Pointing and Shaking: On the Grammaticalization of Gestures
Roland Pfau

Introduction

• Just like spoken languages, sign languages (SLs) are subject to diachronic change due to external (e.g., borrowing and standardization) and internal factors (e.g., Battison 1978; Brentari 2001; Schermer 2003).
• Recent studies on grammaticalization in SLs have shown that, for the most part, the attested grammaticalization pathways are modality-independent (Pfau & Steinbach 2006, 2011; Janzen 2012).

Overview

1. Grammaticalization in sign languages
   1.1 Methodological challenges
   1.2 Grammaticalization of lexical elements
   1.3 Grammaticalization of gestures
2. Grammaticalization of pointing
   2.1 Pointing as co-speech gesture
   2.2 Pointing signs in sign languages
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3. Grammaticalization of headshake
   3.1 Headshake as co-speech gesture
   3.2 Negative headshakes in sign languages
4. Conclusion

Methodological Challenge

• Lack of a written form makes the identification and comparison of earlier and later forms impossible (NAD-movie: George W. Veditz, 1913)
• Internal reconstruction (IR): “the exploitation of patterns in the synchronic grammar of a single language […] to recover information about its prehistory” (Ringe 2003: 244)
• IR is generally a less reliable method
Methodological Challenge
• Given that
  (i) the lexical and the grammatical item are phonologically similar,
  (ii) grammaticalization is (usually) unidirectional, and
  (iii) we do know about common grammaticalization paths from the study of languages for which written records do exist,
we may make inferences about grammaticalization on the basis of synchronic data.

Grammaticalization in SLs
• In American SL (ASL), the verb GO-TO (1a) developed into a future tense marker (1b)
  (Janzen & Shaffer 2002: 203; Neidle et al. 2000: 79)

  (1) a. TWO, THREE, PREVIOUS, E.M. GALLAUDET [ASL]
     GO-TO TOWN, PHILADELPHIA
     (E.M. Gallaudet left went to Philadelphia.)
  b. JOHN FUTURE, BUY, HOUSE
     “John will buy a house.”

• In German SL (DGS), the noun REASON (2a) developed into a cause-complementizer (2b).

  (2) a. top seg
  REASON, UNDERSTAND
  “I don’t understand the reason.”
  INDEF, SAD, REASON, POSS, DOG, DIE
  “I’m sad because my dog died.”

  • The grammaticalization paths in (1) and (2) are also common in spoken languages
  (Heine & Kuteva 2002).

Grammaticalization of Gestures
• SLs have the unique possibility of grammaticalizing manual and non-manual gestures.
• Wilcox (2004, 2007) distinguishes two grammaticalization paths from gesture to sign:
  (i) the gesture develops into a lexical element, which may then further develop into a functional element.
    – gesture ‘strong’ > STRONG > modal CAN [ASL]
    – gesture ‘owe’ > OWE > modal verb MUST [ASL]
    – gesture ‘wait a second’ > SLOW > negative completive NOT-YET [Jordanian SL]
  (ii) grammaticalization proceeds directly from a gestural source to a functional element, skipping the intermediate lexicalization stage.
    – gesture > classifier handshapes (that combine with verbs of motion and location)
    – gesture > question particle / discourse marker
    – gesture > pronoun

• Other pathways that have been described include (cf. Pfau & Steinbach (2006) for overview):
  • from noun/adjective to modal verb in ASL and Catalan SL (LSC);
  • from (ad)verb to completive/perfective aspect marker in ASL, Italian SL (LIS), and Israeli SL;
  • from noun to pronoun in Israeli SL;
  • from adjective/verb to intensifier in ASL, DGS, and Adamorobe SL (Ghana).
Grammaticalization of Discourse Marker

• Use of discourse marker PALM-UP has been described for Danish SL, ASL, New Zealand SL, and SL of the Netherlands (NGT)
  • Functions of PALM-UP
    - interactive (backchannel, turn signal)
    - cohesive (e.g. conjunction)
    - modality (e.g. evaluative & epistemic stance)
    - question particle


Connective Function (NGT)

SURELY INDEXarc LOOK PALM-UP YET RESPECT INDEXarc
“Surely they look, but they have respect.”

Pointing as Co-speech Gesture

• Pointing is “a communicative body movement that projects a vector from a body part. This vector indicates a certain direction, location, or object.” (Kita 2003: 1)
• Pointing with a locative function (“there”) and a nominal function (“that”, “s/he”)
• Pointing is a universal human behavior; it can be considered a foundational building block of human communication.

Pointing and Acquisition

• Pointing to nearby objects emerges at an average age of 11 months (Butterworth & Morissette 1996).
• Correlation between the onset of pointing and the age at which infants produce their first words (Harris et al. 1995).
• The combination of single-word utterances and pointing gestures may function as a transitional bridge between one- and two-word speech (Goldin-Meadow & Butcher 2003).
• Role of pointing in language evolution (Hewes 1981)
Variation: Handshape & Orientation
(Kendon & Versante 2003; Kendon 2004)

- Use of different handshapes appears to be context-dependent
- A 1-hand is likely to be used when “a speaker singles out an object which is to be attended to as a particular individual object”
- B-hand when “the object being indicated is not itself the primary focus or topic of the discourse but is something that is linked to the topic”
- Use of A-hand can be explained at least partially by anatomical factors

Pointing in Sign Language

- Grammatical uses of pointing (INDEX₁ / IXᵢ)
  - localization of non-present referents (R-locus)
  - locative uses
  - pronominal uses
  - different types of determiners (e.g. demonstrative)
- Lexical uses of pointing
  - body parts (Pyers 2006)
  - time concepts
- Engberg-Pedersen estimates that “on the average, almost every fourth sign in signed discourse is a pointing sign” (2003: 271).

Localization & Pronominalization

• INDEX₁ BROTHER IX₃a
• SOON IX₃a PARIS GO-TO₃b

Locative Use of INDEX

• SCHOOL IX₃b, TOMORROW EVENING MEETING IX₃b
• IX₁ BE-PRESENT IX₃b

Phonological Variation
(Pfau 2011)

- Movement: direction, manner, repetition
- Handshape: 1-, B-, A-, and L-hand
- Orientation: palm vertical vs. palm down (Engberg-Pedersen 2003; de Vos 2008)

• Non-manuals: eye-gaze

localative nominal

(locational & pronominal use)

(locational & pronominal use)
Syntactic Distribution

- Language-specific constraints with respect to the distribution of different pointing signs.
- Subject pronoun copy in ASL (Padden 1988)
- DP-internal INDEXes in ASL (Bahan et al. 1995):
  - pre-nominal: definite determiner
  - post-nominal: locative adverbial
  - combination is possible:
    \[[X MAN IX]\]_or (cf. French *cet homme-lâ*)
- DP-internal INDEXes: distributional differences in NGT and LIS (Brunelli 2011)

Semantic Interpretation

- Specific handshapes for different functions (possessive, reflexive) in some SLs
- Use of different planes in signing space for marking specificity in Catalan SL (Barberà 2012)
  - lower plane: definite DPs
  - upper plane: non-specific indefinites

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Suggested Grammaticalization Path

(Pfau & Steinbach 2006, 2011; Pfau 2011)

- All steps, except ① and ⑤, are well-attested in spoken languages (Heine & Kuteva 2002)

From Locative to Demonstrative (②)

- Locative function appears to be most basic; even homesigners make frequent use of locative points
- Common development in spoken languages; proximal/distal distinction

From Demonstrative to Pronoun (③)

- Mostly for 3rd person pronouns; different paths for 1st and 2nd person pronouns (Diessel 1999; Heine & Song 2011)
- Alternatively, both the demonstrative and the locative developed from the pointing gesture (Turkish)
From Pronoun to Agreement (5)

- The same locations that are crucial in indexical signs also determine the beginning/end point of some verbs → subject/object agreement
- Agreement markers derive from cliticized pronouns (Keller 1998; Wilbur 1999)

<table>
<thead>
<tr>
<th>PRONOUN</th>
<th>AGREEMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st singular</td>
<td>b</td>
</tr>
<tr>
<td>2nd singular</td>
<td>ʔi</td>
</tr>
<tr>
<td>1st plural</td>
<td>biye</td>
</tr>
<tr>
<td>2nd plural</td>
<td>ta</td>
</tr>
</tbody>
</table>

(Buryat; Mongolia)

Interrupted Path: Kata Kolok

- In Kata Kolok, a village SL of Bali, pointing signs are never used for non-present referents → absolute frame of reference (de Vos 2012)
- Pointing only to real-world locations

Evidence from Nicaraguan SL

(Coppola & Senghas 2010; Senghas & Coppola 2011)

- S&C compared use of pointing signs by home-signers and signers from different cohorts.
- The use of locative points (‘there’) remained fairly constant across cohorts.
- In contrast, the use of nominal points (‘that, s/he’) increases dramatically across cohorts.
- Nominal points frequently replace nouns, i.e. they “are increasingly being used in a pronoun-like way”.

Evidence from Nicaraguan SL

- Within the group of nominal points, only the use of points that combine with verbs (e.g. POINT CLIMB) increased across cohorts.
- Use of points that combine with nouns (e.g. POINT BIRD), i.e. demonstrative use of points, remained constant.
- Demonstrative use of nominal points is the more basic one, available to signers at an earlier stage in the development of the language.
Developments across Cohorts
Pronominal Use of Points

Origin of Headshake
• Headnod as “obvious visual representation of bowing before the demand” symbolizes obedience (Jakobson 1972: 92)
• Semantically opposite sign requires contrasting head motion → headshake (or backwards head tilt)
• Alternative explanation: rooted in infants’ experience during (breast)feeding → turning head away from food

Gestural Uses of Headshake
(McClave 2000, 2001; Kendon 2002)
• Headshakes as negative replies or accompanying negative statements

Gestural Uses of Headshake
(McClave 2000, 2001; Kendon 2002)
• Headshakes signalling uncertainty

Gestural Uses of Headshake
(McClave 2000, 2001; Kendon 2002)
• Headshakes signalling intensification
Grammaticalization of Gestures

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Gestural Headshakes in SLs

- Headshakes are used for similar functions in SLs; e.g. New Zealand SL (a) and Norwegian SL (b) (Zeshan 2004)

Negative Headshakes

- However, when used as a marker of negation, headshakes appear to be tightly linked to the syntactic structure of the utterance they accompany.
- In addition, the use and distribution (scope) of the headshake is subject to language-specific constraints (Pfau 2002, 2008).

A Typological Division

- In all SLs studied to date, negation can be expressed by a manual sign and/or a non-manual marker, the headshake (Zeshan 2004, 2006a).
- In some SLs, the manual element is obligatory, i.e. a proposition cannot be negated by headshake alone \( \rightarrow \) manual dominant SLs
- In these SLs, the headshake usually only accompanies the manual negator.

Manual Dominant Sign Languages

- E.g. Italian SL (1), Hong Kong SL (2), Turkish SL \( \rightarrow \) note the ungrammaticality of b-examples

Non-manual Dominant SLs

- In other SLs, the use of a manual negator is optional; sentences are commonly negated by headshake only \( \rightarrow \) non-manual dominant SLs
- E.g. ASL, NGT, DGS, Indo-Pakistani SL; cf. the minimal pair from Flemish SL

Turkish Sign Language (TİD)
New Zealand Sign Language

(Intra-modal Variation)

(Pfau 2002; Pfau & Quer 2002, 2007)

• Comparison of ASL, DGS, and LSC
• Scope of headshake in the presence of the manual negator NOT (ASL: Neidle et al. 2000)

- ASL
  a. JOHN NOT BUY HOUSE
  b. SANTI MEAT EAT NOT
  c. * MOTHER FLOWER BUY NOT

- LSC
  a. POSS; MOTHER FLOWER BUY

- DGS
  a. POSS; MOTHER FLOWER BUY

Intra-modal Variation

• Scope of headshake in the absence of NOT; headshake must spread onto object in ASL (b)

- ASL
  a. * JOHN BUY HOUSE
  b. JOHN BUY HOUSE
  c. SANTI MEAT EAT
  d. POSS; FRIEND MEAT EAT

- DGS
  a. POSS; MOTHER FLOWER BUY

Spreading of Headshake

- DGS
  a. POSS; MOTHER FLOWER BUY

- LSC
  a. POSS; MOTHER FLOWER BUY

- ASL
  a. * JOHN BUY HOUSE

Culture-specificity

• The headshake is a culture-specific gesture.
• Not surprisingly, in areas where head tilt is used as co-speech gesture, the same gesture is grammaticalized in the SL – in addition to the headshake; e.g. TID and Greek SL (Antzakas 2006).

- TID
  a. INDEX; NONE LUCK BECOME NOT
  b. INDEX; AGAIN GO WANT NOT

- Greek SL
  a. INDEX; NONE LUCK BECOME NOT
  b. INDEX; AGAIN GO WANT NOT
Summary

- Language-specific rules determine use and scope of the negative non-manual marker.
- Scope of the non-manual is constrained by syntactic structure.
- Analysis (DGS/LSC) (Pfau 2002; Pfau & Quer 2002):
  - these SLs have split negation: combination of (optional) particle and (non-manual) affix;
  - the two negative elements may occupy different positions within a negative phrase;
  - spreading targets c-command domain.

Processing Evidence

- Affective/gestural non-manuals are processed differently from linguistic non-manuals → right hemisphere (Corina 1989)
- Comprehension and production of the two types of non-manuals can be selectively impaired (Poizner & Kegl 1992)
- Signers with brain lesion were not able to understand British SL sentences with only non-manual negation (Atkinson et al. 2004).

Conclusions

- Grammaticalization is an important aspect of diachronic change in SLs.
- Most of the attested pathways from lexical to grammatical element are modality-independent.
- In addition, SLs have the potential of grammaticalizing manual and non-manual co-speech gestures.
- Grammaticalized gestures are integrated into the linguistic structure of the respective SL.

Thank you for your attention!

For a handout (incl. references) please contact me: r.pfau@uva.nl
References


Harris, Margaret, Fiona Barlow-Brown & Joan Chasin. 1995. The emergence of referential understanding: pointing and the comprehension of object names. First Language 15, 19-34.


