Agent Control and the Acquisition of Event Culmination in Basque, Dutch, English, Spanish and Mandarin

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Acquisition of Event Culmination

- Phenomenon
  Children sometimes accept incomplete events for telic-perfective clauses

- Dutch, English, German, Greek, Italian, Mandarin, Polish, Russian, Spanish

- Variations depending on language, design, materials, task, verb type, object type
Grammar of Event Culmination

Traditional semantic theory
• Verb meaning: telic V culmination point; atelic V not.
• Other elements in VP: Germanic particles, Mandarin resultative VV compounds.
• Tense-aspect marking interaction
  • Telic V + perfective entails culmination
  • Telic V + imperfective no entailment
Novel developments in semantic theory

- Incomplete event interpretations of telic-perfective sentences
  - With change-of-state verbs: Mandarin, Hindi, Thai, Salish languages.

- Situations with partial result; in Mandarin even for no result

1. Zhangsan guan-le na shan men, dan men hai kai-zhe
   Zhangsan close-PERF that CLF door but door still open-DUR
   "Zhangsan closed the door, but the door was still open."

- Type of subject plays a role (Liu, in prep.)

2. #Yi zhen da feng guan-le na shan men, dan men hai kai-zhe
   One CLF strong wind close-PERF that CLF door but door still open-DUR
   Intended: "The strong wind closed the door, but the door was still open."
Novel developments in semantic theory

• Agent Control hypothesis  
  Demirdache & Martin 2015: 201

“Zero-result non-culminating construals require the predicate's external argument to be associated with 'agenthood' properties.”
Research question & predictions

Do incomplete event interpretations in children have the same source as adults’ non-culminating construals in languages like Mandarin?

**Hypothesis:** Children mistake their lg as Mandarin, as a lg that allows non-culminating construals

**Prediction:** Child language reflects ACH: More acceptance of incomplete situations for Agent than Cause subjects

- Telic-perfective sentences
- Subject type: *Agent vs Cause*
## Participants

<table>
<thead>
<tr>
<th></th>
<th>3-yr-olds</th>
<th>5-yr-olds</th>
<th>Adults</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basque</td>
<td>-</td>
<td>20 (5;8)</td>
<td>14 (30;0)</td>
</tr>
<tr>
<td>Dutch</td>
<td>20 (3;6)</td>
<td>20 (5;9)</td>
<td>10 (22;6)</td>
</tr>
<tr>
<td>English</td>
<td>-</td>
<td>23 (4;9)</td>
<td>10 (23;4)</td>
</tr>
<tr>
<td>Spanish</td>
<td>20 (3;4)</td>
<td>20 (5;4)</td>
<td>10 (n/a)</td>
</tr>
<tr>
<td>Mandarin mono</td>
<td>20 (3;4)</td>
<td>20 (5;6)</td>
<td>30 (33;6)</td>
</tr>
<tr>
<td>Mandarin VV</td>
<td>20 (3;2)</td>
<td>20 (5;3)</td>
<td>20 (33;5)</td>
</tr>
</tbody>
</table>
Design & Materials

• **Agent**--Full result (destroy)

• **Agent**--Zero result (blow out)
Design & Materials

- **Cause**--Full result (blow out)

- **Cause**--Zero result (destroy)
## Test sentences

### English

<table>
<thead>
<tr>
<th>Question 1</th>
<th>Question 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Did the clown destroy the glass?</td>
<td>Did the explosion destroy the glass?</td>
</tr>
</tbody>
</table>

### Basque

<table>
<thead>
<tr>
<th>Question 1</th>
<th>Question 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pailazoak edalontzia puskatu al du?</td>
<td>Eztandak edalontzia puskatu al du?</td>
</tr>
<tr>
<td>clown-ERG glass.ABS break.PF INT have.PRES</td>
<td>explosion-ERG glass.ABS break.PF INT have.PRES</td>
</tr>
</tbody>
</table>

### Dutch

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<thead>
<tr>
<th>Question 1</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Heeft de clown het glas kapotgemaakt?</td>
<td>Heeft de explosie het glas kapotgemaakt?</td>
</tr>
<tr>
<td>has the clown the glass broken</td>
<td>Has the explosion the glass broken</td>
</tr>
</tbody>
</table>

### Spanish

<table>
<thead>
<tr>
<th>Question 1</th>
<th>Question 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>¿El payaso ha roto el vaso?</td>
<td>¿La explosión ha roto el vaso?</td>
</tr>
<tr>
<td>the clown has broken the glass</td>
<td>the explosion has broken the glass</td>
</tr>
</tbody>
</table>

### Mandarin Mono

<table>
<thead>
<tr>
<th>Question 1</th>
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<tr>
<td>Xiaochou sui-le na-ge bolibeim ma?</td>
<td>Baozha sui-le na-ge bolibeim ma?</td>
</tr>
<tr>
<td>clown break-PERF that-CLF glass INT</td>
<td>explosion break-PERF that-CLF glass INT</td>
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### Mandarin VV

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<tr>
<td>Xiaochou qiao-sui le na-ge bolibeim ma?</td>
<td>Baozha zha-sui le na-ge bolibeim ma?</td>
</tr>
<tr>
<td>clown hit-break PERF that-CLF glass INT</td>
<td>explosion explode-break PERF that-CLF glass INT</td>
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Results

Basque
Main effect group and a situation-by-group interaction

Dutch
Main effect situation

English
Main effect situation

Spanish
Main effect of situation, group and a group and a situation-by-group interaction
Results in prep.

Mandarin monomorphemic Vs

Main effects Subject type
- Adults
  beta = -0.604 (0.13), z = -4.4***
- 3-year-olds
  beta = -0.118 (0.75), z = -2.4*

Mixed effects logistic regression using glmer() function of the lme4 package (Bates et al, 2015) in R was applied. We fit a model with a random intercept for participant as random factor with Subject_type (Agent versus Cause) as predictor.
Mandarin VV compounds

No significant effects for any age group

Mixed effects logistic regression using glmer() function of the lme4 package (Bates et al, 2015) in R was applied. We fit a model with a random intercept for participant as random factor with Subject_type (Agent versus Cause) as predictor.
RQ: Do incomplete event interpretations in children have the same source as adults’ non-culminating construals in languages like Mandarin?

**Hypothesis:** Children mistake their lg as Mandarin, as a lg that allows non-culminating construals

**Prediction:** Child language reflects ACH: More acceptance of incomplete situations for Agent than Cause subjects

**Results:** No support in Basque, Dutch, English, Spanish
Conclusions

• Novel angle on acquisition of event culmination: Agent control

• First time experimental support for ACH in Mandarin adults

• Support for ACH only in Mandarin children.

  No support in other child languages
Conclusions

• Basque, Dutch, English, Spanish, Mandarin 5-year-olds know
  • Perfective sentences with change-of-state verbs cannot
describe zero-result situations.

• Source for children’s non-culminating interpretations in
  previous research not the same as adult’s non-culminating
  construals in languages like Mandarin.
Questions for further research

Why did L1 learners in previous studies allow perfective-telic sentences for non-culminating events?

- Mostly tested for partial results
  - Why is acceptance of partial higher than for zero result?
- Misrepresentation verb meanings
  - V lacks culmination component
- Failure to draw conversational implicature
  - Assumption: Event culmination is an implicature, not entailment, for certain types of verbs
Questions for further research

How do L1 learners find out whether or not their lg allows non-culminating construals?

Why are they initially overly liberal in lgs that do not allow such construals?

❖ For certain verb types
❖ For partial results