

Coordination

A coordination joins two sentence elements, called conjuncts. In a coordinate structure like *cats and dogs* the conjunction coordinates the conjunct *cats* with the conjunct *dogs*. In many languages, conjunctions like *and* or *or* can conjoin words or phrases of virtually every category, under the condition that the categories being conjoined are of the same sort. It might appear as if coordination was a relatively simple phenomenon. However, coordination is notoriously difficult for linguistic theory to define.

Although a wide variety of structures can be conjoined, not all coordinations are acceptable. One of the first generalizations regarding coordination is Ross's Coordinate Structure Constraint (1967). This constraint states that coordination does not allow for asymmetrical constructions. For example, the sentence *This is the man whom Kim likes and Sandy hates Pat*, is unacceptable, because only the first conjunct is relativized. The sentence *This is the man whom Kim likes and Sandy hates* is acceptable, because both conjuncts are relativized.

The Coordinate Structure Constraint might be explained by the requirement that the conjuncts in a coordinate construction must be of the same "sort." This requirement is sometimes referred to as the Law of Coordination of Likes. Linguists are uncertain as to the relationship between 'sort' and syntactic category. The sentence *Pat is stupid and a liar* shows that being of the same syntactic category is too strong a requirement for conjuncts in a coordinate construction, since an adjective phrase (*stupid*) can be conjoined with a noun phrase (*a liar*). It is therefore unclear what it means for two conjuncts to be of the same sort.

Linguists are further concerned with which material is allowed as a conjunct in a coordinate construction. The second example showed conjoined sentences, but coordination is also possible for noun phrases as in *the apples and the pears*, verb phrases like *run fast or jump high* and adjectival phrases such as *rich and very famous* etc. Both sentences and phrases intuitively form meaningful units within a sentence, called constituents, however not all sentence elements can be constituents. Subject and verb do not form a constituent in some frameworks of generative grammar. However, they can occur together as a conjunct in the sentence *Kim bought, and Sandy sold, three paintings yesterday*. The possibility of this “non-constituent coordination” has led a number of linguists to relax the notion of constituency. In categorial grammar, for example, subject and verb can form a constituent. Coordination phenomena can therefore provide a testing ground for even basic theoretical notions such as constituency.

Another important question concerns the way coordination of phrases is interpreted, as phrasal coordination seems strongly related to sentential coordination. The sentence *Kim ran and jumped*, in which two verb phrases are conjoined, has the same interpretation as the coordination *Kim ran and Kim jumped*, in which two sentences are conjoined. The dominant approach in generative syntactic theories indicates that phrasal coordination can be derived from sentential coordination by means of reduction rules. This approach states that *Kim ran and jumped* is the result of a reduction rule having deleted the subject of the second conjunct, *Kim*. Much syntactic research focuses on formulating appropriate reduction rules. This has turned out to be quite difficult due to the potential for phrasal constructions such as *Kim and Sandy are similar*, which lack a sentential source.

The work of Richard Montague in the early 1970s ushered in the method of deriving the interpretation of conjoined phrases directly from their surface form. Semantic explanations of phrasal coordination differ from strictly syntactic ones. In semantic analysis, conjuncts are interpreted as functions that require certain semantic arguments to make a sentence. The semantic type of *ran* requires a subject to yield an interpretable sentence. Because *jumped* is of the same semantic type as *ran*, *ran* and *jumped* can be conjoined according to the Law of Coordination of Likes. If this conjoined verb phrase is applied to the subject *Kim*, the resulting interpretation will be that Kim ran and Kim jumped. Under this semantic approach, the interpretation of phrasal coordination is related to, but not derived from, the interpretation of sentential coordination.

Further, a problem particular to syntactic analysis concerns how to formally represent coordination, as the conjunction structure appears to contradict current models of sentence construction. The term “coordination” implies that the conjuncts are located at the same structural level. However, this view is incompatible with the assumption in generative syntax that syntactic structures are formed by repeatedly unifying two elements at a time. The argument that a conjunction unifies its two conjuncts at the same level entails the conclusion that syntactic structures can unify three elements. Some linguists attempt to remedy this apparent contradiction by suggesting a subordinating structure for coordination, in which the conjunction combines with one conjunct first and the resulting constituent then combines with the other conjunct. Others suggest the hypothesis that both conjuncts basically stand in exactly the same relationship to the conjunction, and that the two conjuncts essentially introduce a third structural dimension.

Although various solutions have been proposed, there is not yet a satisfactory explanation for all of the problems discussed here. Coordination occurs both in phrase structure and sentence structure, but the relationship between the two remains unclear. The role of coordination in sentence construction is also largely undetermined. Coordination therefore remains a phenomenon that is difficult to explain for any formal linguistic theory.

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Further Reading

Goodall, Grant, *Parallel Structures in Syntax*, Cambridge: Cambridge University Press, 1987

Hartmann, Katharina, *Right Node Raising and Gapping: Interface conditions on prosodic deletion*, Philadelphia/Amsterdam: John Benjamins, 2000

Johannessen, Janne Bondi, *Coordination*, New York: Oxford University Press, 1998

Montague, Richard, "The Proper Treatment of Quantification in Ordinary English," in *Approaches to Natural Language: Proceedings of the 1970 Stanford Workshop on Grammar and Semantics*, edited by Jaakko Hintikka, J.M.E. Moravcsik and Patrick Suppes, Dordrecht: Reidel, 1973

Oirsouw, Robert R. van, *The Syntax of Coordination*, London: Croom Helm, 1987

Ross, John Robert, *Constraints on Variables in Syntax*, PhD dissertation MIT, 1967.

Reprinted as *Infinite Syntax!*, Norwood, NJ: Ablex Publishing Corporation, 1986

Steedman, Mark, *The Syntactic Process*, Cambridge, MA: MIT Press, 2000

Winter, Yoad, *Flexible Boolean Semantics: Coordination, Plurality and Scope in Natural*

Language, PhD dissertation Utrecht University, 1998