

Multiple concurrent discourse relations

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Alongside the question of whether a discourse relation will be expressed implicitly or explicitly is the question of whether an implicit relation should even be posited to hold at all in contexts in which an explicit cue is already present. Establishing the *possibility* of such concurrent relations is a necessary first step for eventually addressing the related question (the one asked by this workshop) of when and how such relations are marked, at least in contexts with discourse adverbials. Here we present results from a conjunction-insertion study, one component of a larger project on discourse relations in contexts with discourse adverbials. This study tests for the availability of a concurrent discourse relation alongside the meaning expressed by an explicit adverbial, as in (1-2) with “otherwise” and “instead”. These two anaphoric adverbials are the focus here as they both show a shared core meaning of ‘otherness’ via their lexical semantics as well as a flexibility in the relations they can participate in, making them a fruitful pair to compare. The only assumption we make regarding the semantics of these adverbials is an entailment of a substitute or alternative; crucially, we do not assume that the discourse relation meaning of causality or contrast derives from the adverbial itself. The results of our study suggest that properties of the adverbial itself, as well as factors from the discourse segments that provide context for the adverbial, work together to make available a set of predictable and manipulable discourse relations (causality (*because, so*), disjunction (*or*), and contrast (*but*)) that can be established in such contexts.

1. Proper placement of the testing device is an important issue _____ otherwise the test results will be inaccurate. → Predicted: possible insertion of “because” or “or”
2. There may not be a flight scheduled to Loja today _____ instead we can go to Cuenca. → Predicted: possible insertion of “so” or “but”

Sources of coherence: The examples in (1-2) illustrate several notable points about the establishment of discourse relations in contexts with discourse adverbials. First, the lexical semantics of the discourse adverbials themselves can contribute to the choice of discourse relation(s): By invoking an alternative, “otherwise” and “instead” raise the possibility of relations related to disjunction and contrast. Importantly, however, that sense of ‘otherness’ is necessary but not sufficient for establishing the full pragmatic logic that makes passages (1-2) coherent. Rather, both (1) and (2) depend on additional inferences about causality: In (1), the REASON to place the testing device properly is to avoid the undesirable outcome of inaccuracy; in (2), the RESULT of a lack of a flight to one place is the emergence of an option to go elsewhere. We have elicited conjunction insertions for passages whose discourse segments are designed to systematically induce different inferential reasoning (see Table 1). For ‘otherwise’, we vary the segment content to favor different relations that ‘otherwise’ can participate in: ARGUMENTATION, ENUMERATION, or EXCEPTION. For ‘instead’, we vary the information structural parallelism between the two segments.

Experimental setup and predictions: For ‘otherwise’, we adapted 48 naturally occurring passages, binned 16 each into the three categories in Table 1 (by the experimenters’ own judgements and confirmed via participants’ paraphrase judgments). The passages were largely taken from the NYTimes Annotated Corpus and COCA, edited to be brief

and make sense with no prior context. Original passages had either an explicit or implicit conjunction. Passages classified as ARGUMENTATION or EXCEPTION contained explicit ‘otherwise’. Some passages classified as ENUMERATION originally appeared as a list of options over several sentences without explicit ‘otherwise’. The inference of causality was predicted to be possible only in ARGUMENTATION (permitting *because* and allowing an alternation with *or* for the disjunction between desirable/undesirable outcomes), whereas an inference of contrast arises with ENUMERATION and EXCEPTION (the former also allowing *or* to capture the disjunction amongst elements in an enumerated list).

For ‘instead’, we created 16 minimal pairs, each with one variant that emphasised the structural and semantic parallelism and one variant that favored a causal link via cues like negation or downward-entailing operators (e.g., *too X*). Participants saw 8 passages with parallel emphasis and 8 without.

We recruited 28 participants (paid £50 each) to judge all 64 passages, interspersed among a larger set of 102 passages with other adverbials, presented over three days in batches of 34. Participants selected the conjunction that best expressed how the two segments were related, plus any other connectives that could express the same thing.

Results: For ‘otherwise’, the predicted patterns emerged: ARGUMENTATION passages yielded *because* or *or* or both (99% of the time); ENUMERATION passages yielded *but*, *or*, *and* or a subset thereof (98% of the time, where *and* can be considered an underspecified conjunction that is compatible with *but*); EXCEPTION passages yielded *but* or *and* or both (92% of the time). The experimenters’ judgments about each passage’s categorization were largely confirmed via a paraphrase test administered to participants after they had made all conjunction insertions for the day’s block of passages.

For ‘instead’, there were striking differences between conjunctions chosen for the parallel and non-parallel variants: As predicted, the parallel variant favored *but* in 82% of cases (and underspecified *and* an additional 9% of the time), whereas the non-parallel (causal) variant favored *so* in 92% of cases (and *and* an additional 6% of the time).

Discussion: These findings point to the systematic emergence of multiple sources of coherence and the multiple explicitations these coherence relations can yield. With a discourse adverbial like ‘otherwise’, the conjunctions *or* and *because* can alternate, not because these two conjunctions mean the same thing but because each one is making explicit a partial component of the underlying pragmatic logic. The findings show that even when an explicit adverbial is present, participants also infer another relation explicitated by their choice of conjunction. Moreover, in the case where they choose *or* to express ARGUMENTATION, an additional inference is still possible – (*because+or otherwise*).

‘otherwise’: ARGUMENTATION	Proper placement of the testing device is an important issue ----- otherwise the test results will be inaccurate.
‘otherwise’: ENUMERATION	A baked potato, plonked on a side plate with sour cream flecked with chives, is the perfect accompaniment ----- otherwise you could serve a green salad and some good country bread.
‘otherwise’: EXCEPTION	Mr. Lurie and Mr. Jarmusch actually catch a shark, a thrashing 10-footer ----- otherwise the action is light.
‘instead’: parallel emphasis	There was no flight scheduled to Loja yesterday ----- instead there were several to Cuenca.
‘instead’: parallel de-emphasis	There were too few flights scheduled to Loja yesterday ----- instead we went to Cuenca.

Table 1: Sample experimental materials