Two-handed gestures in Gesture and Sign
Comparing the silent gestures of hearing non-signers with the signs of sign language

Introduction

Two-handed signs are not randomly distributed across sign languages (SLs), but are triggered by certain semantic features, such as plurality and spatial extent of participants or components.  

In SSL BIG, the two hands represent the external boundaries of a volume. 

In SSL CHASE, the two hands represent the two participants of the action.

Are the silent gestures of hearing non-signers two-handed for the same concepts as in sign language? 

1. Can two-handed gestures predict two-handed signs in sign language? 

2. Can two-handed signs in sign language predict two-handed gestures?

Methodology

ECHO Swadesh list for SLs[3] as our target list of concepts.

Gesture data:
11 native speakers of English were individually videotaped as they described the concepts using silent gestures.

Sign language data:
Data from three SLs—American SL; Israeli SL Swedish SL—by consulting native signers and dictionaries.

Results

The silent gestures of hearing non-signers are not necessarily two-handed for the same concepts that trigger two-handed signs in our SLs.

The figure below plots all concepts in our target list.

◆ = one concept (245 total)

Concepts that are expressed with two-handed signs are not necessarily described by two-handed gestures.

Concepts frequently described with a two-handed gesture are usually associated with a two-handed sign in multiple SLs.

We see a unidirectional pattern

1. When a concept is frequently described with a two-handed gesture, it is likely that it is also two-handed in multiple SLs.

2. When a concept is denoted by a two-handed sign in multiple SLs, it could be described with one- or two-handed gestures.

Which concepts?
The figures below show a sample of concepts and how often they were described by a two-handed gesture/sign.

Conclusion

The motivations for having a two-handed gesture are a subset of the motivations for having a two-handed sign.

The semantic features associated with two-handed signs are not shared across gesture and sign, but are shared across SLs. Sign and gesture use the two hands iconically, but sign languages do so in a structured way.

References


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