

Workshop “Cross-linguistic investigations of sign languages: can similarities and differences be detected without appropriate tools for representing and analyzing signed texts?”

Elena Pizzuto - Introductory Notes: Some “points” and illustrative examples

The main issue we want to address: do we have appropriate tools for conducting accurate cross-linguistic investigations of signed languages, notably of signed texts?

The main problem we encounter:

The notation systems currently available are useful for transcribing and analysing individual manual signs but, paradoxically, cannot be easily employed for representing longer sequences of signs occurring in spontaneous conversation and discourse.

Most research on signed texts, and on morphological and syntactic patterns that are identifiable only in context, is conducted using what are called “sign glosses“: labels for the signs’ meanings in, for example, Italian or English. This practice is clearly detrimental for the advancement of crosslinguistic research on signed languages.

In this workshop we try to:

- A) Clarify the problems posed by the use of glosses (of any kind), reflecting upon the differences between glossing as it is done in spoken vs. signed language research.
- B) Evaluate from a cross-linguistic perspective some of the major tools currently used for representing and analysing signed texts.

2) An utterance with the same meaning produced in spoken Italian, German, and English, represented only via the following English gloss-notation:

Italian: DET wolf eat (3SG) DET lamb

German: DET wolf eat (3SG) DET lamb

English: DET wolf eat (3SG) DET lamb

2a) OR via much more detailed morphological glosses, as:

Italian: ART&DEF&MASC&SG N&MASC&SG V&PRES-3SG
ART&DEF&MASC&SG N&MASC&SG

German ART&DEF&MASC&SG&NOM N&MASC&SG V&PRES-3SG
ART&DEF&MASC&SG&ACC N&NEU&SG

English: ART&DEF N&SG V&PRES-3SG ART&DEF N&SG

Questions:

- Can we reconstruct from this detailed glossing the sound sequences of the original utterance in each language? Can we have a somewhat more precise idea of the lexical and morphological similarities and differences?
- Can we independently support the appropriateness of the morphological analysis performed, or compare it with different morphological segmentation and analyses, i.e. can we for example check the analysis done against an independently provided written notation, of (almost) any kind?

2b) An orthographic transcription of the utterances along with morphological glossing:

Italian: Il lupo mangia l'agnello
ART&DEF&MASC&SG N-MASC&SG V&PRES-3SG
ART&DEF&MASC&SG N-MASC&SG

German: Der Wolf frisst das Lamm
ART&DEF&MASC&SG&NOM N&MASC&SG V&PRES-3SG
ART&DEF&MASC&SG&ACC N&NEU&SG

English: The wolf eats the lamb
ART&DEF N&SG V&PRES-3SG ART&DEF N&SG

3) Can multimedia technologies help? Yes, but still:

Signa (sicut verba) volant, scripta manent

(Signs, like spoken words, fly away, written words remain)

B) Trying to evaluate from a cross-linguistic perspective some of the major tools currently used for representing and analysing signed texts.

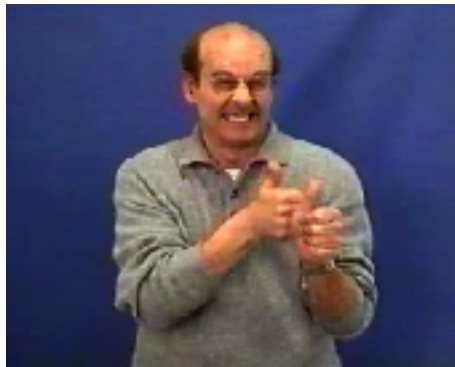
Proposing an apparently simple, extremely circumscribed two-steps task:

- 1) Take a single Italian Sign Language (LIS) utterance (elicited via a picture) exhibiting morphosyntactic features that are common across signed languages, write/transcribe/notate it with different writing/notation systems, and explore empirically the question: how effectively each of the proposed/available systems can represent the most salient linguistic features of this utterance?
- 2) Collect utterances of the same meaning, elicited via the same picture used for the LIS utterance, produced in different signed languages (e.g. American, German, Nicaraguan Sign Languages), write/transcribe/notate them with different writing/notation systems, and examine how effectively each of the proposed/available systems can capture relevant crosslinguistic similarities and differences

The stimulus picture used to elicit the target utterance in LIS and other signed languages:



The LIS utterance, illustrated here via selected, sequentially arranged stills from the video data:

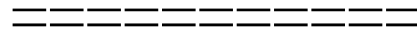


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The IRA (Issues Raising Approach) applied to different written representations of a single LIS utterance

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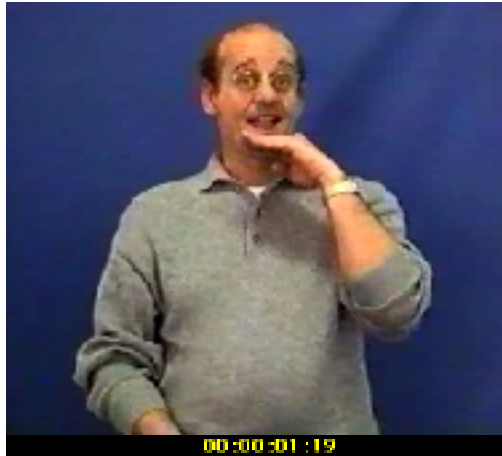
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Box 517, La Jolla, CA, 92038-0517, USA**



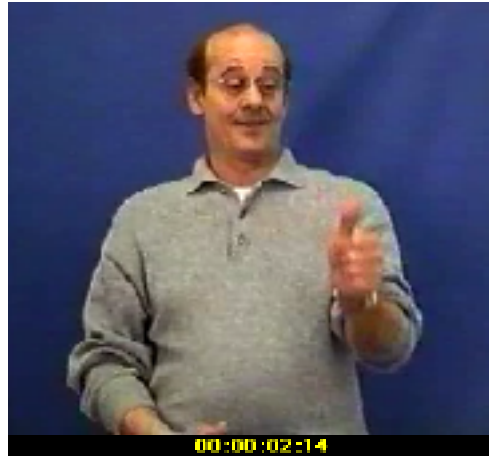
***Paola Pietrandrea (University of Rome 3),
*Tommaso Russo (University of Rome “La Sapienza”)**

Illustrative examples

1) An English glosses (+ selected stills) representation



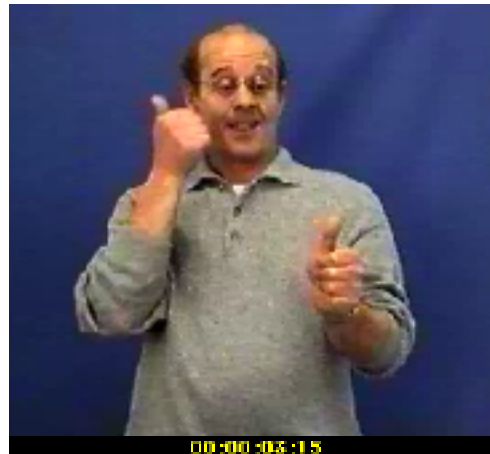
x DOG



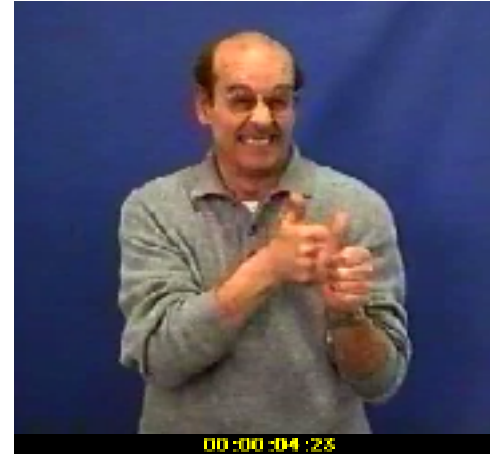
3a CL-S



x CAT
3a CL-S



3b CL-S
3a CL-S



3b CHASE 3a

2) A SignFont (+ selected stills) representation



⊖

Πἰθ=ḡχἡ



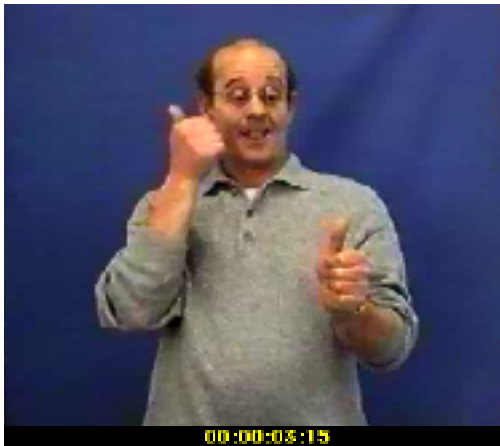
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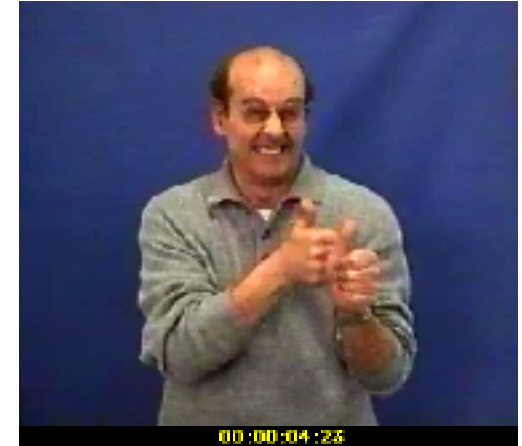
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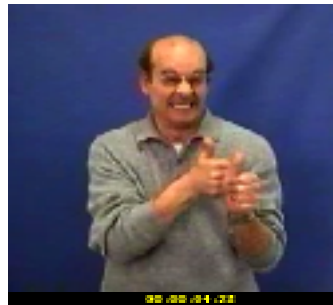
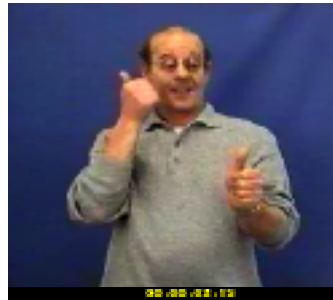
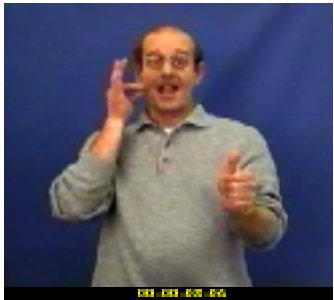
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3) A Sign Writing (+ selected stills) representation: *Valerie Sutton's version



4) A Sign Writing (+ selected stills) representation: Paolo Rossini & Barbara Pennacchi's version



5) The English glosses, Sign Font, and Sign Writing representations (- stills)

(Gloss)

LH xDOG 3aCL-S-----||
 RH xCAT 3bCL-S
 LH & RH 3bCHASE3a

(Sign Font)

⊖ Π₁⊖=∩X^u Λ₁σ₆τ₃∩ ∨_oJ∩X Λ₁σ₆τ₃∩ ⊖ ⊖
 Λ₁⊖Λ₁σ₆τ₃∩∩=∩ ⊖ ⊖ ⊖

(SignWrite)



Selected References

- Brugman, H., (1998). *Media Tagger 2.01*. Nijmegen, NL: Max Planck Institute for Psycholinguistics. (email: Hennie.Brugman@mpi.nl).
- Hutchins, S, Poizner, H. McIntire, M., Paul, F., Newkirk, D. (1990). Implications for sign research of a computerized written form of ASL. In W. H. Edmondson & F. Karlsson (eds.) *SLR '87. Papers from the Fourth International Symposium on Sign Language Research, Lappeenranta, Finland, July 15-19, 1987*. Hamburg: Signum-Verlag, 255-268.
- Jouison, P. (1990). Analysis and linear transcription of signed language discourse. In S. Prillwitz, T. Von Haber (eds.) *Current Trends in European Sign language Research*. Hamburg: Signum Press.
- Jouison, P. (1995). *Ecrits sur la Langue des Signes Graççaise*. Paris: L'Harmattan.
- Newkirk, D. & Emerson & Stern Associates (1987). *Architect: Final version. SignFont Handbook*. La Jolla, CA: Emerson & Stern Associates.
- Pizzuto, E., Corazza, S. (1996). Noun morphology in Italian Sign language (LIS). *Lingua*, 98, 169-196.
- Pizzuto, E., Volterra, V. (2000). Iconicity and transparency in sign languages: a cross-linguistic cross-cultural view. In K. Emmorey, H. Lane (a cura di), *The Signs of Language Revisited: An Anthology in Honor of Ursula Bellugi and Edward Klima*. Hillsdale, NJ: Lawrence Erlbaum, 261-286.
- Prillwitz, S, Leven, R. Zienert, H., Hanke, T., Henning, J. (1990). *HamNoSys. Hamburg Notation System for sign languages. An introductory guide*. Hamburg: Signum-Verlag.
- Prillwitz, S., Zienert, H. (1990). Hamburg Notation System for sign language. Development of a sign writing with computer application. In Siegmund Prillwitz and Thomas Vollhaber (eds.), *Current trends in European sign language research*. Hamburg: Signum-Verlag, 355-379.
- Slobin, D., Hoiting, N., Anthony, M., Biederman, Y., Kuntze, M., Lindert, R., Pyers, J., Thumann, H., Weinberg, A. (1999). *Sign Language Transcription at the morphological level: the Berkeley Transcription System (BTS)*. Report to the European Science Foundation, London Intersign Workshop on Acquisition (4-6 September, 1999).
- Sutton, V. (1999). *Lessons in Sign Writing - Textbook and handbook* (2nd Ed.). La Jolla, CA; The Deaf Action Committee for Sign Writing. (e-mail: DAC@SignWriting.org)
- Sutton, V. (2000). *Italian Signs Written in Sign Writing*. <http://www.signwriting.org/italy/italy001.html>. (e-mail: DAC@SignWriting.org)
- Sutton, V. (2000). *A Sentence Written in Italian Signs*. <http://www.signwriting.org/italy/italy002.html>. (e-mail: DAC@SignWriting.org)
- Talmy, L. (1985) Lexicalization patterns: Semantic Structure in lexical forms. In T. Shopen (ed.), *Language typology and semantic description* (Vol. 3: 36-149). Cambridge, UK: CUP.