

We report a self-paced reading study of English 'not-because' sentences resolved by the content of their *because*-clauses for narrow-scope negation (BEC>NOT, see (1a)), or for wide-scope negation (NOT>BEC, see (1b)). Our aim was to refine the claim of Koizumi, Bradley, Fernández & Fodor (2006) that non-syntactic factors play into resolution of the ambiguity. That claim was based on their finding that NOT>BEC is not always dispreferred: Markedly slower processing was evident for NOT>BEC with main-clause presentation of the construction, as in (1), but no such difference was detectable with *if*-clause presentation, as in (2). Noting that the observed interaction has no explanation in terms of strategies encouraging persistence of an initially assigned BEC>NOT interpretation (Frazier & Clifton, 1996), Koizumi et al. suggested that an account of the usual NOT>BEC dispreference must refer to either or both its unusual prosodic contour and presuppositional demands. In the *if*-clause context, they noted, the major break between an initial subordinate clause and a subsequent main clause tends to suppress any prosodic boundary before *because*, as NOT>BEC utterances require (Hirschberg & Avesani, 2000). At the same time, the main clause syntactically guaranteed by a sentence-initial subordinate clause promises satisfaction of the pragmatic demand for remarks beyond the bare statement of an event's non-reason.

Koizumi et al. were unable to offer evidence to settle the relative contributions of prosody and pragmatics, and the present study takes up that task. Given Hemforth & Konieczny's (2004) conclusion that pragmatics has limited effects on the processing difficulty of NOT>BEC, our experiment directed its manipulation at prosody. Adopting Koizumi et al.'s design, materials, and procedure, we altered only the format under which text was displayed in Frame 1 of their three-frame protocol. For all items, the content originally displayed on a single line, as illustrated in (3a), was distributed over two lines, as illustrated in (3b), with the line-break placed uniformly at a clause boundary. This format exploits the strong tendency for readers to interpret display segmentations as prosodic breaks, e.g., Gilboy & Sopena (1996). The mid-construction break that the display insists upon is intended to disrupt any prosodically sourced benefit that NOT>BEC derives from embedding under *if*, and to hold unchanged whatever pragmatic (or other) support that context affords.

To the extent that prosody is the critical non-syntactic factor bearing on the resolution of the 'not-because' ambiguity, NOT>BEC is now predicted to be dispreferred in both main-clause and *if*-clause contexts. This is exactly the experimental outcome. Frame 1 reading time data from N=64 American English speakers, drawn from the population used in Koizumi et al.'s study, showed only a main effect of Scope favoring BEC>NOT ( $p < .001$  by participants,  $p < .05$  by items), with no Scope x Context interaction ( $p > .50$  by participants and items). This finding identifies prosody as the source of the benefit that NOT>BEC sentences drew from *if*-clause embedding in the original study. We argue that the two experiments, taken together, establish a role for prosody in the processing of 'not-because' sentences in English — and thus, in language processing more generally.

### Examples

- (1) The guard dogs didn't bark because ...  
a. ... they'd all been drugged. BEC>NOT: For the reason stated, the event did not occur.  
b. ... they heard an intruder. NOT>BEC: The event occurred for a reason not yet stated.
- (2) If the guard dogs didn't bark because (they'd all been drugged / they heard an intruder), ...
- (3) a. Frame 1 display, Koizumi et al. (2006)

*If the guard dogs didn't bark because they heard an intruder,*

- b. Frame 1 display, Present study

*If the guard dogs didn't bark  
because they heard an intruder,*