Shaping discourse expectations by restricting referents

Although coherence relations are often assumed to hold between clauses, restrictive relative clauses (RCs) are often not granted discourse-segment status because they link to a noun phrase (NP) instead of to another clause. However, Rohde, Levy, and Kehler (2011), for instance, find that restrictive RCs can give explanations for an event expressed in the preceding main clause, in which case they can influence to which preceding referent the RC is attached. In addition, Hoek et al. (2017) report that coherence relations may be translated by restrictive RC constructions, and vice versa.

This study aims to confirm the finding that restrictive RCs can be interpreted as explanations or reasons for their matrix clause, and to explore whether restrictive RCs can also feature in other types of relations, specifically concessive relations. If coherence relations are indeed inferred between restrictive RCs and their matrix clauses, such relations in turn become candidates for influencing other discourse-level phenomena.

Discourse expectations

While processing a text, language users can form expectations about the upcoming discourse. *Implicit causality* (IC) verbs often participate in a causal relation, in which case a subsequent clause provides an explanation or reason for the event expressed by the IC verb (e.g., Kehler et al. 2008). IC verbs have been shown to affect anaphoric reference patterns. NP2-biased IC verbs, for example, favor continuations about the object (the NP2) over continuations about the subject (the NP1). The next-mention bias of IC verbs seems to be dependent on the presence of a causal relation; connectives that signal some form of contrast reduce the NP2 bias (Koornneef & Sanders, 2013).

In (1), each NP2 IC verb construction includes a restrictive RC modifying the object. If a causal relation is inferred between the restrictive RC and the main clause, as in (1a), the IC bias (i.e., an explanation featuring the NP2) has been fulfilled. It can be expected that the NP2 bias for subsequent clauses is reduced (Kehler & Rohde, 2015).

(1) We thanked the neighbor
       (1) who brought over a fruit basket…
       (2) who dropped our newly inherited vase…
       (3) who stopped by on Tuesday night…

A concessive relation between the restrictive RC and its matrix clause, as in (1b), indicates that something unexpected happens; thanking someone for ruining an heirloom is not a standard event. This discrepancy warrants an explanation. Compared to a neutral NP2 IC verb construction, as in (1c), there are multiple relevant candidates to focus an explanation on; the explanation may focus on the NP2 (e.g., they offered to replace it), but also on the NP1 (e.g., we are too nice for our own good), or on some other factor (e.g., the vase may have been incredibly ugly). Concessive RCs may thus reduce the NP2 bias for subsequent clauses, although not necessarily to the same extent as causal RCs. The influence of restrictive RCs on expectations about upcoming referents is explored in Experiment 1.

Experiment 2 addresses the question of whether restrictive RCs can guide expectations about the discourse structure. If a restrictive RC already provides a reason for the event encoded by the IC verb, as in (1a/2), there would no longer need to be an expectation for upcoming causal information to explain the matrix clause event. We would then expect any further causal cues to favor attachment to another part of the discourse, for instance the RC, as in (2), than when the IC causal requirement has not yet been fulfilled, in which case we expect continuations to favor attachment to the main clause, as in (3).

(2)   We thanked the neighbor who brought over a fruit basket **because we were new to the neighborhood.**

(3)   We thanked the neighbor who stopped by on Tuesday night **because we were grateful for his help.**

Experiment 1 – Next-mention

This experiment makes use of a continuation task to determine how restrictive RCs can influence expectations about upcoming referents. We recruited 56 native speakers of English through Amazon Mechanical Turk and presented them with 30 target stimuli consisting of a main clause with an NP2 IC verb of which the object NP was modified with a restrictive RC, and a connective (*because* or *even though*). The relation between the RC and the main clause was *causal*, as in (1a), *concessive*, as in (1b), or *neutral*, as in (1c). The target items were intermixed with 40 fillers of various types.

All continuations were coded for which referent from the context sentence was re-mentioned in subject position of the continuation. We analyzed the data using multi-level modeling with items and participants as crossed random factors.

As hypothesized, there were fewer NP2 continuations in the causal+*because* condition than in the concessive+*because* (β=1.06, p<.001) and neutral+*because* conditions (β=1.77, p<.001). In addition, there were fewer NP2 continuations in the concessive+*because* than in the neutral+*because* condition (β=0.72, p=.04). Finally, the NP2 bias was significantly reduced in *even though* as compared to *because* in the neutral (β=-1.15, p<.001) and concessive conditions (β=-0.80, p<.01), but not in the causal condition (β=0.06, p=.99).

Experiment 2 – Attachment

The purpose of this experiment is to investigate whether restrictive RCs can influence expectations about the part of a text that will be elaborated on. We recruited 55 native speakers of English through Amazon Mechanical Turk and presented them with the same target items as in Experiment 1, with the exception that the connective in all items was *because*. 24 of the original fillers were replaced with fillers that, like the target items, consisted of a main clause, an embedded clause, and a connective. To prevent biasing participants toward relating all continuations to the main clause, these fillers were designed in such a way that half of them would elicit continuations about the main clause, and the other half continuations about the embedded clause.

All continuations were coded for the referent mentioned in subject position. In addition, continuations were coded for attachment: i.e., did the continuation supply a plausible reason or explanation for the main clause, for the restrictive RC, or for both?

We analyzed the data using multi-level modeling (items and participants crossed). As hypothesized, there were fewer high attachments in the causal condition than in either the concessive (β=1.57, p<.001) or neutral condition (β=2.85, p<.001). In addition, the next-mention results for the *because* conditions reported in Experiment 1 were replicated.

Conclusion

Our results confirm that while restrictive RCs stand in a syntactic relationship with an NP, it is possible to infer a relation between the RC and its entire matrix clause at the discourse level. Our data demonstrate that the types of coherence relations that can be inferred between restrictive RCs and their matrix clauses are not limited to causal relations, but also include concessive relations. If a coherence relation is inferred between a restrictive RC and its matrix clause, this can influence both expectations about the referent on which the text will elaborate and the part of the discourse for which a reason will be supplied.

References

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