THE CORRELATION BETWEEN WORD CLASS AND MOUTH ACTIONS IN IRISH SIGN LANGUAGE (ISL)
Susanne Militzer, University of Cologne, Germany
susanne.militzer@uni-koeln.de

Mouth Actions Research

Increasing research on non-manual markers in different sign languages (e.g. Pfau & Quer 2007; Sutton-Spence & Woll 2006) has shown that apart from the hands, other articulators such as e.g. the body and different parts of the face are linguistically important for sign language communication. Actions of the mouth also fulfill certain linguistic functions of which many have not been clearly determined yet.

However, there is a general distinction between mouthings and mouth gestures in sign languages (e.g. Crasborn et al. 2008). Mouthings refer to mouth patterns that are supposedly derived from language contact between signed and spoken languages. Mouth gestures refer to sign language inherent mouth movements.

Example 1 (mouthing): manual sign LADDER accompanied by a mouthing ‘ladder’
Example 2 (mouth gesture): manual sign SHAPE-OF-ENGINE accompanied by an ‘open, teeth clenched’ mouth

Subjects and Methods

• Signs of Ireland Corpus from Centre for Deaf Studies, Trinity College Dublin
• Corpus of 40 Deaf signers (16=m, 24=f) of different ages (18-60+) from 5 locations in the Republic of Ireland (Dublin, Waterford, Wexford, Cork, Galway)
• Data was collected in 2004, annotated in 2004-7 by several deaf researchers
• Personal stories, flog stories, Volterra picture task elicited material

Data analysed for this study:
• personal stories of 12 signers (6=m, 6=f) from Dublin
• Additional ELAN annotations in the form of a word class tier were added
• Differentiation between mouthings and mouth gestures
• Data were evaluated for 4 word classes: nouns, verbs, adjectives, pronouns
• Verbs were distinguished into three sub-classes: plain, spatial and agreement verbs

Results

The unexpectedly high percentage of mouthings in spatial and agreement verbs might be due to the fact that many high frequency verbs (e.g. SEE, LOOK, GIVE) belong to this category and might no longer be perceived as complex.

Besides the morphological, syntactic and semantic criteria used for the distinction of their nominal character and their lower morphological complexity compared to verbs.

Availability of this tool is due to the non-concatenative morphology of signed languages.

Discussion

• Mouthings are the largest category in nouns, verbs and adjectives while pronouns and indexicals mostly do not take a mouth action at all.
• Mouth gestures occur most often with pronouns (39%) and frequently with verbs (30%), while they are rare in nouns.
• It could be expected that mouthings are most frequent in nouns and adjectives because of their nominal character and their lower morphological complexity compared to verbs.
• It was to be expected that mouth gestures are most frequent in verbs and pronouns because of their higher morphological complexity as compared to nouns and adjectives.
• Pronouns are especially interesting as frequencies for mouthings and mouth gestures are almost equal (50% mouthings, 51% mouth gestures) and they are mostly not combined with any mouth action at all (may be due to the fact that they do not need mouth patterns for disambiguation of homonyms as other word classes.
• If pronouns are combined with a mouth pattern it is often a spread pattern from an adjacent sign which establishes syntactic or prosodic linking.
• Looking at the different subclasses of ISL verbs, plain verbs most often occur with mouthings (70%) while spatial and agreement verbs occur slightly more frequently with mouth gestures than with mouthings (54% mouth gestures in spatial and 55% mouth gestures in agreement verbs).
• In the light of the hypothesis that mouthings are usually combined with morphologically less complex linguistic items while mouth gestures accompany the more complex ones, it could be expected:
  a. that plain verbs occur most often with mouthings as they do not take agreement
  b. that spatial and agreement verbs occur most often with mouth gestures as their agreement morphology is more complex

• The unexpectedly high percentage of mouthings in spatial and agreement verbs might be due to the fact that many high frequency verbs (e.g. SEE, LOOK, GIVE) belong to this category and might no longer be perceived as complex.
• Besides the morphological, syntactic and semantic criteria used for the distinction of word classes in spoken languages, sign languages seem to possess another tool available in visual-gestural languages only: mouth actions.
• Availability of this tool is due to the non-concatenative morphology of signed languages.
• Conclusion for contact linguistics: morphologically simpler items accommodate more mouth actions for verb subclasses.

Summary:

1. Of the four word classes investigated, three show preferences for co-occurrence with either mouthings or mouth gestures.
2. Morphological complexity of signs, i.e. more numerous agreement options of signs, increases the frequency of sign language inherent mouth patterns.
3. A subclassification of verbs into the traditionally established classes of plain, spatial and agreement verbs is also visible in the co-occurrence of mouth actions and manual signs.
4. Correlations between mouth actions and manual signs can be used as an additional indication of word class in ISL.

References


Acknowledgements

Data from the Signs of Ireland corpus are used with permission of the Centre for Deaf Studies, Trinity College Dublin. I am grateful to Laurenc Lomas’s support during my stay in 2004/2005 and to Kees Kooi’s constructive feedback and comments on the content of this presentation. Special thanks to all the signers whose data I used for this study: Caroline W., Eilish B., Fergus D., Fergus M., Kevin L., Laurence H., Marian H., Michelle M., Noeleen D., Peter M., Sarah-Jane M. and Sean H.