

CAUSALITY AND DISCOURSE COHERENCE IN ENGLISH FREE ADJUNCTS
JAMES REID
LINGUISTICS AND ENGLISH LANGUAGE
SCHOOL OF PHILOSOPHY, PSYCHOLOGY AND LANGUAGE SCIENCES
UNIVERSITY OF EDINBURGH

Free adjuncts, the non-finite supplementary constructions found in e.g. *Walking home, Anna found a dollar*, have attracted attention in the literature primarily on the grounds that the relationship (coherence relation) between the content of the free adjunct and that of its matrix clause must be inferred using, among other resources, world knowledge and the lexical semantic properties of the words that make up these constructions. In this talk, I consider free adjuncts whose antecedent is intuitively a fact or proposition expressed by the matrix clause:

- (1a) But [...] the negative ads have reached new levels of hostility, raising fears that this kind of mudslinging [...] is ushering in a new era of campaigns without content. ('That the negative ads have reached new levels of hostility raises fears that this kind of mudslinging is ushering in a new era of campaigns without content') (PDTB, wsj_0041,1)
- (1b) [T]he junk-bond market has collapsed in recent weeks, lessening the likelihood that such a transaction would succeed. ('That the junk-bond has collapsed in recent weeks lessens the likelihood that such a transaction would succeed') (PDTB, wsj_0080,3)

The set of proposition-controlled free adjuncts are to be constrained by considering the nature of the verbs that head these constructions. Specifically, the verbs that appear in such free adjuncts (e.g. *raise*, *lessen*, as above) must be able to take propositional subjects, as made evident by paraphrase tests using propositional *this* (e.g. *The ads have reached new levels of hostility. This raises fears...*) or eventive gerunds (e.g. *The ads' reaching new levels of hostility raises fears...*). To make the correct predictions about the relationships that hold between the content of a free adjunct and that of its matrix clause, I argue that it is necessary to place constraints on the semantics of the verbs that head these constructions. Specifically, the subcategorisation frames of these verbs are associated with different semantics as a means of predicting the different coherence relations inferred as holding between the content of a free adjunct and that of its matrix clause. Resolving these free adjuncts to a propositional antecedent (as in (1a,b)) triggers an interpretation whereby the content of the free adjunct and that of its matrix clause must be related by a Result coherence relation. In this respect, these verbs are examples of 'alternative lexicalisations' (AltLexes, Prasad, Joshi and Webber 2010), with this lexical specification of the coherence relation allowing one to capture the uniform presence of this particular coherence relation in examples of proposition-controlled free adjuncts in corpora. Resolving these free adjuncts to individual-subjects results in the interpreter having to make greater use of world knowledge in selecting the appropriate coherence relation:

- (2) The commercial changed the dynamics of the campaign (π_1), transforming it into a referendum on abortion (π_2). ('The commercial changed the dynamics of the campaign. It (the commercial) transformed it into a referendum on abortion.') (Penn Discourse Treebank, wsj_0041,3)

For this example, one non-monotonically infers Elaboration(π_1, π_2) on the basis of world knowledge relating to political campaigns and abortions rather than on the basis of the lexical specification on the relevant subcategorisation frame of verb *transform* (as would be the case

for the proposition-controlled *The party leaders for the campaign each held very different views on women's reproductive rights, transforming it into a referendum on abortion*).

Free adjuncts have attracted theoretical attention on the grounds that a great deal of their interpretation is left underspecified by the grammar (e.g. Stump 1985, Kortmann 1991). The examples discussed here are no different, but there is an additional level of complexity in that the verb heading the free adjunct may receive an ordinary 'lexical' interpretation (when resolved to an individual) or may be interpreted more like a causal discourse connective (when resolved to a proposition), raising questions about how the correct interpretation for a given complex sentence is chosen. For example, (1a) could in principle have been interpreted such that *raising fears* resolved to *the negative ads*, or *transforming* in (2) could have been resolved to the content of the matrix clause *the commercial changed the dynamics of the campaign*. To shed light on this issue, I draw on the Segmented Discourse Representation Theoretic (SDRT, Asher and Lascarides 2003) principle of Maximise Discourse Coherence (*ibid.*). SDRT treats the process of establishing a coherence relation between two segments and the task of resolving anaphoric components that the grammar would be assumed to leave underspecified as co-dependent inferences. Moreover, coherence is regarded a scalar property, with some interpretations for a given discourse being more coherent than others. This provides a means of shedding light on how an interpreter ranks and then chooses between the possible interpretations for free adjuncts, deciding between proposition or individual-controlled interpretations and the ramifications that these options have on the nature and quality of the coherence relation that holds between the discourse segments. This stance differs from and remedies problems with previous treatments of proposition-controlled free adjuncts, specifically Behrens (1998), who seeks to provide only a means of inferring the coherence relation and is therefore unable to elucidate the consequences that this has upon antecedent selection.

I conclude this talk by considering the role of free adjuncts within larger discourses, particularly with respect to the coordinating-subordinating distinction and the Right Frontier Constraint for coherence relations utilised in SDRT (and in other theories of discourse structure). Result is typically regarded as a coordinating coherence by default (Asher and Vieu 2005) such that giving a Result typically results in inaccessibility to any discourse segment that does not discourse dominate that Result (unlike e.g. an Explanation). Such discourse structural hypotheses relating to Result vs Explanation are also often motivated on the basis of the ontology of the events described and how they relate to previously described events. Attested examples like (3), however, suggest that Result free adjuncts are more flexible in terms of what they (do not) close off in the discourse structure:

- (3) The December contract opened just under Monday's close (π_1), triggered some previously placed buy orders (π_2), pushing the price to \$1,040 (π_3), and then encountered heavy selling by traders [...] (π_4). (PDTB, wsj_1203,5)

Here, we have Narration(π_2, π_4) despite the Result (π_3) that intervenes. I suggest that, as a result of their syntactically subordinate status, all free adjuncts introduce discourse segments that are discourse subordinate to those of the matrix clause, irrespective of the coherence relation linking the two segments. This allows us to explain facts relating to discourse accessibility like that exemplified by (3), but also allows us to make, by drawing upon pre-existing principles within SDRT, a range of predictions relating to free adjuncts and how they figure in discourse structure.

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