Prosodic influences of relative clause attachment in 3-site context revisited

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Why this experiment?

Basics

– Improving / re-doing a paper by Wijnen and Quene
– Rel. clause gets attached to one of 3 parts of a complex NP
– The apple next to the sandwich with the chese *that tastes good*

Wijnen and Quene

– Gibson et al: recency / predicate proximity cause U-shaped attachment preference in 3-site case
– Wijnen and Quene: There is simply no way to „pronounce" middle attachment, even written language is affected by this

Things to consider

Classic arguments

- Predicate Proximity: Attachment close to the PP head preferred
- Recency: Attachment close in terms of the string
- Strength of the effects may vary, but middle attachment is always least preferred

Prosody

- Utterances should be pronounceable to be „thinkable"
- You cannot easily cut out the *middle* one of 3 parts alone
- . . . so you cannot emphasize it and its attachment to the RC

The design

Our modifications

- Ambiguity is kept global (no agreement to force the attachment)
- We check *if* the attachment could be conveyed before searching the *how* (avoiding „prejudices")
- 2nd experiment for comparison: complex NP but no RC
- No trained speakers (nor trained listeners. . .)

The usual suspects

Pretest and fillers

- All 3 attachment sites had to be equally plausible in combination with the relative clause (test: questionnaire)
- Biased sentences were thrown out or used to inspire fillers
- Fillers: 4-site or otherwise similarly complex

Results

Communicating the attachment

- Speakers had to „emphasize'' one of the attachments
- Two experiments: With and without relative clause
- Check: Could we hear the intended attachment / emphasizing?
- Only *after* this: Prosodic analysis

Success ratings (6 subjects each)

- No RC: 3 „just did it'', 3 failed with 3rd site, 1 also with 1st site
- With RC: 3 „failed'', 1 failed with 3rd site, 1 also with 2nd

Prosodic analysis

Categories

- High/low pitch, loud/soft stress, lengthening, breaks, repetitions
- Annotation by hand, partially computer aided.
- Pooling and interpretation by hand (no real statistics)

Common effects

- Emphasized part is higher in pitch and louder (1st part has higher pitch in general)
- Sometimes there is a break after the emphasized part
- No-RC case was generally more consistent (or boring)

Prosodic analysis and conclusions

The hard case

- . . . is the with-RC case – less consistent prosodic pattern
- Only one of the subjects could make us perceive the attachment (3rd site weakest), 3 completely failed to do so
- So emphasizing relative clause attachment by prosody is hard

So what?

- Possible problem with the setup: NPs specify / modify each other, attachment to a *set* of them could happen
- We could not find any „middle is hardest" effect in prosody

More conclusions

Improvements

- Using whole sentences might be better
- More subjects give more „prosodic insight" and better statistics
- Untrained speakers and listeners have their advantages
- . . . but detailed prosodic analysis is nice as well
- Syntactic bias / semantic side effects could have spoiled the fun
- Feel free to improve your version of the experiment even more

Literature

The paper

- Sanne Bongers, Mirte van Galen, Sarah Bernolet, Eric Auer, 2002: The Bird on the Pole by the Pond – On Three-site NPs, Relative Clauses and Prosody
- Ask us for article, test sentences, test software, raw data, detailed statistics . . . or *send comments*

The original

- Frank Wijnen and Hugo Quene, 2000: Prosodic Phrasing and Relative Relative Clause Attachment
- See Wijnen and Quene 2000 for more pointers