Towards understanding the use and variation of constructed action [in different discourse types]

Tommi Jantunen & the SLC team
• Unconventional and gradient language use
• Emphasis on depiction and indication on utterance level

• Conventional and discrete language use
• Emphasis on description and indication on utterance level
**Constructed action (CA) and its degrees**

- In **constructed action**, the signers use their hands, face and other parts of the body to represent the actions, thoughts, feelings or sayings of someone they are referring to in the discourse. Constructed action has subtypes forming an articulatory continuum:

<table>
<thead>
<tr>
<th>Overt</th>
<th>Reduced</th>
<th>Subtle</th>
</tr>
</thead>
<tbody>
<tr>
<td>Many articulators,</td>
<td>Many articulators,</td>
<td>Few articulators,</td>
</tr>
<tr>
<td>Full character perspective</td>
<td>Partial character perspective</td>
<td>Partial character perspective</td>
</tr>
</tbody>
</table>

- **“snowman pulls back”**
- **“snowman” LOOK-AT**
- **WAKE-UP ("eyes")**

Corpus project of Finland’s Sign Languages
Open access research infrastructure and documentation of FinSL and FinSSL

Video recordings at JyU’s television studio 2013–2017
• 6 camera angles, Full HD quality
• 104 signers (of which 12 FinSSL)
• Each signer participates in 6–7 linguistic tasks
• Edited video material altogether 80 hours x 6 cameras

Annotation in ELAN
• Signs and translations (approximately 20% finished)
• Lemmatization with the help of Finnish Signbank
• Annotations for research purposes (clause, CA, etc.)

Archiving and publication
• Goal is to archive the material in FIN-CLARIN’s Language Bank of Finland (Kielipankki)
• 14.5 hours of FinSL material published in May 2019!

Corpus of Finnish Sign Language and Finnish Signbank

**Corpus FinSL in numbers**
- 14 hours and 22 minutes of video
- 343 mp4 files and 71 eaf files
- 182,51 Gb in total
- 18–21 signers depending on a task
- 6–7 linguistic tasks
- 107 784 sign tokens (with ID glosses)

**Structure of Corpus FinSL**
- Elicited narratives (3 tasks, CC BY NC SA 4.0)
- Conversations (4 tasks, FIN-CLARIN RES)

**How to access?**
- Corpus FinSL access via [kielipankki.fi](http://kielipankki.fi)
- Finnish Signbank at [signbank.csc.fi](http://signbank.csc.fi)

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## Tiers in ELAN

<table>
<thead>
<tr>
<th>Tier</th>
<th>Description (and annotation cell values)</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Käännös</em></td>
<td>Sentence level translation.</td>
</tr>
<tr>
<td><em>ID</em></td>
<td>A gloss identifying the sign.</td>
</tr>
<tr>
<td><strong>Cormier &amp; al. (2015)</strong></td>
<td></td>
</tr>
<tr>
<td>CA-type</td>
<td>The type of CA based on the annotations on the CA-summary and role tiers (overt, reduced, subtle).</td>
</tr>
<tr>
<td>Role1</td>
<td>The primary role the signer is taking on when using CA (narrator, &quot;character&quot;).</td>
</tr>
<tr>
<td>Role2</td>
<td>The secondary role the signer is taking on when using CA (&quot;none&quot;, narrator, &quot;character&quot;).</td>
</tr>
<tr>
<td>CA-summary</td>
<td>A stretch of discourse where CA is continuously used with one or more articulator to represent the same referent (i.e. within the same character role) (enacting).</td>
</tr>
<tr>
<td>CA-eyegaze</td>
<td>Break of eyegaze with addressee for purpose of enacting referent (enacting).</td>
</tr>
<tr>
<td>CA-head</td>
<td>Signer’s use of his/her head to represent head movement/posture of referent (enacting).</td>
</tr>
<tr>
<td>CA-face</td>
<td>Signer’s use of his/her facial expression to represent face of referent (enacting).</td>
</tr>
<tr>
<td>CA-torso</td>
<td>Signer’s use of his/her torso to represent torso movement/posture of referent (enacting).</td>
</tr>
<tr>
<td>CA-dom-arm/hand</td>
<td>Signer’s use of his/her dominant arm/hand to represent arm/hand of referent (enacting, instrument).</td>
</tr>
<tr>
<td>CA-ndom-arm/hand</td>
<td>Signer’s use of his/her non-dominant arm/hand to represent arm/hand of referent (enacting, instrument).</td>
</tr>
<tr>
<td>Quotation</td>
<td>The signer represents the sayings or thoughts of the referent (quotation).</td>
</tr>
<tr>
<td>Story</td>
<td>The duration of the story (story).</td>
</tr>
</tbody>
</table>

## CA types and lack of CA based on roles

<table>
<thead>
<tr>
<th>CA type</th>
<th>Primary role</th>
<th>Secondary role</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>none</td>
<td>narrator</td>
<td>none</td>
<td>Signer narration with no elements of CA. Native signer intuition: &quot;out&quot; of character.</td>
</tr>
<tr>
<td>overt</td>
<td>character</td>
<td>none</td>
<td>Clear use of CA (strong/many articulators), possibly simultaneous quotation of an utterance of the character. Native signer intuition: fully &quot;in&quot; character.</td>
</tr>
<tr>
<td>reduced</td>
<td>character</td>
<td>narrator</td>
<td>Some use of CA (use of articulators for CA between overt and subtle), possibly simultaneous quotation of an utterance of the character. Native signer intuition: mostly &quot;in&quot; character.</td>
</tr>
<tr>
<td>subtle</td>
<td>narrator</td>
<td>character</td>
<td>Some elements of CA (weak/few articulators), possibly simultaneous quotation of an utterance of the character. Native signer intuition: mostly &quot;out&quot; of character but also a bit &quot;in&quot; character.</td>
</tr>
</tbody>
</table>

Corpus FinSL data annotated for CA in ELAN
Corpus FinSL data processed so far

- **Free conversations** (conversation) about the work, free time or hobbies (task 2) and **re-tellings of picture books** (narration) *Frog, where are you?* and *The Snowman* (task 5)
- 10 native FinSL signers (5 female; ages between 18–60+ years) performing both tasks
- Total video duration 2 hour 31 minutes
- 16 511 right hand sign tokens
- 1 096 CA type tokens
Research questions

1. How do different depicting signs occur with different degrees of CA in FinSL?
2. How do different depicting signs occur with different functions of CA in FinSL?
3. How does the use of CA vary according to the discourse type in FinSL?
4. How does the use of CA vary according to the discourse type across SLs?
5. How does the use of CA vary according to the signers’ characteristics in FinSL?
Q1: How do different depicting signs occur with different degrees of CA in FinSL?
Q1: How do different depicting signs occur with different degrees of CA in FinSL?

Overlap percentages of depicting sign types and discourse strategy types in Corpus FinSL

- Regular narration (no CA):
  - Whole entity: 54.0%
  - Handling: 46.7%
  - SASS: 23.9%
  - Total: 100%

- Subtle CA:
  - Whole entity: 43.3%
  - Handling: 22.1%
  - SASS: 10.0%
  - Total: 100%

- Reduced CA:
  - Whole entity: 58.0%
  - Handling: 40.9%
  - SASS: 1.1%
  - Total: 100%

- Overt CA:
  - Whole entity: 75.4%
  - Handling: 20.8%
  - SASS: 3.8%
  - Total: 100%
Q3: How does the use of CA vary according to the discourse type in FinSL?

Mean CA in conversation 4.62 %

Mean CA in narrative 37.76 %

p=<0.0001 ***
Q5: How does the use of CA vary according to signers’ characteristics (sex) in different discourse types of FinSL?

Average use of CA in conversation by sex
- Male: [Bar Height]
- Female: [Bar Height]

Average use of CA in narrative by sex
- Male: [Bar Height]
- Female: [Bar Height]

p = 0.061 (*)

p = 0.387
Q5: How does the use of CA vary according to signers’ characteristics (age) in different discourse types of FinSL?

Average use of CA in conversation by age

- Young (<40): 4.14%
- Old (50+): 5.35%

Average use of CA in narrative by age

- Young (<40): 25.01%
- Old (50+): 50.89%

$p = 0.697$

$p = 0.0021$

**
Conclusion

• We are currently processing our new Corpus FinSL material in order to investigate the use and variation of constructed action in FinSL.

• Preliminary results based on a small sample support our initial hypotheses as well as suggest new ones.

• In the future, all research questions will be dealt with more extensively, and we also have plans for conducting cross-linguistic comparisons.
Thank you!

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