindess, A., 2006. Reading between the Signs: Intercultural Communication for Sign Language Interpreters, 2nd edition. Nicholas Brealey Publishing, London.

Mirus, G., 2008. On the linguistic repertoire of Deaf cuers. Doctoral dissertation, University of Texas, Austin.

Montagu, A., 1967. The Anatomy of Swearing. Rapp & Whiting, New York.

Napoli, D.J., Hoeksema, J., 2009. The grammatical versatility of taboo terms. Studies in Linguistics 33, 612-643.

Napoli, D.J., Wu, J., 2003. Morpheme structure constraints on two-handed signs in American Sign Language: notions of symmetry. Sign Language and Linguistics 6, 123–205.

Napoli, D.J., Mirus, G., Fisher, J. Bleached taboo-term predicates in American Sign Language, in progress.

Neidle, C., Kegl, J., MacLaughlin, D., Bahan, B., Lee, R.G., 2000. The Syntax of American Sign Language: Functional Categories and Hierarchical Structure. MIT Press, Cambridge, MA.

Nespor, M., Sandler, W., 1999. Prosody in Israeli Sign Language. Language and Speech 42, 143-176.

Nicodemus, B., 2009. Prosodic Markers and Utterance Boundaries in American Sign Language interpretation. Gallaudet University Press, Washington, D.C.

Pesetsky, D., 1987. Wh-in situ: movement and unselective binding. In: Reuland, E., ter Meulen, A. (Eds.), The Representation of (In)definiteness. MIT Press, Cambridge, MA, pp. 98–129.

Petronio, K., 1993. Clause structure in American Sign Language. Doctoral dissertation, University of Washington.

Petronio, K., Lillo-Martin, D., 1991. Wh-movement and the position of Spec CP: evidence from American Sign Language. Language 73, 18–57. Pfau, R., Quer, J., 2010. Nonmanuals: their grammatical and prosodic roles. In: Brentari, D. (Ed.), Sign Languages. Cambridge University Press, Cambridge, pp. 381–402.

Postal, P., 2004. The structure of one type of American English vulgar minimizer. In: Postal, P. (Ed.), Skeptical Linguistic Essays. Oxford University Press, New York, pp. 159–172., In: http://www.nyu.edu/gsas/dept/lingu/people/faculty/postal/papers/skeptical/.

Postma, G., 1995. Zero semantics—a study of the syntactic conception of quantificational meaning. Doctoral dissertation, University of Leiden. Postma, G., 2001. Negative polarity and the syntax of taboo. In: Hoeksema, J., Rullmann, H., Sánchez-Valencia, V., van der Wouden, T. (Eds.), Perspectives on Negation and Polarity Items. John Benjamins, Amsterdam, pp. 283–330.

Robinson, C.L., 2006. Visual screaming: Willy Conley's Deaf theatre and Charlie Chaplin's silent cinema. In: Bauman, H-D.L., Nelson, J.L., Rose, H.M. (Eds.), Signing the Body Poetic: Essays on American Sign Language Literature. University of California Press, Berkeley, pp. 195–215.

Ross, L.L., Berkowitz, M.C., 2008. Academic ASL: it looks like English, but it isn't. In: Kolvitz, M. (Ed.), Conference Proceedings PEPNet 2008: Putting the Pieces Together, PEPNet, Columbus, OH, pp. 193–198.

Roush, D., 2007. Indirectness strategies in American Sign Language requests and refusals: deconstructing the deaf-as-direct stereotype. In:
Metzger, M., Fleetwood, E. (Eds.), Translation, Sociolinguistic, and Consumer Issues in Interpreting. Gallaudet University Press, Washington,
DC, pp. 103–158.

Rutherford, S., 1993. A Study of American Deaf Folklore. Linstok Press, Burtonsville, MD.

Sandler, W., 1999. Prosody in two natural language modalities. Language and Speech 42, 127-142.

Sandler, W., Lillo-Martin, D., 2006. Sign Language and Linguistic Universals. Cambridge University Press, Cambridge.

Schein, J., Stewart, D., 1995. Language in Motion: Exploring the Nature of Sign. Gallaudet University Press, Washington, DC.

Sprouse, J., 2005. The accent projection principle: why the hell not? In: Eilam, A., Scheffler, T., Tauberer, J. (Eds.), Penn Working Papers in Linguistics, vol. 12. University of Pennsylvania, Philadelphia, PA, pp. 349–359.

Stokoe, W., 1972. Semiotics and Human Sign Languages. Mouton & Co. N. V. Publishers, The Hague.

Supalla, S., 1992. The Book of Name Signs: Naming in American Sign Language. Dawn Sign Press, San Diego.

Sutton-Spence, R., Napoli, D.J., 2009. Humour in Sign Languages: The Linguistic Underpinnings. Trinity College, Dublin.

Wells, T., Beevers, C., Robison, A., Ellis, A., 2010. Gaze behavior predicts memory bias for angry facial expressions in stable dysphoria. Emotion 10 (6), 894–902.

Wilbur, R.B., 1987. American Sign Language: Linguistic and Applied Dimensions. College-Hill, Boston, MA.

Wilbur, R.B., 1999. Stress in ASL. Language and Speech 42, 229-250.

Wilbur, R., 2000. Phonological and prosodic layering of nonmanuals in American Sign Language. In: Emmorey, K., Lane, H. (Eds.), The Signs of Language Revisited: An Anthology to Honor Ursula Bellugi and Edward Klima. Lawrence Erlbaum, Mahwah, NJ, pp. 190–214.

Wilbur, R.B., 2009. Effects of varying rate of signing on ASL manual signs and nonmanual markers. Language and Speech 52, 245–285.

Wilbur, R.B., 2011. Modality and the structure of sign language: sign languages versus signed systems. In: Marschark, M., Spencer, P.E. (Eds.), Oxford Handbook of Deaf Studies, Language, and Education. 2nd edition. Oxford University Press, New York, pp. 350–366.

Wilcox, P., 2000. Metaphor in American Sign Language. Gallaudet University Press, Washington, DC.

Woodward, J., 1980. Sociolinguistic research on ASL: an historical perspective. In: Baker, C., Battison, R. (Eds.), Sign Language and the Deaf Community: Essays in Honor of William Stokoe. Linstok Press, Silver Spring, MD, pp. 117–134.

Zimmer, J., 1989. Toward a description of register variation in American Sign Language. In: Lucas, C. (Ed.), The Sociolinguistics of the Deaf Community. Academic Press, San Diego, CA, pp. 253–272.

Zwicky, A., Salus, P., Binnick, R., Vanek, A. (Eds.), 1971. Studies Out in Left Field: Defamatory Essays Presented to James D. McCawley on his 33rd or 34th Birthday. Linguistic Research, Edmonton, Alberta.