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## Coherence in Discourse

Discourse is a communicative event in which language plays a prominent role. It minimally requires a sender (writer, speaker), a receiver (reader, listener), and a message that is being communicated. This message is not just a concatenation of clauses; it forms a unified, coherent whole. Both the sender and receiver normally have the implicit agreement that the message being communicated is coherent.

Coherence in discourse has been studied in a range of disciplines, including linguistics, philology, sociology, philosophy, psychology, and computer science. Linguists identify and analyze inventories of the linguistic markers of coherence that are available in a language. Sociologists explore the production and comprehension of coherent discourse in naturalistic conversations that involve different groups and cultures. Psychologists collect data in experiments that test hypotheses about the effect of coherence on cognitive processing and representations. Computer scientists design and test computer models that attempt to produce and test coherent text.

The term *coherence* has been defined in various ways. Some researchers apply the term *cohesion* to the surface structure of the text and the term *coherence* to the concepts and relations underlying its meaning. *Cohesion* has sometimes been applied to smaller units of language in the text, and *coherence*, to some general overall interrelatedness in the text. Other researchers have defined *cohesion* as continuity in word and sentence structure, and *coherence* as continuity in meaning and context. As in the case of *coherence*, *discourse* has been defined in different ways. Several years ago, the term *discourse* was reserved for dialogue, and *text* was reserved for monologue. In

contemporary research, *discourse* covers both monologic and dialogic spoken and written language.

Somewhat more subtle distinctions are sometimes made. One can distinguish between discourse-as-product (the linguistic construct) and discourse-as-process (the communicative event). *Coherence* can be reserved for the conceptual relationships that comprehenders use to construct a coherent mental representation accommodated by what is said in the discourse. *Cohesion* is limited to the linguistic markers that cue the comprehender on how to build such coherent representations. Cohesion emphasizes discourse-as-product, and coherence emphasizes discourse-as-process.

Cohesion alone is not sufficient for the interpretation of the discourse. Comprehenders generate inferences on the basis of background knowledge and discourse constraints. Much of the background knowledge is experiential, so it involves common procedures and activities (called *scripts*), social interactions, and spatial settings. For instance, a narrative usually describes a setting, an action sequence with a conflict and plot, and an outcome. A script for eating in a restaurant would furnish inferences and help coherently tie together the explicit content of a narrative about a bad restaurant experience. Although cohesion alone cannot fully account for coherence in discourse, the psycholinguistic literature has shown that cohesion facilitates coherence.

Cohesion and coherence can be divided into local (microstructure) and global (macrostructure). Local cohesion and coherence concern the interrelatedness between adjacent discourse segments. Global cohesion and coherence concern the interrelatedness of larger spans of discourse. For instance, scripted action sequences are globally coherent. Also there are the rhetorical structures of narrative (such as setting + conflict +

plot + resolution), expository (such as claim + evidence, problem + solution), and other discourse genres.

Cohesion and coherence can be grammar driven and vocabulary driven.

Grammar-driven cohesion refers to sentence structure, word structure, and the intonation of the discourse segments. Vocabulary-driven cohesion refers to the lexical vocabulary of the discourse segment. These cohesion cues activate vocabulary-driven (pre-grammatical, knowledge-based) and grammar-driven (syntax-based) coherence. Vocabulary-driven and grammar-driven coherence are not necessarily mutually exclusive but often support each other, as illustrated below.

Consider the sentence *The dean (i) read the New York Times (ii) in his office (iii)*. A paraphrase with grammar-driven cohesion would reduce the discourse elements to the grammatical necessities: *He (i) always reads it (ii) there (iii)*. A vocabulary-driven paraphrase, on the other hand, would find meaningful lexical alternatives, as in *The man (i) always reads the newspaper (ii) behind his desk (iii)*.

In addition to the distinctions between local and global and between grammar- and vocabulary-driven cohesion, the types of cohesion discussed below have often been recognized.

Conjunctions relate adjacent discourse segments. There have been several classifications of these conjunctions in virtually every field. Most of these classifications include additive (*and, but*), temporal (*before, until*), and causal (*because, although*) conjunctions that are either extensive (*and, before, because*) or adversative (*but, until, although*).

Coreference specifies that two expressions refer to the same entity. Often the

coreference is grammar-driven by the use of pronouns, both pronominal (*he, she*) and reflexive (*himself, herself*). The interpretation of these pronouns is determined by their antecedents, i.e., previously mentioned words referring to the same person or object. The coreference can be both forward and backward. *Anaphoric* reference is a backward reference to an antecedent noun phrase or clause that was introduced earlier in the discourse (**John** kissed **Mary** because **he** loved **her**). *Cataphoric* reference is a forward reference to a noun phrase or clause that will be mentioned later in the text (*Because he loved her, John kissed Mary*).

With substitution, repeated forms, and ellipsis, a constituent of one expression is replaced by a constituent of another (substitution), is repeated (repeated forms), or is omitted (ellipsis). The intended meanings can be reconstructed from the preceding discourse and from world knowledge.

*Will we make it on time?*

1. *I think so* (substitution of *we will make it in time* by *so*).
2. *Yes, we will make it on time* (repeated forms).
3. *If we hurry* (ellipsis: *we will make it on time* is omitted).

With lexical relationships, the type of cohesion is vocabulary driven. Two lexical items are related to each other insofar as they mean the same thing (synonyms) or the opposite thing (antonyms), stand in a superset/subset relationship (hypernym vs. hyponym, respectively), or have some other conceptual relationship.

*The tax collector sent another letter.*

1. *I don't like **this** guy.*
2. ***That** monster never leaves us alone.*

3. *The sweetheart keeps asking for more each year.*

With comparison, a constituent in an expression is compared with a constituent in another expression (*I like the oak cabinet. The pine desk is much nicer*).

Discourse psychologists have extensively investigated five cohesion and coherence relations that are related to the previously mentioned seven: referential, spatial, causal, temporal, and additive relationships. They answer the questions of the who, where, why, when, and what of the events described by the discourse. Explicit markers facilitate the comprehension process.

Several classifications of relations have been proposed. Some focus only on the closed set of grammar-driven cohesion, whereas others include vocabulary-driven relations and relations that are reconstructed from world knowledge and the unique situation conveyed in the text. Those classifications that go beyond grammar consider the intentions of the producer of the communicative event. In written monologic discourse, comprehenders can rely on linguistic cues to a great extent (although not completely). However, in oral dialogic discourse, there are conversational cues that go well beyond print, such as intonation, gestures, and the physical environment.

A complete theory of discourse coherence requires a harmonious layering of several levels, including vocabulary, sentence structure, meaning, discourse context, style, and world knowledge. When these levels lack coordination, the coherence is more difficult. To get the message across, the sender will try to coordinate the levels. The receiver assumes that the sender's message is intended to be well formed and will make every attempt to construct a coherent interpretation.

### Further Reading

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