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Inter- and intra-speaker variation of gestural density

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INTERNATIONAL COGNITIVE
LINGUISTICS CONFERENCE
Linguistic Diversity and Cognitive Linguistics
10-14 July 2017 Tartu, Estonia

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?

2

Outline

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

3

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

4

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.)

Picture 3



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"

- 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

10

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. Pragmatic gestures:
 - discursive, meta-linguistic (epistemic)

11

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12

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.*)

13

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 => Ground 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*

14

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 deictic pointing to picture itself
 - Natives: more discourse related gestures

15

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

16

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)

17

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18

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)

19

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

20

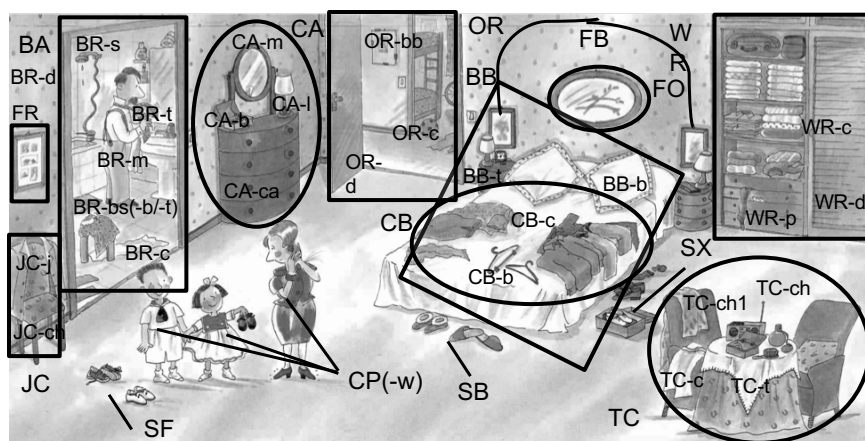
Verbal and gestural density

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

NOTE: seems simple enough, but not so easily implemented in fact, for various reasons

21

Coding scheme



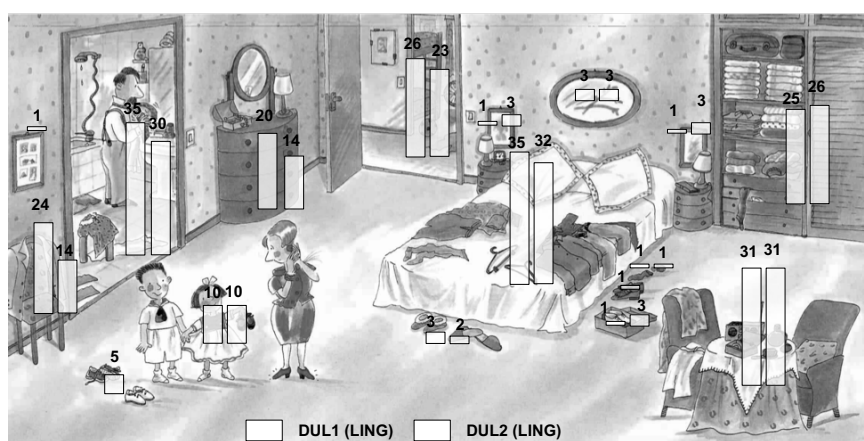
22

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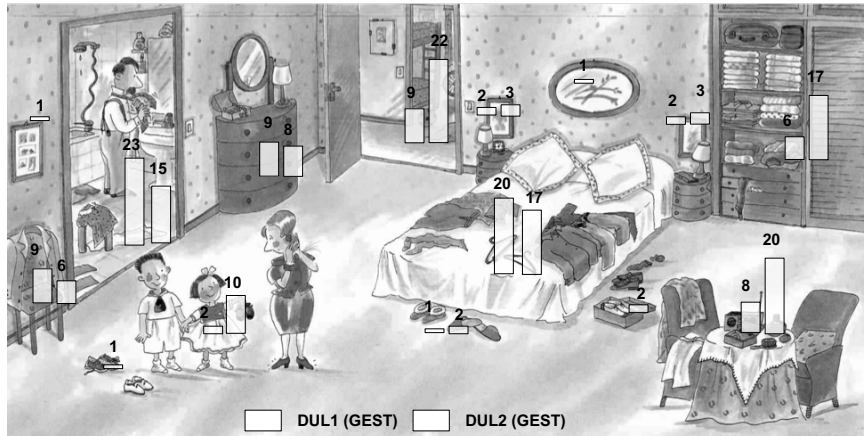
23

Linguistic reference to configurations (L1 & L2)



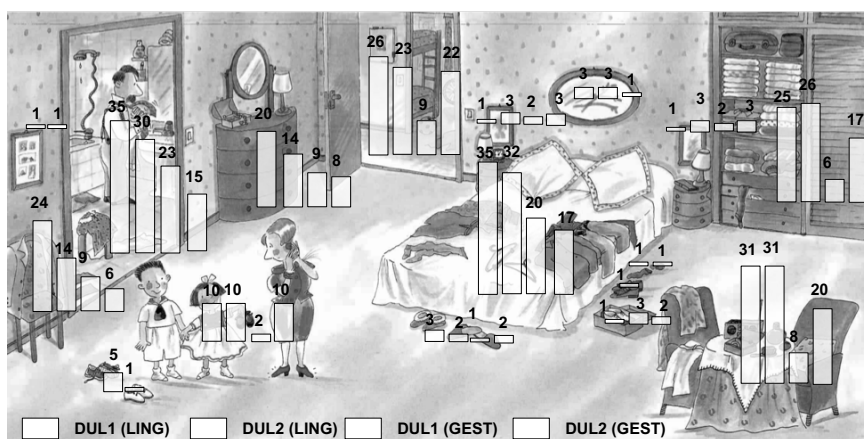
25

Gestural reference to configurations (L1 & L2)



27

Reference to configurations Ling – Gest (L1 & L2)



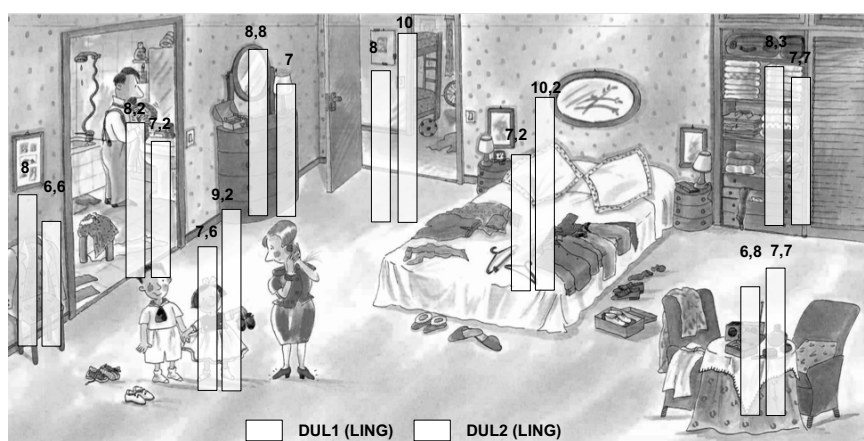
28

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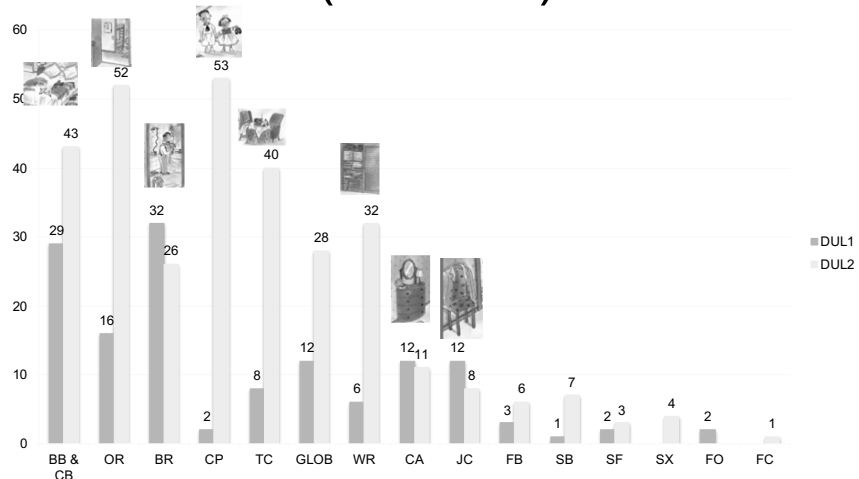
29

Mean clause length configurations (L1 & L2)



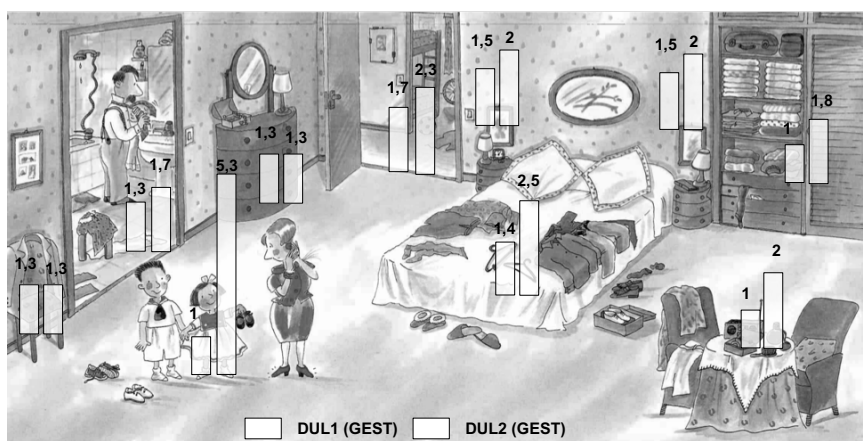
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N gestures / configurations (L1 & L2)



36

Mean N gestures / configurations (L1 & L2)



38

Clothes on people

| | Linguistic reference | Gestural reference | N gestures | N gestures (PRAGM) | N gestures (REPR) | N gestures (REF) |
|------|----------------------|--------------------|------------|--------------------|-------------------|------------------|
| DUL1 | 10 | 2 | 2 | 1 | 1 | 0 |
| DUL2 | 10 | 10 | 53 | 25 | 19 | 9 |



39

Onomasiological perspective

| | Linguistic reference | Gestural reference | N gestures | N gestures (PRAGM) | N gestures (REPR) | N gestures (REF) |
|------|----------------------|--------------------|------------|--------------------|-------------------|------------------|
| DUL1 | 7 | 1 | 1 | 1 | 0 | 0 |
| DUL2 | 5 | 16 | 16 | 3 | 10 | 3 |



40

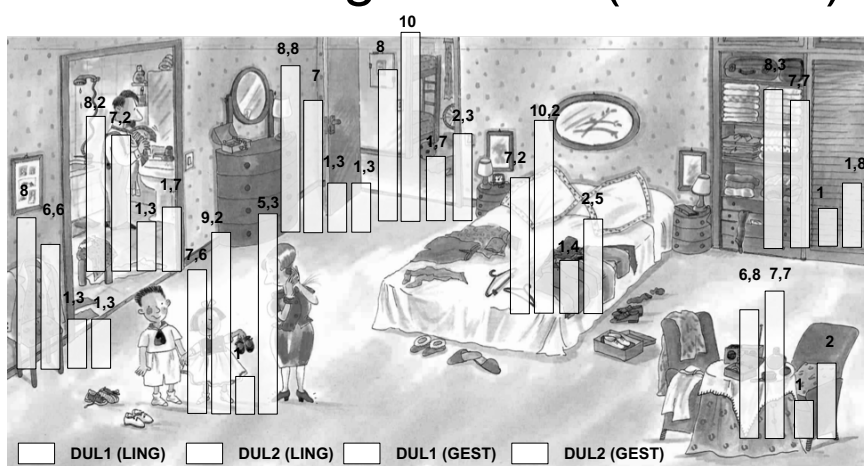
Onomasiological perspective

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



41

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



42

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

43



Thank you !

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