Is there really an asymmetry in the acquisition of focus intonation?

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Focus and accentuation

- **Topic:**
  - the referent that a WH-question is about

- **Focus:**
  - the information required by the WH-word

*Speaker A:* Look! Carrots! Someone is eating the carrots.
Who is eating the carrots?

*Speaker B:* The rabbit is eating the carrots.

- focus
- topic
- new, contrastive
The alleged asymmetry

- Adult-like in using (emphatic) accentuation to encode (contrastive) focus at the age of 3 or 4 (in English)

- Not adult-like in comprehending the mapping between focus and accentuation at the age of 4 and 5 (in English)

The problem

- Limited comparability between production data and comprehension data in past work
The alleged asymmetry - production

The rabbit is eating carrots.

Hornby & Hass (1970),
MacWhinny & Bates (1978)
Baltaxe (1984)
Muller et al. (2005)
The alleged asymmetry - comprehension

- The processing of accentuation and focus in word recognition (Cutler & Swinney 1987)
  - Note: focus and accentuation were manipulated independently

  - e.g. The farmer only sold a banana to Snow White.

- Interpretation of ‘contrastive stress’ in pronouns (Solan 1980, McDaniel & Maxfield 1992)
  - e.g. The camel hit the lion, and then HE hit the elephant.

- Interpretation of topic and comment (or: focus) (Hornby 1971)
  - e.g. The rabbit is eating CARROTS.
The proposal

- The ‘complete comparability’ criterion:
  - No compelling evidence for an asymmetry in the acquisition of focus intonation found in earlier studies
Focus and accentuation in Dutch 4- to 5-year-olds

- Can they use accentuation to encode non-contrastive focus on subject and object in SVO declaratives?
- Can they comprehend focus intonation in SVO declaratives?
  - Can they process the mapping of accentuation to focus?
  - Can they indentify the locus of focus on the basis of accent placement?
Production - method

- A picture matching game
- 4- to 5-year-olds (N=12, mean age 5;1)
- Adults (N=9)

Kijk! Een biet!
Look! A beet!

Wie eet een biet?
Who eats the beet?

Chen (submitted)
E: This is a beet. S: What's
Production – data

- 36 SVO answer sentences

  questions about subject
  
  Wie eet een biet?
  
  De poetsvrouw eet een biet

  questions about object
  
  Wat pakt de poetsvrouw?
  
  De poetsvrouw pakt een vaas.

- Annotated for intonation following ToDI (Transcription of Dutch Intonation, Gussenhoven 2005)
Focus is accented regardless of position

Topic
  - When following focus: more frequently realised with no accent
  - When preceding focus: accented, just like focus
Production – results – children

Sentence initial

Sentence final

focus  topic

no accent  accented

focus  topic

no accent  accented

!H*L  L*H

Sentence initial

Sentence final

focus  topic

no accent  accented

focus  topic

no accent  accented

!H*L  L*H
Comprehension

- If production precedes comprehension, 4- and 5-year-olds will not process the mapping of accentuation to focus in online language comprehension.

- A Reaction Time experiment
Comprehension – method

- Participants: 4- to 5-year-olds (N =11) & adults (N =11)
- Question-answer dialogues
  - Accent placement and focus matched (N = 8, 4 with focus on S/O)
  - Accent placement and focus did not match (N = 8)
  - Fillers: no accent (flat intonation) (N = 16)
- ‘emphatic’ judgment (why?)
  - ‘emphatic’ -> The speaker finds it exciting (‘spannend’) to answer the question.
  - ‘not emphatic’-> The speaker finds it boring (‘niet spannend’) to answer the question.
Can 4- to 5-year-olds process the mapping?

- Subject Verb Object
  - Yes

- Subject Verb Object
  - Yes

- Subject Verb Object
  - Optional accent in initial topic
A significant effect of appropriateness of accent placement
- More emphatic judgments when accent placement is appropriate.
Comprehension – results – children

- A clear effect of appropriateness of accent placement
  - Longer mean RT in the ‘mismatch’ condition

![Bar chart showing mean RT (ms) for children (N=11). Mismatch condition has a longer mean RT compared to the Match condition. T-value: 2.88, df: 10, p < 0.05.]

df = 10
t = 2.88
p < 0.05
Comprehension – results – children (2)

**children (N=11)**

![Bar chart showing mean RT for mismatch and match conditions.

- **Mismatch**: Q_Object
- **Match**: Q_Object

Subject Verb **Object**  Subject Verb **Object**

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But there is more

- Choice of accent type in focus marking

- Initial

- Final
But there is more (cont’d)

- Intonational realisation of focus with different scopes in different syntactic constructions
  - Focus on SVO or VO vs. focus on V or O in SVO sentences
  - Focus in adjective + noun
  - ...
- Intonational realisation of focus in yes-no and WH-questions
Conclusions

- Past work provides no conclusive evidence for an asymmetry in the acquisition of focus intonation.
- New results suggest 4- and 5-year-olds’ comprehension is as good as their production regarding the mapping of accentuation to non-contrastive focus in SVO declaratives.
- More work is needed to establish the relationship between production and comprehension in the acquisition of focus intonation.
Thank you for your attention!
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The rabbit is eating grapes outside.

Transcription of Dutch Intonation (ToDI)

[The rabbit is eating grapes outside] (intonational phrase)