Indicating verbs in British Sign Language favour motivated use of space

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Types/functions of space in sign languages: traditional view

Arbitrary space
- Grammatical/referential/syntactic space
- Locations set up arbitrarily in space for arguments
- E.g. pronouns, indicating/agreement verbs
- Where locations are set up does NOT matter

Motivated space
- Topographic/surrogate space
- Spatial relationships in real-world are represented in signing space
- E.g. classifier constructions/depicting verbs
- Where locations are set up DOES matter
Clear split?

• Some have argued for a clear distinction between arbitrary & motivated space (e.g., Poizner et al. 1987; Barberà 2014)
  – Dissociation between motivated and arbitrary space with indicating verbs e.g. language processing in healthy & impaired signing, suggested it is psychologically real (Emmorey & colleagues 1995, 1996)
• Many note it is difficult to distinguish between arbitrary and motivated space, they interact with each other, are tightly integrated, and/or cannot really be distinguished from each other (Emmorey & colleagues 1995, 1996, Engberg-Pedersen 1993, Liddell 2003, Perniss 2012, Taub 2001, Janzen 2004, Johnston 1991, van Hoek 1992, 1996)
• Much of the research studying these uses of space has focused on indicating verbs

Indicating verbs

• Verbs that move to/from or are directed to/from locations associated with arguments
• Also known as “agreement verbs”

BSL HELP “He helps her.”

BSL GIVE ‘She gives me’
Indicating verbs

- Often used to illustrate use of arbitrary space in sign languages
- Locations associated with Mary and John in this example are arbitrary

BSL HELP “She helps him.”

E.G. MARY PT→L JOHN PT→R HELPL→R

Indicating verbs: modification and constructed action

- Previously assumed that if an indicating verb can be modified, it must (i.e. obligatory “agreement”)
  - E.g. John established on left, GIVE must be directed to left
- But studies based on large datasets have shown such modification is clearly NOT obligatory (de Beuzeville et al., 2009 for Auslan; Fenlon, Schembri & Cormier, under review for BSL)
- Both Auslan and BSL studies additionally found that verbs modified for patient/object were more likely to be produced with constructed action than without
Our overall question

• How often do signers actually use space arbitrarily with indicating verbs in conversation?
• To study this, we have looked at indicating verbs in the BSL Corpus (bslcorpusproject.org)

E.G. MARY PT→L JOHN PT→R HELP_{L→R}

Use of space with BSL indicating verbs

• 1679 indicating verbs in BSL conversation
• Two questions:
  1. How often did these verbs co-occur with constructed action (overt/strong or subtle)?
  2. In 3rd to 3rd person contexts (e.g. ‘she helped him’), in what direction did the verb move?
1. Co-occurrence with constructed action

- We identified which indicating verbs co-occurred with constructed action (CA)
- CA included both strong/overt cases and more subtle cases (Cormier, Smith & Sevcikova, in press, Sign Language and Linguistics)
- Subtle CA = eyegaze to verb location (which has also been called "nonmanual agreement")
- Modified indicating verbs more likely to be produced with CA than without for patient arguments (p < 0.001): true for both overt and subtle CA and to the same degree
- So if eyegaze used as arbitrary grammatical agreement marker (e.g. Thompson, 2006; Neidle et al., 2000), why does it behave the same as CA in this way?

![Overt CA (head, face, eyegaze) Subtle CA (eyegaze to verb location)]

2. Direction of movement in 3\textsuperscript{rd} to 3\textsuperscript{rd} contexts

- In 238 indicating verb tokens in third person to third person contexts (e.g. ‘he gives her’), we looked at direction of modification

![Body-sagittal Body-diagonal Side-to-side](With arbitrary space, expect only side to side)
2. Direction of movement

- 40 tokens excluded because other movement types or ambiguous
- Only 9 tokens (4%) of side-to-side out of 238 double indicating verbs in 3rd to 3rd person context (e.g. 'he gives her')

Interim summary

- Preference for motivated space with indicating verbs in BSL conversation
- Arbitrary space: rare
Arbitrary space as grammaticalised?

• Assumptions in literature that indicating verbs in older sign languages like American Sign Language have fully developed agreement systems that use arbitrary space (e.g. Padden et al., 2010; Pfau & Steinbach, 2006; Mathur & Rathmann, 2012)
• For example, Padden, Meir, Aronoff & Sandler (2010):
  – Studied direction of indicating verbs in two emerging sign languages: Israeli SL and Al Sayyid Bedouin SL, using elicited data
  – Found that older signers in both sign languages strongly preferred to use indicating verbs to and from the body, compared to younger signers in both SLs who used some side-to-side modification
  – Argued for grammaticalisation pathway towards more arbitrary system in older sign languages like ASL that doesn’t rely on the body

Older ISL & ABSL signers’ preference
Younger ISL & ABSL signers’ preference

• But: BSL is one of the oldest known sign languages (older than ASL)
• So, if side-to-side movement is highly grammaticalised, why is it not more frequently used (as grammaticalisation theory suggests)?
• Perhaps the choice of direction depends on the genre/task
• BSL conversation data here vs. Padden et al. 2010 elicited data
• To test this: we used the Padden et al. materials to elicit indicating verbs in BSL in a small pilot study
Pilot study: indicating verb elicitation

- We elicited verbs (including some indicating verbs) using same materials and methods from Padden et al. (2010)
- Participants:
  - Deaf BSL signers, BSL as preferred language
  - 3 age 28-35; 1 age 63
  - All native signers or early learners (AoA 5 or younger)
- Most stimulus clips show two people on either side of screen with action happening between them

Pilot study: direction coding

- Direction of modification coded same as corpus study, same as Padden et al. (2010)

With thanks to Wendy Sandler for materials and info

Two “other” tokens excluded: one not a lexical sign, one was upwards
Pilot study: results

- Only a pilot: small numbers of signers and tokens! However:
  - As before, strong preference for verbs to move to and from the body
  - Only 3 tokens of side-to-side
  - Strong co-occurrence of constructed action in all cases
  - Preference for to-from body not dependent on task, seems to be preferred overall both in conversation and in elicitation even when showing side-to-side movement

Conclusions

- Clear preference for involvement of the body with indicating verbs in BSL, suggesting motivated space with these verbs
- Regardless of task/genre, arbitrary space in BSL is rare – both in conversation and elicited data
- Presence of constructed action, and use of body in 3rd to 3rd contexts, suggests signers tend to imagine themselves as referents associated with the arguments of the verb
- Fact that indicating verbs were modified to the same extent with both overt and subtle constructed action leads one to question the eyegaze as agreement analysis
- Despite the potential for arbitrary, grammaticalised use of space, it seems that signers prefer to use verbs to point to locations associated with real or imagined referents in BSL
- Calls into question claims about indicating verbs in other sign languages – more research is needed


Rethinking_constructed_action


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