UB LIS 571 Soergel **Lecture 5.2a, Reading 3**

Semantic relations between propositions

by **Winifred Crombie**
condensed and augmented by **Dagobert Soergel**

Original reference: Crombie, Winifred. *Process and relation in discourse and language learning.* London: Oxford University Press, 1985. Ch. 2, sect. A. Semantic relations between propositions. General semantic relations. (p. 17-28 condensed and examples from 33-36)

Outline of general semantic relations

Temporal	Chronological sequence and Temporal overlap
Spatial	Same for spatial
Matching	Comparison and Contrast
Cause-Effect	General causative, Means - Purpose, Condition - Consequence
Truth and Validity	Affirmation, Denial, Correction
Alternation	Presenting choices
Bonding	Adding propositions, Exemplification, Exception
Paraphrase	Restatement without amplification
Amplification	Give more specifics
Setting/Conduct	Location, Direction, Manner

This taxonomy is not intended to be regarded as definitive. There is no general agreement amongst linguists in terms of specific groupings which would best reflect the significant shared features of the different relations. Indeed, any grouping which is proposed (as in any type of classification) will to a certain extent reflect the individual preoccupation of the taxonomist. In the present case, the grouping of relations is one which I hope will prove useful in the design of language teaching programmes (see Crombie 1985).

In the outline of semantic relations, I have drawn on a number of different sources and have attempted to be as comprehensive as possible. However, readers who . . . consult some of the source material listed in the bibliography will find that researchers in this area may differ both in the methodology employed in the investigation of semantic relations and in the terminology used.

DS:

1 Relate this to the entity-relationship approach and semantic networks.

2 Recognizing these relationships in text is essential for text understanding and extraction of facts. Many of these relationships can be transformed directly into a formal statement in an entity-relationship database.

Temporal relations (corresponding **spatial relations** can be defined)

Chronological sequence	Two events, one of which follows the other in time, past, present, or future. May be expressed in a single clause, as in *A thunderstorm followed the explosion*. Note (DS): This relationship can also exist between pictures, as in a comic strip or pictorial instructions. Necessary, but not sufficient, condition for causal relations,
Temporal overlap	Two events which overlap wholly or partly in time.

Matching relations

Simple comparison	Comparison of two things, events, or abstractions in terms of some particular in respect of which they are *similar*.
Simple contrast	Comparison of two things, events, or abstractions in terms of some particular in respect of which they are *different*. Often indicated by the word *except/exception*.

Cause-effect relations

General causative	Clause B specifies an actual (not hypothetical) event or observation (the cause **C**) which causes (results in) an event or observation (the effect **E**, which is not necessarily intended) specified in clause A. The sequence of clauses may be effect - cause or cause - effect.
a Reason - Result	Clause B gives a reason (cause) *why* a particular result (effect), stated in clause A, came or will come about. In English, the reason clause very often follows the result clause: *A: **E** happened B: because of **C**.*
b Means - Result	Clause B states *how* a result (effect) stated in clause A was/will be or can be achieved. *A: Bill made **E** happen B: by doing **C**.* (**E** is achieved but not necessarily intended.)
c Grounds - Conclusion	Clause A states an effect, clause B concludes the existence of something causing the effect. *A: We observe **E**, B: therefore we conclude **C** exists or happened.*
Purpose - Means	Clause B outlines the action that was/is/will be taken (the cause) with the *intention* of a achieving a particular result stated in clause A. *B: He did **C** A: in order to bring about **E**.* (**E** is intended but not necessarily achieved)
Condition - Consequence	Clause B states a realizable or unrealizable condition or a hypothetical contingency (cause) for an event or observation stated in clause A. *B: If indexing is sloppy, A: searching will be difficult.* Often co-occurs with Means - Purpose or General causative.

Truth and validity

Statement - Affirmation	Clause B affirms the truth of clause A. *A: The earth is round. B: I agree.* *He said the earth is round and I agree.*
Statement - Denial	Clause B denies the truth or validity of clause or proposition A. The denial may be direct (see example B1), or indirect (see B2). Indirect denial involves autonomic substitution of some word or expression (*round* antonym *flat*). *A: The earth is round. B1: Not true. B2: It is flat.*
Denial - Correction	Clause A is a denial involving a negated word or expression; in clause B, that negated word or expression is correctively replaced by a non-autonomic substitute. *A: The earth is not a star, B: it is a planet.* Remarks: In the interchange below, A and B1 bear a Statement- Denial relation to one another. Likewise, A and B2 bear a Statement-Denial relation to one another, B2 being, in relation to A, an indirect denial. However, the relationship of B1 to B2 is that of Denial-Correction. *A: The earth is a star.* *B1: No it is not (a star). B2: The earth is a planet*.
Concession - Contra-expectation	Clause A states an inference which would normally be expected to hold; clause B denies the truth of that inference directly (example 1) or indirectly (example 2). *A: Although the seeds were sown, B: the plants failed to grow.* *A: They intended to attack B:but they defended.* Remark: Because Concession-Contra expectation involves the unexpected, it provokes the question *why.* This accounts for the fact that it is often combined, either directly or indirectly, with a General Causative (providing a *reason):* *Although the seeds were sown and nurtured, the plants failed to grow, because a disease had befallen the seeds.*

Alternation relations: Presenting choices

Contrastive Alternation	A choice between two antitheses (alternatives expressed by antonyms). *Lead or follow.*
Supplementary Alternation	Two or more nonantithetical choices. *We could go to Paris or Rome or Rio.*

The bonding relation: Adding propositions

Bonding	A non-elective, non-sequential relation between conjoined or juxtaposed propositions.
a Coupling	The second clause adds at least one new proposition to the first and the clauses are not connected in an elective, a comparative, or a sequential way. *Copper is a good conductor and remains flexible when cold.*
b Contrastive Coupling	Two propositions (or groups of propositions) have the same first terms, one clause has a positive predication, and the other has a negative predication or a predication which has a negative paraphrase. *The two leaders talked about trade but not about human rights.* *The two leaders tried to resolve their differences but failed.*
c Statement - Exemplification	The first clause provides a general statement and the second adds a proposition (or more than one proposition), which is presented as an exemplification of the general statement in the first clause. *Programs to search the Web become more sophisticated. (For example) Web Compass adds synonymous terms to the query for more complete retrieval.* Note (DS): This relationship can also exist between a text element and a picture or audio clip, illustrating again that many of these relationships can be generalized from text to multimedia documents.
d Statement - Exception	Clause A provides a general statement and clause B an exception. *A: Capital gains are subject to tax B: except that a gain from the sale of a house is, under certain circumstances, not taxable.* Remarks: Coupling, like the other types of Bonding, involves informational addition. However, certain of its realizations involve the assertion or implication that the information in the first clause of the relation is inadequate or insufficient on its own (i.e. without the information in the second clause): *You need some high tensile steel, but you need a bunsen burner too.* Constructions such as *not only ... but also, not ... let alone and (not) even,* carry this implication: *The Widget computer is not only the best, (but) it is also the cheapest.* *This student does not qualify for admission, let alone a scholarship.* I shall refer to this type of realization as Rhetorical Coupling.

The paraphrase relation: Restatement without amplification.

Paraphrase	Clause B expresses the same propositional content as clause A but in a different way. May involve a negated antonym (example 2). *A: The A1 computer is the fastest; B: it beats all others in speed.* *A: The Xylon computer is not fast; B: it is slow.* (Compare with Denial- Correction, where the corrective substitute is **not an antonym** of the negated word or expression which it replaces.

The amplification relation: Substitution of a specific word or expression for a general one.

Amplification, general	Clause B explicitly or implicitly repeats the propositional content of clause A, but B adds to A by providing a specification for A's predicate or for one of A's arguments.
a Term Specification	Clause B amplifies the information in clause A by providing a specific term as a substitute for a general one. Note that the general term *may* be implicit (example 2). *A: There is a graphics program that meets all these requirements.* *B: It is NuGraph from Eltronics*. *B: It is NuGraph from Eltronics A: that I bought.* Implicit: I bought some *program*.
b Predicate Specification	Clause B amplifies clause A by specifying the content of A's semantic predicate (such as *knew* or *said*). *A: He **knew** B: that he violated the tax code.* *A: He **said** B: that the truce was uneasy.*
c Term Exemplification	A general term (or a word or phrase which is inclusive) is illustrated with reference to a particular. *Radioactive material, such as Strontium 90, may be carried in the food chain and present a health hazard.* Here: **exemplification of one term of a proposition**. In Statement - Exemplification: **exemplification of a general statement**.

Setting/conduct relations

Event/State - Location	An adverbial gives the location of an event. *The talks were held **in** Oslo.*
Event - Direction	An adverbial outlines the direction of an event. *The meteor is moving **towards** the earth.*
Event - Manner	An adverbial, such as *indiscriminately, with courtesy, accurately*, outlines the manner in which an event was conducted.