The eyes don't point: Understanding language universals through person marking in American Signed Language

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Abstract

In American Sign Language (ASL), pronouns are directed to locations in space associated with specific referents to refer to them (e.g., BOB on the left, BILL on the right). Despite the relative lack of ambiguity in identifying referents, Meier (1990) argues that second and third person cannot be distinguished in the ASL grammar, and instead proposes a single category ''non-first'' (an analysis adopted for many signed languages). If true, signed languages stand in stark contrast to spoken languages, for which three-person systems prevail. Alternatively, signed languages could mark a three-way distinction using eye gaze patterns to grammatically distinguish between second/third person referents (Berenz, 2002), just as eye gaze is known to mark verb agreement (Thompson et al., 2006). Using eye-tracking, we measured gaze occurring with pronouns, considering three different ways in which eye gaze could be used to mark pronouns. Results indicate that ASL does not use eye gaze to mark person, thus providing further support for a lack of a second/third person distinction. However, there is evidence for the use of eye gaze to mark locatives, which look like pronouns, but pick out a locative referent. We discuss possible reasons for the difference in person marking systems between signed and spoken languages, providing insight into what is universal across languages.
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1. Introduction

Research has highlighted the ways in which signed languages exhibit the same linguistic principles and conform to the same grammatical constraints as spoken languages (for reviews see Emmorey, 2002; Sandler and Lillo-Martin, 2006). For example, as in spoken languages, there is evidence from phenomena like ''tip of the fingers'' states (parallel to tip-of-the-tongue states), in which signers experience access to meaning but an inability to retrieve a sign's form, for separate levels of semantic and phonological representation (Thompson et al., 2005).

Nevertheless, some observed universal properties of spoken languages might not be fully mirrored by signed languages. One potential difference between signed and spoken languages is in how the category of 'person' is

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grammatically encoded. Spoken languages use a three-person distinction (first, second, and third) while two-person systems are found across signed languages (first and non-first person; see Meier, 1990; Engberg-Pedersen, 1993). This view, however, is not uncontroversial, and several researchers have claimed that three-person systems are also grammatically encoded in signed languages through the use of eye gaze (Bellugi and Fischer, 1972; Baker and Cokely, 1980; Berenz, 2002). Here we present experimental eye gaze data addressing possible differences in person marking between signed and spoken languages.

In Thompson et al. (2006) we examined eye gaze occurring with verbs in American Sign Language (ASL) and found that only verbs showing manual agreement morphology[1] (movement and hand orientation features) are marked with eye gaze agreement. Plain verbs, a subset of ASL verbs which do not mark agreement manually, are not produced with directed eye gaze to mark agreement. The co-occurrence of eye gaze and manual marking in verb agreement and the absence of both manual agreement and eye gaze agreement for plain verbs suggests an integral relationship between the two that may also be present during the production of pronouns: like agreeing verbs, pronouns in ASL are manually directed toward locations in space associated with referents. However, it is unknown if ASL pronouns additionally use eye gaze to mark locations associated with these referents.

The presence or absence of directed eye gaze to mark pronominal referents in a fashion similar to verb agreement marking is predicted by some analyses of ASL pronouns. One such analysis (Liddell, 2000a,b) claims that while the signs are linguistic, the directional component of pointing, both manual and non-manual (e.g., eye gaze), is gestural and *not* grammatical agreement. Under such an analysis, the eye gaze found occurring with verbs would also be considered gestural and is therefore predicted to pattern similarly for both verb agreement and pronouns, assuming that gestures are not constrained by grammatical category. Thus, whether or not pronominal referents are marked with eye gaze can offer clues about the relationship between pronouns and verbal agreement in ASL. These issues are outlined in the following paragraphs.

2. Background

2.1. Pronominal reference in ASL

Pronominal reference in ASL is accomplished through the use of locations (''referential loci'') in signing space. Discourse referents are associated with spatial locations, and signers can direct pronouns toward these locations in order to directly 'point out' specific referents. Thus, pronominal reference in ASL is indexical in that pronouns point to physically present referents (e.g., for the ASL sentence BOY LIKE INDEX-2nd person, ''The boy likes you'', the pronoun will be directed toward the physically present addressee), or to locations in space that have already been associated with non-present referents (see Fig. 1). The association between a locus and a referent remains throughout the discourse until changed by the signer.

While pointing behaviors in ASL serve to call attention to particular entities, this fact alone is not sufficient evidence for a linguistic category of pronouns, or evidence for how many formal person distinctions there are. In fact, while the referent of first, second, and third person can be clearly understood within the discourse for both present and non-present referents, some linguistic analyses suggest that there are no grammatical distinctions among first, second and third person, with only gestural pointing occurring (see Ahlgren, 1990 for Swedish Sign Language; Lillo-Martin and Klima, 1990; Todd, 2009 for ASL; see also McBurney, 2002 for arguments that sign language reference does not use grammatical person marking to identify referents in a discourse, but utilizes demonstratives instead). However, in the most widely accepted view to date, Meier (1990) argues that ASL distinguishes between first and non-first person in the grammar. His argument for a first versus non-first person distinction in ASL is based on two sets of facts. First, unlike first person, which is always located near the signer's body, second and third person forms do not have fixed locations. Second, while first person plural pronouns (WE and OUR; see Fig. 2) have a distinct phonological form, second and third person share the same form— they differ only in a way that cannot be phonologically specified, i.e., in the direction of pointing, which is controlled by the physical location of referents, or the established location of non-present referents. Lillo-Martin and Meier (2011:237) state that since 'position of the addressee' cannot be entered into the lexicon as part of the phonological form, second and third person forms cannot be distinguished in the grammar and therefore ''gesture must be invoked to explain the actual locations toward which directional signs point.'' In contrast, first person pronouns have only, at most, minimal gestural motivation for the place of articulation, i.e., first person plural pronouns are produced on the signer's chest even when they

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[1] The term manual agreement morphology here is used to refer to morphology for both ''agreeing verbs'' which mark agreement with the grammatical object and optionally with the subject and ''spatial verbs,'' which instead mark agreement with a locative. See Padden (1990) for more discussion on the distinction between these two verb types.