Pronoun interpretation in direct and indirect speech

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Overview

1. Introduction
2. Experimental design
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4. Conclusions
1. Introduction to direct and indirect speech

<table>
<thead>
<tr>
<th>Direct speech</th>
<th>Aap zei “Ik krijg de auto”. Monkey said, “I get the car”.</th>
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<td>Indirect speech</td>
<td>Aap zei dat hij de auto krijgt. Monkey said that he gets the car.</td>
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**Syntactic cues:**
- Direct speech: verb-second word order
- Indirect speech: dat-complementizer, verb-final word order

**Phonetic cues:**
- Direct speech: pause between reporting clause and report, change of voice
1. Introduction to direct and indirect speech

<table>
<thead>
<tr>
<th>Perspective</th>
<th>Direct speech: shift from actual to original speaker's perspective (context shift)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Indirect speech: modal/intensional operator, actual speaker's perspective</td>
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2. Experimental design

Experimental subjects must interpret the deictic pronouns *ik* ('I'), *jij* ('you') and *hij* ('he'). Pronouns are either not embedded (no report baseline) or embedded in direct or indirect speech.

**Independent variables:**
1. reporting type (no report, direct speech, indirect speech)
2. type of pronoun (1p, 2p, 3p singular pronouns)

**Dependent variables:**
1. accuracy
2. reaction time
Test items

For test materials see following link:
http://test.jelmervanderlinde.nl/franziska/
(Google Chrome or Chromium browser required)
Introduction of protagonists and objects

- The protagonists (Dog, Elephant and Monkey) introduce themselves
- Test, whether subjects know the names of the protagonists
- 18 objects are named
Practice items

Example:
Olifant: Hond krijgt het boek.
Elephant: Dog gets the book.

- With proper names instead of pronouns
- Purpose: familiarize subjects with procedure
Part 1: no-report condition

Example:  
Hond: Ik/ Jij/ Hij krijg(t) de sjaal.  
Dog: I/ You/ He get(s) the scarf.
Part 2: Direct and indirect speech condition

**Direct speech**
- Hond: Aap zei “Ik/ Jij/ Hij krijg(t) de auto”.
- Dog: Monkey said, “I/ You/ He get(s) the car”.

**Indir. speech:**
- Hond: Aap zei dat ik/ jij/ hij de auto krijg(t).
- Dog: Monkey said that I/ you/ he get(s) the car.
Overview of test items

- Number of test items: 45, presented in random order
- Counterbalanced:
  - Participant roles of protagonists
  - Sentence type a protagonist utters
  - Spatial position of protagonists (left, right, middle)
  - Association of 18 objects to scenes

<table>
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<tr>
<th></th>
<th>No-report</th>
<th>Direct speech</th>
<th>Indirect speech</th>
</tr>
</thead>
<tbody>
<tr>
<td>1p</td>
<td>5</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>2p</td>
<td>5</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>3p</td>
<td>5</td>
<td>5</td>
<td>5</td>
</tr>
</tbody>
</table>
Indirect speech: Monkey said that I/ you/ he get(s) the car.

Aap zei dat ik jij hij de auto krijgt(t).
Direct speech: Aap zei “ik jij hij krijg(t) de auto”. Monkey said, “I/ You/ He get(s) the car”.

Original speech context (whispering)

Actual speech context (report)
Hypotheses

1. Increasing difficulty: no report < indirect speech < direct speech
   a. more mistakes
   b. longer reaction times


3. Increasing difficulty: 1p < 2p < 3p
   a. more mistakes
   b. longer reaction times
Experimental subjects

Current study

• Adult native speakers of Dutch ($N=98$)
  - Direct speech change of voice ($N=77$)
  - Direct speech no change of voice ($N=21$)
    ➢ Collapsed because no significant difference was found

Prospective studies

• Typically developing Dutch learning children, age: 4-7
• Dutch-Frisian bilinguals vs. Dutch monolinguals
3. Results
Effect of condition on accuracy

<table>
<thead>
<tr>
<th>Condition</th>
<th>Mistakes (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>No report</td>
<td>11.08844</td>
</tr>
<tr>
<td>Direct</td>
<td>17.0068</td>
</tr>
<tr>
<td>Indirect</td>
<td>8.29932</td>
</tr>
</tbody>
</table>

Significance codes

- ‘***’ p < 0.001
- ‘**’ p < 0.01
- ‘*’ p < 0.05
Mean percentage of mistakes

Significance codes

‘***’ p < 0.001
‘**’ p < 0.01
‘*’ p < 0.05
Effect of condition on reaction time

![Box plot showing the reaction times for different conditions: No report, Direct, and Indirect. The box plot indicates that reaction times are significantly different between conditions.]

Significance codes:
- ‘***’ p < 0.001
- ‘**’ p < 0.01
- ‘*’ p < 0.05
When participants make mistakes in direct speech, they predominantly interpret the pronouns like in indirect speech.
Analysis of mistakes in indirect speech

No clear trend to interpret pronouns in indirect speech like in direct speech
Effect of pronoun type on accuracy

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<th>Mistakes (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ik</td>
<td>5.78231</td>
</tr>
<tr>
<td>Jij</td>
<td>8.09524</td>
</tr>
<tr>
<td>Hij</td>
<td>22.51701</td>
</tr>
</tbody>
</table>

Significance codes

‘***’ p < 0.001
‘**’ p < 0.01
‘*’  p < 0.05
Effect of pronoun type on reaction time

Significance codes
‘***’ p < 0.001
‘**’ p < 0.01
‘*’ p < 0.05
Evaluation of Hypotheses

1. Increasing difficulty: no report, indirect speech < direct speech
   a. more mistakes ✓ ✓
   b. longer reaction times ✓


3. Increasing difficulty: 1p < 2p < 3p (exception: anaphoric pronoun)
   a. more mistakes ✓ (not 1p < 2p)
   b. longer reaction times ✓
Pretest children

• 5 children (4 girls, 1 boy)
• Age: 3;6 – 6;0 (3;6, 3;10, 4;10, 5;6; 6;0)

Children played experimental game on an iPad (touch screen) with an experimenter present
Pretest children: Accuracy

Percentage of mistakes

- No report
- Indirect
- Direct

Systematic mistake
Children always interpret hij as jij in no report
They make however no mistakes at all with hij in indirect speech.
Here it is an anaphoric pronoun and not a deictic one.
4. Conclusions

1. Context shift between actual and original speech context seems to be particularly demanding – even for adults.

2. Strong tendency to interpret pronouns in direct speech as referring to the participants of the actual speech context (even though this interpretation is not licensed in Dutch)
Generalisability of the results

Are deictic pronouns always more difficult to interpret in direct speech than in indirect speech?

Evidence against:

• Typology: direct speech more widespread
• Children acquire direct speech before indirect speech (Ely, McCabe 1993; Hickman 1993, Nordqvist 2001, Özyürek 1996)
• Direct speech is used much more frequently than indirect speech by children and their interlocutors (Köder 2013)
Limitation of the current study

• Pronoun interpretation in direct speech seems to be more difficult than in indirect speech if both the actual and the original speech context are highly salient and a shift between two representations is required.

• In other scenarios (e.g. narratives) where the original speech context is foregrounded and the actual speech context (e.g. narrator telling story to audience) is backgrounded, a representation of the original speech context is sufficient for interpreting direct speech. In this setup pronoun interpretation is probably easier in direct speech than in indirect speech.
References


