

Canonical typology of person agreement: Evidence from signed languages

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Creating Infrastructure for Canonical Typology Conference
Guildford, Surrey, 10 January 2009



Overview

- Defining terms
- Background about signed languages
- Agreement in signed languages
- Support for indicating verb analysis: speech, gesture & sign
- The 'paradox' of sign language morphology?
- Conclusion

2

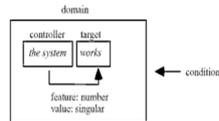
Agreement: a definition

- Corbett's (2006) working definition of agreement proposed by Susan Steele (1978: 610):
" ...*agreement* commonly refers to some systematic co-variance between a semantic or formal property of one element and a formal property of another."

3

Defining terms

- Corbett (2006: 4-5)
 - The element that controls the agreement is the *controller*; here, it is the NP 'the system'
 - The element whose form is determined by the controller is the *target*: here the verb 'works' shows agreement in number *features*
 - The *domain* of agreement is the clause, and there are no *conditions* for this agreement to take place
- Corbett (2006: 264) argued that so-called "agreement verbs" in signed languages do not show co-variance between controller and target



4

Background about signed languages

- Phonological parameters of a lexical sign in a signed language such as British Sign Language (BSL)
 - Handshape
 - Movement
 - Location
- Some signs have lexically fixed values for each parameter - e.g. BSL NAME, AFTERNOON, KNOW, LIKE, THINK, TRY
- Other signs are lexically specified for some but not all parameters

5

Directional signs

- Directional signs are lexically specified for some parameters (e.g. handshape) but not for location
- Many signs and constructions within signed languages use signing space for directionality
- A few examples:
 - Pronouns
 - e.g. BSL INDEX^{-x} 'him/her/it'
 - "Agreement" verbs

6

Agreement verbs

- Double agreement verbs
 - Move from locus associated with subject to locus associated with object
 - BSL GIVE^{1→x} 'I give him', HELP^{x→y} 'he helps her'
- Single agreement verbs
 - Move from neutral location (or location on body) toward locus in space associated with object
 - BSL SEE^{→x} '(she) sees him', TELL^{→x} '(he) tells her'
- Single/double agreement verbs
 - BSL ASK^{→y} '(she) asks him', ASK^{x→y} 'she asks him'

7

Person in signed languages

- 3-person system
 - Pronouns and/or agreement verbs marked for 1st, 2nd, 3rd person
 - E.g. Friedman (1975), Klima & Bellugi (1979), Padden (1983, 1988), Berenz (2002)
 - Problem: Pointing and gaze behaviours with 2nd and 3rd person seem no different from deictic pointing in co-speech gesture
- 2-person system
 - Pronouns and/or agreement verbs marked for first person and non-first person
 - Meier (1990) and others following
- No person: Locus agreement
 - Pronouns and/or agreement verbs marked not for person but for locus features
 - E.g. Lillo-Martin & Klima (1990), Janis (1995), Cormier, Wechsler & Meier (1999)
 - Addresses problem of multiple non-first person values
- No person and no agreement
 - Pronouns and/or indicating verbs do not mark agreement but signal reference tracking by pointing
 - Liddell (2000, 2003) and others following

8

Questions

- Does the use of agreement/indicating verbs in signed languages constitute "agreement" (Steele 1978; Corbett 2006)?
- If so, is it canonical agreement?
- If not, what is it??

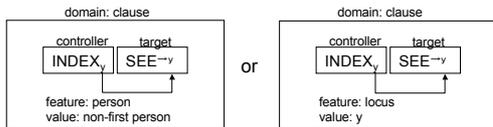
9

Is it agreement?

BSL:

INDEX_y, INDEX₁ SEE^{-y} 'I saw him'

BOY INDEX_y, INDEX₁ SEE^{-y} 'I saw the boy'



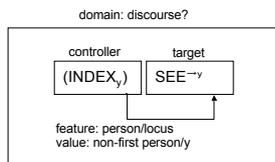
- Location associated with determiner INDEX_y as part of controller NP and directional marking on target verb SEE are associated → possible covariance between formal property of NP and target

10

Is it agreement? 2

Controller often not present:

BSL: INDEX₁ SEE^{-y} 'I saw (him)'



Potential similarity to agreement in pro-drop languages

11

Not agreement

- Liddell (2000, 2003, 2007): directionality of signed language indicating verbs may be controlled by real or imagined location of the referent, not formal or semantic properties of a controller noun phrase
 - (BSL) INDEX₁ ASK^{-y} MOTHER: the sign MOTHER produced on ipsilateral forehead but ASK may be directed to a contralateral location away from the signer ≠ formal property of controller NP
 - Location and height properties of the referent represented in different forms of American Sign Language (ASL) ASK^{-y} (e.g., a. versus b.) ≠ semantic property of controller NP
- Does not fit Steele's (1978)/Corbett's (2006) definition of agreement



12

Not agreement 2

- Consider another example (cf. Johnston, 1991; Liddell, 2007), produced in BSL:
- YESTERDAY PRO^{-y} LOOK-AT^x _{back-of-head} WHY
- "Why were you staring at the back of my head yesterday?"
- Here, the location associated with the potential controller NP and the verb LOOK-AT^x _{back-of-head} are clearly dissociated

13

Not agreement 3

- Aronoff, Meir & Sandler (2005) discussed interesting similarities between 'agreement' in indicating verbs, and literal alliterative agreement systems, such as those documented for Bainouk:
 - kata.ma-ŋɔ in-ka
 - river-DEF this-CV
- Like signed languages, the form of the 'agreement' morpheme is not fixed, but involves copying the first syllable, apparently addressing Liddell's 'instability' issue (i.e., that there are a very large number of possible directions in which indicating verbs may point)
- As Aronoff et al. (2005) recognised, however, this still differs from signed language indicating verbs because literal alliterative agreement involves co-variance between a target and a formal property of the controller NP (i.e., part of its phonological form)

14

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15

Indicating verbs analysis

- We support Liddell's (2000, 2003) analysis - rather than agreement, indicating verbs constitute a typologically unique/modality-specific gestural reference tracking system

16

Indicating verbs analysis 2

- Evidence from:
 - Similarities between indicating verbs and co-speech gesture
 - Conventionalisation
 - Variation
 - Interaction in syntax
 - Acquisition
 - Neuroscience
 - Indicating verbs as derivational morphology
 - Lack of true grammaticisation
 - Derivational, not inflectional morphology
 - Lack of inflection in SL in general
 - Effects of language experience

17

Pointing in sign and gesture varies cross-linguistically

- Meier (2002) pointed out that the set of indicating verbs differ cross-linguistically (e.g., EXPLAIN is an indicating verb in BSL but not in ASL, German Sign Language (DGS) uses a 'person agreement marker' but BSL does not)
- Liddell (2003) proposed that the set of indicating verbs and/or auxiliaries and their properties are listed in the mental lexicon, thus may vary from one signed language to the next
- Fusion of signs with pointing gesture is conventionalised, just as use of pointing gestures themselves may vary from culture to culture (e.g., Wilkins, 2003: Arrente use of specific pointing gesture meaning 'motion towards that location')



18

Indicating verbs and syntax

- Meier (2002) and Sandler & Lillo-Martin (2006) pointed out that the use of indicating verbs has syntactic consequences
- Null arguments and constituent order interact with the use of indicating verbs in ASL and Brazilian Sign Language (LSB): SVO vs. SOV vs. (S)V(O)
- In LSB, indicating verbs also interact with the order of negative sign (preverbal vs. clause final)
- Thus, these authors suggest that agreement verbs must be represented in the syntax

19

Grammar and gesture: Arrente

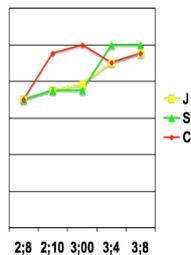
- But, research has begun to suggest interesting interactions between grammar and co-speech gesture
- Arrente (Wilkins, 2003: 195)
 - "...there is no obligatory marking in noun phrases to indicate singular or plural ... a phrase like *ame nhenhe* ('tree this') can mean either "this tree" or "these trees." However, the singular/nonsingular distinction is frequently made gesturally: when the one-finger point accompanies the phrase, the interpretation is "this tree", whereas when the wide hand point accompanies the phrase the interpretation is "these trees"..."



20

Acquisition evidence 1

- Meier (2002) claimed mastery of directionality of indicating verbs for present referents by age 3
- Mastery of this system for absent referents is later still
- This is similar to the acquisition of complex morphological systems (Slobin, 1985)
- But what about the development of the relationship between language and co-speech gesture?



21

Acquisition evidence 2

- Gullberg, de Bot & Volterra (2008) explained that development of adult speech-gesture system not yet fully described: more studies are needed, esp re: deictic gestures
- Mayberry & Nicoladis (2000) followed 5 French-English bilingual children from age 2;0 to 3;6 and found that the use of iconic and beat gestures correlated with speech development (more with dominant lg), whereas pointing gestures did not
- Coletta (2004), however, suggested that children aged 6 and over use more metaphoric, beat and abstract deictic gestures than younger children

22

Neurolinguistic evidence

- Meier (2002) listed a number of case studies of deaf aphasics that indicate more left-hemisphere involvement than right-hemisphere for indicating verbs, suggesting these verbs pattern like other linguistic abilities
- Nevertheless, some evidence for right-hemisphere involvement in comprehension (Poizner, Klima & Bellugi, 1987), and in syntactic processing (Neville et al., 1997) of ASL
- Capek et al. (2001) showed deaf native ASL signers sentences containing indicating verb errors. This ERP study found left hemispheric activity in these participants similar to that seen in hearing people reading or listening to syntactic violations in English.
- However, indicating verb errors in which the verb was directed to a new location, not previously associated with a referent, elicited bilateral responses
- Neurolinguistic evidence alone, however, cannot lead to definitive conclusions about the nature of the directionality in indicating verbs (cf. Van Lancker Sirdis, 2006)

23

Indicating verbs and the emergence of signed language grammars

- Indicating verbs much more frequent and systematic in signed language creoles than pidgins, as seen in first and second cohort of Nicaraguan Sign Language users (Senghas & Coppola, 2001)
- Reports of language change in younger vs. older signers of established signed languages re: single and double agreement (Engberg-Pedersen, 1993)
- Apparently rare in Al-Sayid Bedouin Sign Language (Sandler & Lillo-Martin, 2006)

24

Lexicalisation of pointing gesture & verb signs

- Indicating verbs develop as pointing gestures, are incorporated into verb signs as part of an emerging linguistic system, and may continue to develop through analogic processes of language change
- Increasing conventionalisation provides evidence of an emergent subsystem of the grammar, but not necessarily an agreement system
- Agreement systems generally emerge by means of a separate but related process: grammaticalisation (Givón, 1976; Corbett, 2006).
 - Full pronouns > clitics > inflectional morphology
- No evidence that this grammaticalisation pathway followed in signed languages (Liddell, 2003): many forms clearly not the result of the fusion of pronoun and a verb (e.g., BSL ASK^{TY} and REMIND^{TY})
- Pronouns and indicating verbs instead involve similar uses of gestural space, and not clear that there are intermediate steps as there tend to be with processes of grammaticalisation

25

Indicating verbs as derivational morphology

- Liddell (2003) suggested that indicating verbs form a derivational system, rather than an inflectional one marking person agreement
- He proposes a cognitive/construction grammar based approach in which varying indicating verb forms are listed in the mental lexicon (cf., rule-based analyses in Janis, 1992; Meir, 1998; Rathmann & Mathur 2002; Mathur & Rathmann, in press)
- Yet, indicating verbs form the best candidate for an inflectional system in signed language grammars (Engberg-Pedersen, 1993), so what are the implications for models of signed language morphology?
- Liddell (2003) and Bergman & Dahl (1994) claimed that ASL and Swedish Sign Language are basically inflectionless languages with well-developed iconic derivational morphology

26

Signed languages as inflectionless?

- An overview of processes treated as inflections in the signed language literature:
 - Marking number in nouns: optional, phonologically conditioned reduplication process (e.g., Pfau & Steinbach, 2006)
 - Multiple and exhaustive marking in verbs: optional form of reduplication, not necessarily agreement with controller NP in number (e.g., Liddell, 2003)
 - Aspect marking in verbs: optional, iconically-motivated reduplication (e.g., Rathmann, 2005); ideophonic? (Bergman & Dahl, 1994)
- Not much evidence here of highly-grammaticalised, obligatory inflectional morphology in signed languages (cf. Aronoff, Meir & Sandler, 2005)

27

What paradox?

- Morphology: 'the paradox of signed language morphology' (Aronoff, Meir & Sandler, 2005): sign languages are young languages with variable patterns of transmission, and exhibit certain common grammatical characteristics of 'young creole languages' and yet, they also show morphology that is reminiscent of very heavily inflecting languages, with verb agreement and classifier constructions, for example
- Some issues:
 - Morphosyntactic characteristics of creole languages is in dispute (McWhorter, 1998; DeGraff, 2003), but claim is that they show little or no inflection, and only semantically regular derivation
 - Inflection vs derivation is problematic (e.g., Spencer, 2006)
- But revised view of signed language morphology as having minimal inflection but complex semantically regular derivational morphology may bring them more into line with what is known about creolisation and grammaticalisation processes generally

28

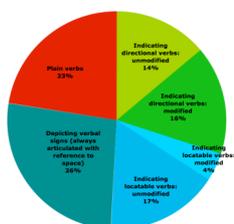
Indicating verbs and (socio-)linguistic variation

- The sociolinguistic situation of signing communities mean that there is a lot of apparent idiosyncratic variation with respect to all aspects of language use, including morphology - as young languages, many of their morphosyntactic properties are not highly grammaticalised
- Some of the variation correlates with language-external factors, such whether a signer is deaf or hearing, is a native or non-native signer etc (Lucas & Valli, 1992).
- But Engberg-Pedersen (1993) proposed that these modifications also interact with language-internal factors such as the frequency of a lexical unit

29

Indicating verbs in Auslan study

- Research from Australian Sign Language (Auslan) Corpus project on 2,448 indicating verb tokens from 50 narratives supports this claim: different verbs are modified at different rates, with high frequency forms (LOOK, SAY, COME, ARRIVE, GO) showing spatial modification significantly more often (de Beuzeville, Johnston & Schembri, submitted)
- Corpus-based approaches will assist us in identifying these language-internal and external influences and thus enable us to more accurately characterise signed language grammars



30

Contrasting view 1

- Zero agreement morpheme analysis
 - Rathmann & Mathur (2002) and Mathur & Rathmann (in press) propose that non-first person agreement verbs include a zero agreement marking morpheme, which is matched with a deictic gesture within an interface between spatio-temporal conceptual structure and the articulatory-phonetic system, following a model proposed by Jackendoff (2002)
 - They conclude that signed language agreement is non-canonical - in the sense of Corbett's (2006) notion of canonical agreement - but is still agreement

31

Contrasting view 2

- Zero agreement morpheme analysis
 - But - work on speech and co-speech gesture by Kita & Ozyurek (2002) suggested direct interactions between gestural and linguistic systems, and others have argued for a unified account of the speech-gesture system (McNeill, 1992)
 - Zero morpheme analysis motivated by theory-internal considerations, such as autonomy of language from other cognitive systems?
 - Other researchers also have accepted a role for gesture, while maintaining an agreement analysis (e.g., Sandler & Lillo-Martin, 2006)
 - Not clear how to test such claims, as behavioural studies cannot distinguish between these accounts and indicating verb analysis

32

Summary

- By and large, the use of indicating verbs in signed languages does not constitute agreement in the sense of Steele (1978)/Corbett (2006)
- Even when it could be argued that there is covariance between formal property of NP and target, still...

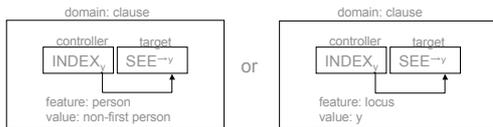
33

Is it agreement? (revisited)

BSL:

INDEX₁, INDEX₁ SEE^{-y} 'I saw him'

BOY INDEX_y, INDEX₁ SEE^{-y} 'I saw the boy'



- Location associated with determiner INDEX_x as part of controller NP and directional marking on target verb SEE are associated → possible covariance between formal property of NP and target
- ... need to show that this choice of location is not controlled by imagined location of referent and that it is distinct from abstract uses of deictic c0₃₄ speech gesture

Conclusion

- We suggest that the indicating verb as gestural reference tracking analysis has the following strengths:
 - it is part of a unified account of a range of various spatial/directional phenomena in signed languages (Liddell, 2003)
 - it draws on increasing evidence of a speech-gesture system (McNeill, 1992; Kendon, 2004)
 - it suggests an alternative analysis of signed languages as young languages that, like the spoken language creole prototype, lack extensive inflection but have a rich system of iconic derivational morphology (cf. McWhorter, 1998; Aronoff, Meir & Sandler, 2005)

35

Future research

- First person
 - Meier (1990) argues - persuasively - for a first-person versus non-first-person distinction in ASL:
 - fixed form for first vs. variable pointing/gaze for non-first
 - idiosyncratic forms for first person indicating verbs
 - Centre of chest (or other location on signer's body) could be formal property of first person
 - However, research is needed to show how the use of a fixed first-person versus variable non-first person differs from pointing gestures in which there appear to be similar fixed versus non-fixed forms
- Number/plurality
 - Expressions of numerosity in the verbal and pronominal systems of ASL and BSL affect the interaction with pointing (Meier 2002; Cormier 2002, 2007); this needs further investigation

36

Thank you!

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This work is supported by the Economic and Social Research Council of Great Britain (Grant RES-620-28-6001), Deafness, Cognition and Language Research Centre (DCAL)

37

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38

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39

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40

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41

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42