Prosodic distance iconically disrupts causal inferencing
Katy Carlson (Morehead State University) and Hannah Rohde (University of Edinburgh)
k.carlson@moreheadstate.edu

Understanding a discourse, and sometimes even a single sentence, means figuring out what relationships hold between the events or situations in the text. Many different relations have been posited to link events in discourse (Asher & Lascarides, 2003; Kehler, 2002; inter alia), though it has been argued that causal relations are inferred by default (Sanders, 2005). Causal interpretations can arise in the absence of causal connectives, as in the enrichment of and to mean and so (Grice 1975; cf. Txurruka 2003). However, in sentences like (1), the availability of this enrichment is undermined by the 2nd complementizer: i.e., the inference that the mayor’s election caused the rioting is drawn more easily without the 2nd that (Bjorkman, 2010, 2013). Experiments on causal inference using written materials show evidence for this effect (Tyler, Rohde, & Carlson 2015). Bjorkman provides a syntactic account of the effect whereby the presence of the 2nd complementizer enforces a larger syntactic structure, conjoined CPs instead of IPs, and the non-causal interpretation (the newspaper reporting two unrelated events) is only permitted in this larger structure. Alternatively, the effect could be explained iconically, with that adding distance between the conjoined clauses and leading to the assignment of a less close/default, non-causal relation. The iconic account predicts that additional distance—like that provided by a prosodic boundary—would undermine causal interpretations; Bjorkman’s account only predicts differences for manipulations at the syntactic level.

The current experiment tests auditory versions of sentences like (1) and finds that a major prosodic boundary before the second clause facilitates non-causal interpretations, which is most consistent with the iconic theory. The design crosses the presence/absence of the 2nd that with the presence/absence of an Intonational Phrase boundary (consisting of a continuation rise L-H% and pause) after and. Items (N = 24) consisted of 4 pairings of recordings as in (2). Participants (N = 63) played the 2 sentences and chose which sentence best conveyed a causal relationship between the conjoined clauses (i.e., for (1), they answered the question Which sentence is more likely to mean that the mayor’s election caused the riot?). In keeping with the iconic account, causal interpretations were affected by the presence of a prosodic break: for the pairings (2b) and (2c), the first version (without the break) was preferred (significant intercept in logistic regressions modeling sentence choice for the pair in (2b): β=.459, p<.01, and the pair in (2c): β=.382, p<.01). Sentence preference did not vary significantly with the presence/absence of the 2nd that (no significant intercept for models of (2a) or (2d)). The presence of that may be more obvious in writing than speech, where it is quite reduced (142 ms average duration).

The overall findings suggest that the presence of that is just one way to introduce semantic distance between clauses, but that such distance can also be achieved prosodically. A major prosodic boundary in speech affected interpretation by reducing causal inferences very much as that did in written language, supporting an iconic account of both effects. This result is also interesting because prosodic boundaries usually affect interpretation at the level of syntactic attachment (Cutler, Dahan, & van Donselaar 1997; Watson & Gibson 2005; etc.). In both the prior work on that and these new prosodic findings, it is notable that elements which do not carry much inherent semantic content (an optional complementizer or a break in speech) can affect interpretation at the level of causal inference in establishing discourse coherence.

(1) The newspaper reported that the mayor was elected and (that) there was a riot.

(2) a. [No That, No Break] vs. [With That, No Break]: test for effect of that
b. [No That, No Break] vs. [No That, With Break]: test for effect of break
c. [With That, No Break] vs. [With That, With Break]: test for effect of break given that
d. [No That, With Break] vs. [With That, With Break]: test for effect of that given break
References


