The role of information structure in pronoun resolution

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Peter hat Jan geschlagen, als er jung war.

*Peter hit John when he was young.*

- Preference for N1 (Hemforth & al., 2005)
- Two possible factors:
  - Subject
  - Topic
Comparison between German and French

- Questionnaires (Hemforth & al., 2005; Schimke & al., 2008)

  Peter hat Jan geschlagen, als er jung war.
  Pierre a giflé Jean quand il était jeune.
  *Peter hit John when he was young*

- N1 preference in German
- but N2 preference in French
Possible explanation: different marking of topicality

- In German, the first position is a typical position for topics
- In French, information-structural distinctions are not marked by position alone (as word order is less free)

-> Use of specific information structure markings:
  - C’est Pierre qui a giflé Jean quand il était jeune.
    *It’s Peter who hit John when he was young.*
Aim of the current study

• Keeping the first position constant, investigating the relative influence of:
  • Grammatical role (subject/object)
  • Information structural status (topic/focus)

N1 Topic & Subject: Quant à Pierre, il a giflé Jean quand il était jeune
   As for Peter, he hit John when he was young

N1 Topic & Object: Quant à Pierre, Jean l’a giflé quand il était jeune
   As for Peter, John hit him when he was young

N1 Focus & Subject: C’est Pierre qui a giflé Jean quand il était jeune
   It is Peter who hit John when he was young

N1 Focus & Object: C’est Pierre que Jean a giflé quand il était jeune
   It is Peter that John hit when he was young
Questionnaire results: Percentage of N1 preferences

- Effect of information structure: Preference for topics
- Interaction effect: Grammatical role effect (object preference) only for topics
Summary off-line results

- Topicalised referents are more accessible than focused referents
- Topicalised objects are more accessible than topicalised subjects (but no effect of grammatical role in focus conditions)
Visual World Experiment

• Eye-movements are measured while participants listen to sentences:

Here are the postman and the pirate. As for the postman, he will hit the pirate when he will be home.
Results: Probability of N1-fixations

Subject & Topic: Quant au facteur, il va gifler le pirate quand il...
Object & Topic: Quant au facteur, le pirate va le gifler quand il...
Subject & Focus: C’est le facteur qui va gifler le pirate quand il...
Object & Focus: C’est le facteur que le pirate va gifler quand il...
Results: Probability of N1-fixations

- Effect of grammatical role: Preference for objects
- Effect of information structure: Preference for topics
Results: Probability of N1-fixations

- Effect of grammatical role: Preference for objects
- Effect of information structure: Preference for topics
Results: probability of N1-fixations

- Effect of grammatical role: Preference for objects
- Effect of information structure: Preference for topics
Summary on-line results

- Objects are preferred over subjects
- Topicalised referents are more accessible than focused referents
- Do these factors have the same on-line effect in German?
German Experiment

- Eye-movements are measured while participants listen to sentences:

Here are the postman and the pirate. As for the postman, he hit the pirate when he was home.
Results: probability of N1-fixations

- Effect of grammatical role: Preference for objects
- Interaction effect: Object preference for topics
Results: probability of N1-fixations

- Interaction effect: Object preference for topics
- Effect of information structure: Preference for topics
Results: probability of N1-fixations

- Effect of information structure: Preference for topics
Summary German on-line results

- Early preference for topicalised objects
- Topicalised referents are more accessible than focused referents
Cross-linguistic summary

• Grammatical role has **different effects**:
  • Strong and lasting object-preference in French
  • Topicalised objects are only transitorily more accessible in German (but no grammatical role effect for foci)

• Information structure has **similar effects**:
  • Topicalised referents are more accessible than focused referents