

Pragmatics and prosody in interpreting 'not-because' sentences in English

Frazier and Clifton (1996) report a preference for narrow scope negation (BEC>NOT) in ambiguous negated 'because' sentences, i.e., easier processing of sentences like (1a) than (1b). In their analysis the *because*-clause is syntactically higher than negation in BEC>NOT sentences. Under Construal Theory, this does not constitute a Late Closure violation; the non-primary *because*-clause is not attached but associated, subject to various influences including Immediate Interpretation and Minimal Revisions. Together, these preserve the meaning initially assigned (*Jane didn't purchase*), yielding BEC>NOT. Alternative explanations of the BEC>NOT preference invoke the unusual prosodic contour and/or pragmatic presuppositions of the NOT>BEC reading. (For discussion, see Hemforth and Konieczny 2004; Koizumi 2005.)

Our experiment employed a new design, and provided data favoring the prosody/pragmatics approach. Constructions biased to BEC>NOT or NOT>BEC, see (1), were presented as main clauses or were embedded in *if*-clauses, as illustrated in (2). The *if*-clause context minimizes marked properties of the NOT>BEC reading. A NOT>BEC utterance typically lacks the prosodic phrase boundary before *because* that is characteristic of BEC>NOT, and often ends with a continuation rise (Hirschberg and Avesani, 2000). In the *if*-clause context, any internal boundary is reduced by the dominant syntactic break preceding the main clause, and a high final boundary tone is natural. Also, the main clause that must follow an *if*-clause meets the intuitive need for continuation after a bare NOT>BEC statement. (Intuitively, stating a non-reason raises the question of what the actual reason was.) Explanations appealing to prosodic and/or pragmatic factors therefore predict that the main-clause preference for BEC>NOT should reduce or even reverse in the *if*-clause context. But in the absence of these construction-specific ameliorating effects, an *if*-clause is not expected to facilitate processing of non-preferred readings. To check this, our design included PP-attachment ambiguities, see (4), in both main-clause and *if*-clause contexts.

The target constructions were presented visually, as the first of three successive frames, displayed response-contingently; see (2)-(3) for illustration. Frame 2 displayed a follow-up question appearing as a second sentence or a second clause, following main-clauses and *if*-clauses respectively. Frame 3 offered two answer alternatives; the task was to select the more appropriate answer. Only participants with question-answering accuracy above 80% overall (N=64 native English speakers) were included in the data analyses.

Frame 1 reading times for *not-because* sentences showed the predicted Scope \times Context interaction, $F_1(1,60)=16.76$, $p<.001$, $F_2(1,20)=9.03$, $p<.01$. Versions biased to NOT>BEC were read more slowly than those biased to BEC>NOT in the main-clause context, $p's<.01$, but not in the *if*-clause context, $p's>.25$. By contrast, the PP-construction showed the expected attachment-site effect, $p's<.001$, but no Site \times Context interaction, $F_1(1,60)=1.30$, $p>.25$, $F_2(1,20)=0.60$, $p>.25$. These findings for *not-because* cannot be explained by persistence of an initial on-line interpretation, but are explicable on the assumption of marked prosody/pragmatics for the NOT>BEC reading: when these are neutralized, the usual preference for BEC>NOT is no longer evident. While little support for a pragmatics account was reported by Hemforth and Konieczny (2004), a precise comparison of the relative contributions of prosody versus pragmatics will necessitate further experimentation.

- (1) Jane didn't purchase the white blouse because ...
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| a. | BEC>NOT bias | ... it had a stain. | (She decided not to purchase it.) |
| b. | NOT>BEC bias | ... it suited her. | (She purchased it, but for a different reason.) |

- (2) a. Main-Clause, NOT>BEC Jane didn't purchase the white blouse because it suited her.
 b. If-Clause, NOT>BEC If Jane didn't purchase the white blouse because it suited her,
- (3) a. Frame 2, Follow-up Question [Do/do] you know why she bought it?
 b. Frame 3, Answer Alternatives She liked the sleeves. She likes dark colors.
- (4) (If) Jason examined the beetles [with his microscope/with green stripes] after the trek ended

References

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