Inter- and intra-speaker variation of gestural density

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Research question

• Multimodal analysis of typological differences w.r.t. expression of static location (native & learner data)
• Today's focus = lexical and gestural density in Dutch (L1 & L2)
• Research question:
  How intensively are the linguistic and gestural tools mobilised to express a given spatial configuration?
Outline

• Data & method
• Summary of previous analysis
  – verbal encoding
  – gestural encoding
• Gestural and verbal density
  – set-up
  – results
• Discussion

Data & method

– guided elicited descriptions based on 5 pictures from a children's book
– analysis of locative verbs, also in relation to the construction used, discourse factors
– inter-Germanic differences (En./Du./Sw.); French-Gmc; co-verbal gestures L1 & L2
Data & method

• SUBJECTS:
  – 12 subjects per language;
  – 22 for Dutch L2 (3 proficiency levels)
  – gesture data: 11 Du-L1; 9 Du-L2 (3 per level)

• Video-taped, transcribed & coded (ELAN; quantitative analysis in Excel)

• Data set largely restricted to locative events (sentences describing the location of entities)

Data & method

• textually, linguistically and gesturally annotated:
  – textual: locative events, discourse units, sentences-clauses-phrases, lemmata
  – linguistic: Verb type, Construction type (BLC, Pres, ID, etc.), Figure, Ground, Satellites, etc.
  – gestural: alignment with lexis, type & function of gesture

• Some results:
  – verbs: Lemmens & Perrez 2012 *CogniTextes* 8
  – constructions & discourse: Lemmens & Perrez (forthc.)
Here I’m interested in the clothes and the furniture. Can you tell me where they are?

Difficulty of delineating locative clauses, e.g.,

– on the bed [that stands in the middle of the room], there lie clothes
  • linguistic (clausal) level: 2 locative events
    Fig1=bed; Fig2=clothes; Fig1 > Gr for Fig2
  • discourse / functional level: 1 locative event:
    Fig=clothes; rest = "auxiliary"

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• Another challenge: non-clausal expressions of location, e.g.

1) to the left, there’s a cabinet with a mirror on it
   = with + locative complement

2) to the left, there’s a cabinet with a mirror
   = with no locative complement

=> linguistically non-autonomous encodings; not considered as separate locative event (but special codes for both 1 & 2)

(cf. also below)

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**Gestural analysis**

• Classification of gestures inspired by McNeill + Kendon, but adapted to our RQ;

• Three major distinctions:
  1. REFERENTIAL gestures
  2. REPRESENTATIONAL gestures
  3. PRAGMATIC gestures

• Further subdivided according to semantics of the gesture
Gesture types & semantics

1. Referential gestures:
   - locative (pointing to location in gesture space)
   - directional (indicating direction)

2. Representational (a.k.a. 'iconic'):
   - shape & size, enactment, locative relations (e.g. "between"-gesture)

3. Pagmatic gestures:
   - discursive, meta-linguistic (epistemic)

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Previous results (verbal persp.)

• Lexical perspective:
  Lemmens & Perrez 2012 CogniTextes 8
  – Dutch: abundant use of posture verbs
    (canonical coding for location)
  – English & French: high use of neutral verbs
    ('be', 'se trouver')
  – Dutch L2: straddle the middle

NOTE: this goes against the Talmian typology, which
would have Dutch & English in the same group
(see Lemmens & Slobin 2008; Lesuisse & Lemmens, forthc.)

Previous results (Du-Fr only)

• Discourse perspective:
  Lemmens & Perrez, forthc. Dutch trains & French onions
  – DUTCH: tendency to structure locative
    information as a train, chaining locative
    information: Figure => Gound for next Figure
    • There is a bed, on which there are/lie clothes
  – FRENCH: tendency to structure information
    as an onion, adding layers of information on
    the same Figure
    • There is a bed which stands in the middle of the
      room
Previous results (gestures)

• Dutch (L1 vs. L2; over 450 gestures):
  – Learners: gesturally more tied to the described reality:
    • more LOCATIVE
    • more REPR, esp. more ENACTMENT
    • more deicting pointing to picture itself
  – Natives: more discourse related gestures

Previous results (gestures)

• Dutch L1 vs. L2 gestures:
  – Learners do use PRAGM gestures, but these are mostly epistemic (“I don't know”) or "apologetic" metalinguistic gesturing (also in facial expressions, shrugs, smiling/giggling)
  – Do occur with natives as well, but mostly when (i) they don't recognize the object or (ii) use a substandard (Flemish) word
Previous results (gestures)

- Repeated gestures:
  - L2: "gestural stuttering" = repeated gestures (either identical or with minor variations), typically aligned with verbal 'stuttering', hesitations or repetitions
  - L1: repetition of gestures does occur, but mostly this is to confirm a given lexical or gestural choice

=> gestural fluency a good indicator of linguistic fluency (cf. Gullberg 2009; Kida, 2005; Taranger & Coupier, 1984)

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Onomasiological perspective

• Research question:

_How intensively are the linguistic and gestural tools mobilised to express a given spatial configuration?_

• This represents in fact an onomasiological perspective, i.e. how is a given reality encoded (vs. the semasiological perspective of our previous studies)

Different types of density

• Referential density:
  – how often is a configuration referred to (verbally / gesturally)

• Encoding density:
  – how many lexical items / gestures are used for a configuration?

• Discursive (syntactic) density:
  – how many clauses are used (on average) per configuration
Verbal and gestural density

- Method:
  - identify spatial configurations
  - measure the verbal & gestural density

NOTE: seems simple enough, but not so easily implemented in fact, for various reasons
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Linguistic reference to configurations (L1 & L2)
Gestural reference to configurations (L1 & L2)

Reference to configurations
Ling – Gest (L1 & L2)
Different types of density

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Mean clause length configurations (L1 & L2)
Clothes on people

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<th>Gestural reference</th>
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Onomasiological perspective

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Onomasiological perspective

Two beds that ... euh ... one bed that stands above the other ...

Mean clause length/ Mean N Gest. configurations (L1 & L2)
Conclusions

• Referential density
  – Prominent configurations
    • Verbally
    • Gesturally

• Gestural density
  – L2 (for some configurations)
  – // verbal density
  – // previous results: learners more tied to the described reality as part of compensation strategies

Thank you!

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