Gestural expressions of spatial information in L1 and L2

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Research project

• Typological differences w.r.t. expression of static location (native & learner data), with focus on:
  1. differences at lexical level
  2. differences at construction level
  3. different discourse strategies
  4. differences at gesture level

• separated for analytical purposes, goal = fully integrated account
Location verb project
(cf. Lemmens 2005; Lemmens & Perrez 2012)

– 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
– against background of Talmy's typology of S/V-framed languages (but not so crucial anymore)
– inter-Germanic differences (En./Du./Sw.); French-Gmc; co-verbal gestures L1 & L2

Picture 3

Here I'm interested in the clothes and the furniture. Can you tell me where they are?
Oral Picture Description Project

• 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)
• Some results:
  – verbs: Lemmens & Perrez 2012 CogniTextes 8
  – constructions: Perrez & Lemmens (in prep. a)
  – discourse: Lemmens & Perrez (in prep. b)

Co-verbal gestures

Research questions:
• Do speech and gesture convey the same type of information?
• How is the information expressed by lexis and gestures distributed? (i.e., what is expressed where and when?)
• What verbal elements do the gestures align with?
• Are there interlinguistic differences for gestures?
• Differences between natives & learners?
Previous work on gesture & space

• Motion events:
  – McNeill (2000): manner expression in gesture and speech; "gesture fogs" (Spanish) & "manner enhancing gestures" (English)
  – Brown & Chen (2013): motion events, manner gestures in Mandarin, English, and Japanese
  – Kita & Özyürek (2003): motion events
  – Gullberg (2011, 2013) placement events

• Static location:
  – Tutton (2010, 2013a, b)

Outline

1. Analysis
   – gesture types
   – gesture semantics

2. idiogests
   – quantitative analysis
   – qualitative analysis
Gesture types

Classification inspired by McNeill + Kendon:

1. REPRESENTATIONAL
   • locational (LOC)
   • directional (DIR)
   • locative-semantic (LOCSEM)
   • shape / size / surface
   • enactment

2. PRAGMATIC
   • beats
   • meta-linguistic comments
   • discursive gestures

Non-rigid categories

• Categories not always strictly delineated:
  – simultaneous expression of different semantic values ('semantic stacking'), e.g.
    • SHAPE+LOC (anchored gesture with shape of table)
    • SHAPE+ENACT (shape of chairs (fists) placed near table)
    • SHAPE+ENACT (shirt on chair): polysemous
  – distinctions not always clear-cut, e.g.
    1. DIR vs. LOC;
    2. LOC vs. LOCSEM: "anchoring"
    3. PRAGM vs. REPR
1. LOC vs. DIR

- LOCative: gesture is "anchored" in gesture space
  - DIRectional: gesture indicates direction (lateral, frontal, vertical axis)
- Example
  - "to(wards) the front"
  - "in front of"
  - "on/to the right" (anchored vs. non-anchored)

2. LOC vs. LOCSEM

- Given the task at hand (describe spatial scenes on picture), many gesture will center around locative relations (LOC, DIR, fictive motion gestures)
- some gestures express spatial relations withoutanchoring the gesture in the gesturally represented space
  - => LOCATIVE SEMANTICS gestures (Non-anchored locative predicates)
Examples LOCSEM

- *naast het tafeltje en de twee stoelen* (DuL1-3)
  next to the table. DIM and the two chairs
  repeated oscillating of thumb and index finger
  in center space chest height

- *daarnaast … staat … een bed dat tussen twee nachttafeltjes staat* (DuL1-6)
  next to that stands a bed that stands between two bedstands
  1. RH hand downward, center
  2. LR hands express "between" (non-anchored)
  3. LR hands locate the bedstands (anchored)

3. REPR vs. PRAGM

- "recycling" REPR for PRAGM in gestural repetition sequence:
  - first representational gesture
    => coded as REPR
  - repetition same gesture repeated to confirm lexical or gestural choice (± like a beat)
    => coded as PRAGM
Outline

1. Analysis
   – gesture types
   – gesture semantics

2. Results
   – idiogests
   – quantitative analysis
   – qualitative analysis

idiogests

• Lemmens 2015: individual differences between speakers:
  – frequency: ranges from 0 to 91 for same picture
  – type: gestural idiolects, cf. idiogest (term from choreography, Brannigan 2011)
Examples of idiogests

• speaker's gestural idiolect reflected in recurrent gestures with similar form
• Examples (OPD data, P3, Dutch L1):
  – the oscillator (DuL1-3; oscillating with hands)
  – the swayer (DuL1-2; swaying with hands)
  – the indexer (DuL1-12; using index finger all the time + maintaining that handshape)
  – the hook (DuL2-22): bent index finger
Idiogests

Suggestion that
  – idiogests are attributable to a personal gestural style,
  – idiogests are semantically or discursively motivated, i.e. reveal a speaker’s (temporary) perspective (pragmatic focus) on a given scene

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1. Analysis
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2. Results
   – idiogests
   – quantitative analysis
   – qualitative analysis
Quantitative analysis

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>N Gestures</th>
<th>Mean Gestures</th>
<th>Min</th>
<th>Max</th>
</tr>
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<td>Natives</td>
<td>11</td>
<td>137</td>
<td>12.5</td>
<td>3</td>
<td>29</td>
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<td>Learners</td>
<td>9</td>
<td>165</td>
<td>18.3</td>
<td>2</td>
<td>57</td>
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<tr>
<td>Total</td>
<td>20</td>
<td>302</td>
<td>15.1</td>
<td>2</td>
<td>57</td>
</tr>
</tbody>
</table>

1. Gesture types

- DUL1: 66.42%
- DUL2: 55.76%
- DUL1: 29.20%
- DUL2: 38.18%
1.1 Pragmatic Gestures

1.1.1 Discursive Gestures
Discursive gesture > Enumeration

1.1.1 Discursive Gestures

[Bar chart showing percentages for different categories labeled DUL1 and DUL2]
Discursive gesture > metalinguistic function (learner)

1.2 Representational gestures
Example of LOC gesture

Example of LOCSEM gesture
Outline

1. Analysis
   - gesture types
   - gesture semantics

2. Results
   - idiogests
   - quantitative analysis
   - qualitative analysis: onomasiological perspective

Picture 3 > Bed

Here I'm interested in the clothes and the furniture. Can you tell me where they are?
Onomasiological perspective

<table>
<thead>
<tr>
<th></th>
<th>Bed (only)</th>
<th>Bed (+ bedside tables)</th>
<th>N speakers using gestures?</th>
<th>N gestures</th>
</tr>
</thead>
<tbody>
<tr>
<td>DUL1 (11)</td>
<td>9</td>
<td>8</td>
<td>6</td>
<td>12</td>
</tr>
<tr>
<td>DUL2 (9)</td>
<td>7</td>
<td>4</td>
<td>4</td>
<td>10</td>
</tr>
</tbody>
</table>

**Tendencies**

- When the bed is mentioned, the bedside tables tend to be mentioned as well (learners > natives)
- When the bed and the bedside tables are mentioned, they tend to be accompanied by (multiple) co-verbal gestures
- Scene => **gesture burst**

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Onomasiological perspective
Onomasiological perspective
Discussion (1)

• Learners are more tied to the concrete reality they are describing
  – Represented spatial reality
    • More locative and enactment gestures
  – Physical reality of the picture
    • More deictics
• The natives tend construct a more complex spatial reality in their discourse
  – Gestures expressing spatial interrelationships

Discussion (1)

• Lines up with previous results on the linguistic expression of spatial relationships (posture verbs, locative Cxs)
• Language (discourse) proficiency is reflected by lexical variety and accuracy, constructional complexity and more complex gestural representation
Discussion (2)

• Rice & Hinnell (ICLC13)
  – Manual gestures > predominantly propositional (representational)
  – Upper body movements > more attitudinal and stance

=> Metadiscursive gestures tend to co-occur with gaze, upper body orientation, shoulder movements,…

Discussion (2)

• Difference between PRAGM:ENUM & REPR:LOC gestures not always clear
• // language: existence verbs to locate entities vs. specific posture verbs
• Gestures might show different degrees of locative specificity
Thank you!

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