Focused object fronting is emphatic — an effect of syntax or prosody?

Marta Wierzba
University of Potsdam / SFB 632

Linguistic Evidence — Tübingen, Feb 13th 2014
Outline

- **Background** on the relation between emphasis, prosody, and syntax

- **Experiments:**
  1. Is object fronting emphatic? (written experiment)
  2. If yes, is this due to syntax or prosody? (auditive experiment)
Distinguishing emphasis from other notions:

- **Focus**: often considered as a linguistic category having to do with alternatives (Rooth 1985, 1990) that is systematically marked in most languages.

- **Contrast**: controversial status — independent information structural category, subcategory of focus, or can it be reduced to emphasis?

- **Emphasis**: usually considered a paralinguistic notion — speakers can freely choose to highlight parts of the utterance without changing what is said. Gussenhoven (2002) relates this effect to the universal *Effort Code* (greater production effort → greater emphasis).
Hartmann (2008)’s view:

- Focused elements can optionally be realized with **additional prominence** to express emphasis, using available grammatical means:
  - **syntactically:** by movement to the left periphery, e.g. in Hausa (tone language)
  - **prosodically:** by more prominent pitch accents in intonation languages
- However, this additional marking is not systematic and depends on pragmatic factors, such as the choice to highlight unexpected discourse moves.
German potentially provides both prosodic and syntactic means to express emphasis:

- Focus is marked by pitch accents, which can be produced gradually higher or steeper.
- The prefield as a special syntactic position which has to be filled in declarative clauses (V2); it has been suggested that filling the position by the closest element is unmarked, whereas non-minimal fronting is marked (...).
Is there a difference between in situ and fronted objects?

- Focused objects are equally acceptable in situ and in prefield position (Fanselow et al. 2008), suggesting that focus licenses non-minimal fronting.

- However, Frey (2010) suggests that there is an interpretative difference: fronted objects are necessarily emphatic (i.e., ranked high on some salient scale). Frey implements this by a conventional implicature associated with the prefield position, but it also fits with the effort code idea.
Example supporting this claim:

(1) *from Frey (2010:1424):*

Was hat Otto dieses Mal Besonderes auf dem Markt gekauft?
‘What extraordinary thing did Otto buy on the market this time?’

(a) Papayas₁ hat er dieses Mal t₁ gekauft.
   papayas has he this time bought
   ‘He bought papayas this time.’

(b) Er hat dieses Mal Papayas gekauft.

**Frey’s intuition:** (a) is preferred over (b) in this context; reason: match between the emphatic status of the object introduced by the word ‘extraordinary’ in the context and the emphasis expressed by the fronting.

**My intuition:** I agree, but (a) also seems to involve extra prosodic prominence.
Syntax or prosody?

Frey notes that the movement operation that fronts *papayas* necessarily comes with “stress” on the fronted element. However, he establishes a causal relation between the syntactic position and the emphatic interpretation, and not between prosody and interpretation.

→ Goal: study in which both syntax and prosody are controlled.
Experiments: research questions

The goal of the experiments is to answer the following questions:

1. Is a fronted focused object more emphatic than in situ?
   → tested in experiment 1 (written)

2. Is this effect due to syntax or prosody?
   → tested in experiment 2 (auditive)
The experiment is based on Frey’s example, but reversed: participants had to **choose between contexts**:

- □ Was hat Lena Besonderes gekauft?  
- □ Was hat Lena gekauft?

*Lena hat Bananen gekauft.*
Written experiment: design and method

Design:
- 2 conditions: OVS vs. SVO (within items)

Method:
- online questionnaire
- contexts presented in random order
- 16 items, intermixed with 16 fillers
- 20 participants
Written experiment: results

Logistic regression model:
\[ p < 0.01 \]

<table>
<thead>
<tr>
<th></th>
<th>SVO</th>
<th>OVS</th>
</tr>
</thead>
<tbody>
<tr>
<td>17.3%</td>
<td>28.5%</td>
<td></td>
</tr>
</tbody>
</table>
A look at the fillers:

<table>
<thead>
<tr>
<th>Question</th>
<th>Choose with adj.</th>
</tr>
</thead>
<tbody>
<tr>
<td>What (warm thing) does Martin have in his wardrobe?</td>
<td>58.8%</td>
</tr>
<tr>
<td>Martin has a fur coat in his wardrobe.</td>
<td></td>
</tr>
<tr>
<td>What (fancy thing) does Robert have in his wardrobe?</td>
<td>58.8%</td>
</tr>
<tr>
<td>Robert has a tuxedo in this wardrobe.</td>
<td></td>
</tr>
<tr>
<td>What (uninteresting thing) did Klaus watch in the cinema?</td>
<td>5.9%</td>
</tr>
<tr>
<td>Klaus watched a horror movie in the cinema.</td>
<td></td>
</tr>
<tr>
<td>What (new thing) did Karl bring along?</td>
<td>12.5%</td>
</tr>
<tr>
<td>Karl brought along a board game.</td>
<td></td>
</tr>
</tbody>
</table>

→ It seems that the task worked in the intended way: participants chose the context with the adjective if the target object necessarily/typically has the corresponding property.
Auditive experiment: design

**Design:**

- Factor 1: OVS vs. SVO (within items)
- Factor 2: maximal pitch of the accent, high vs. low (within items)

**Method:**

- participants listened to the sentence via headphones, then chose between contexts
- contexts presented in random order
- the same 16 items, intermixed with 16 fillers
- 20 participants
Auditive experiment: materials

Materials were created as follows:

- each item was recorded as SVO and OVS separately
- the objects was **cut out** of the SVO utterance and inserted in the initial position in the OVS sentence

→ the object was **phonetically identical** in both versions

![Diagram showing the process of cutting out an object and inserting it in a different sentence structure.](image)
In the “high accent” condition, the object was produced with a much **higher maximal pitch** than in the “low accent” condition:

<table>
<thead>
<tr>
<th></th>
<th>max. pitch</th>
<th>min. pitch</th>
<th>mean pitch</th>
</tr>
</thead>
<tbody>
<tr>
<td>high accent</td>
<td>325 Hz</td>
<td>188 Hz</td>
<td>244 Hz</td>
</tr>
<tr>
<td>low accent</td>
<td>242 Hz</td>
<td>179 Hz</td>
<td>215 Hz</td>
</tr>
</tbody>
</table>
Examples for all four conditions:

- (a) Lena hat [Bananen]_H gekauft.
- (b) [Bananen]_H hat Lena gekauft.
- (c) Lena hat [Bananen]_L gekauft.
- (d) [Bananen]_L hat Lena gekauft.
Auditive experiment: results

Logistic regression model: main effect of accent ($p < 0.001$), no main effect of order ($p = 0.08$), no interaction ($p = 0.15$).
Summary of the results:

- With **written** materials, objects are perceived as more emphatic in OVS than in SVO order.
- The study with **auditive** materials shows that if the object is phonetically identical in OVS and SVO order, fronting does not increase perceived emphasis.

Possible conclusion at this point:

→ causal relation between **prosody and emphasis**, and not between syntax and emphasis
→ **additional assumption** required: fronted objects are typically read with increased prosodic prominence (to be tested)
Discussion

Alternative interpretation:

- There is a direct effect of word order, but it is masked by declination. Listeners normalize for declination/downstep: a phonetically identical pitch accent will be perceived as higher in later positions.

- This could increase the perceived emphasis of the object in SVO order in comparison to OVS.

→ causal relation between prosody and emphasis, and between syntax and emphasis
Further research necessary:

- Are fronted objects typically read with increased prosodic prominence?
- How would the results look if declination is taken into account?
Thank you for your attention!