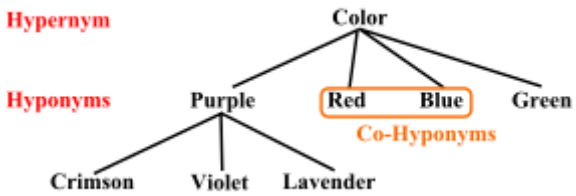
Hyponymy and hypernymy

In linguistics, a **hyponym** (from Greek *hupó*, "under" and *ónoma*, "name") is a word or phrase whose semantic field[1] is included within that of another word, its **hyperonym** or **hypernym** (from Greek *hupér*, "over" and *ónoma*, "name").[2] In simpler terms, a hyponym shares a *type-of* relationship with its hypernym. For example, *pigeon*, *crow*, *eagle* and *seagull* are all hyponyms of *bird* (their hyperonym); which, in turn, is a hyponym of *animal*.[3]



An example of the relationship between hyponyms and hypernym

Contents

Hyponyms and hypernyms

Hyponymy shows the relationship between a generic term (hypernym) and a specific instance of it (hyponym). A hyponym is a word or phrase whose semantic field is more specific than its hypernym. The semantic field of a hypernym, also known as a superordinate, is broader than that of a hyponym. An approach to the relationship between hyponyms and hypernyms is to view a hypernym as consisting of hyponyms. This, however, becomes more difficult with abstract words such as *imagine*, *understand* and *knowledge*. While hyponyms are typically used to refer to nouns, it can also be used on other parts of speech. Like nouns, hypernyms in verbs are words that refer to a broad category of actions. For example, verbs such as *stare*, *gaze*, *view* and *peer* can also be considered hyponyms of the verb *look*, which is their hypernym.

Hypernyms and hyponyms are asymmetric. Hyponymy can be tested by substituting X and Y in the sentence 'X is a kind of Y' and determining if it makes sense.[4] For example, 'A screwdriver is a kind of tool' makes sense but not 'A tool is a kind of screwdriver'

Strictly speaking, the meaning relation between hyponyms and hypernyms applies to lexical items of the same word class (or parts of speech), and holds between senses rather than words. For instance, the word *screwdriver* used in the previous example refers to the tool for turning a screw, and not to the drink made with vodka and orange juice

Hyponymy is a transitive relation, if X is a hyponym of Y, and Y is a hyponym of Z, then X is a hyponym of Z.[5] For example, *violet* is a hyponym of *purple* and *purple* is a hyponym of *color*; therefore *violet* is a hyponym of *color*. In addition, it should be noted that a word can be both a hypernym and a hyponym: for example *purple* is a hyponym of colour but itself is a hypernym of the broad spectrum of shades of purple between the range of *crimson* and *violet*.

The hierarchical structure of semantic fields can be mostly seen in hyponymy. They could be observed from top to bottom, where the higher level is more general and the lower level is more specific. For example, *living things* will be the highest level followed by *plants* and *animals*, and the lowest level may comprise *dog*, *cat* and *wolf*.[6]

Under the relations of hyponymy and incompatibility, taxonomic hierarchical structures too can be formed. It consists of two relations; the first one being exemplified in 'An X is a Y' (simple hyponymy) while the second relation is 'An X is a kind/type of Y'. The second relation is said to be more discriminating and can be classified more specifically under the concept of taxonomy.[7]

Co-hyponyms

If the hypernym Z consists of hyponyms X and Y, X and Y are identified as co-hyponyms. Co-hyponyms are labelled as such when separate hyponyms share the same hypernym but are not hyponyms of one another, unless they happen to be synonymous.[4] For example, *screwdriver*, *scissors*, *knife*, and *hammer* are all co-hyponyms of one another and hyponyms of *tool*, but not hyponyms of one another: *'A hammer is a type of knife' is false.

Co-hyponyms are often but not always related to one another by the relation of incompatibility. For example, *apple*, *peach* and *plum* are co-hyponyms of *fruit*. However, an *apple* is not a *peach*, which is also not a *plum*. Thus, they are incompatible. Nevertheless, co-hyponyms are not necessarily incompatible in all senses. A *queen* and *mother* are both hyponyms of *woman* but there is nothing preventing the *queen* from being a *mother*.[8] This shows that compatibility may be relevant.

Usage

Computer science often terms this relationship an "is-a" relationship. For example, the phrase 'Red is-a colour' can be used to describe the hyponymic relationship between *red* and *colour*.

Hyponymy is the most frequently encoded relation among synsets used in lexical databases such as WordNet. These semantic relations can also be used to compare semantic similarity by judging the distance between two synsets and to analyse Anaphora.

As a hypernym can be understood as a more general word than its hyponym, the relation is used in semantic compression by generalization to reduce a level of specialization.

The notion of hyponymy is particularly relevant to language translation, as hyponyms are very common across languages. For example, in Japanese the word for older brother is *ani* (兄), and the word for younger brother is *otōto* (弟). An English-to-Japanese translator presented with a phrase containing the English word *brother* would have to choose which Japanese word equivalent to use. This would be difficult, because abstract information (such as the speakers' relative ages) is often not available during machine translation.

See also

- Blanket terminology
- Contrast set
- Is-a
- Genus proximum
- Meronymy
- -onym
- Subcategory
- Synonym
- Taxonomy
- Umbrella term
- WordNet (a semantic lexicon for the English language, which puts words in semantic relations to each other, mainly by using the concepts *hypernym* and *hyponym*)

References

1. Brinton, Laurel J. (2000). *The Structure of Modern English: A Linguistic Introduction* (Illustrated ed.). John Benjamins Publishing Company. p. 112. ISBN 978-90-272-2567-2

2. Stede, Manfred (June 2000). "The hyperonym problem revisited: Conceptual and lexical hierarchies in language generation - W00-1413" (http://aclweb.org/anthology//W/W00/W00-1413.pdf) (PDF). Association for Computational Linguistics. pp. 93–99. doi:10.3115/1118253.1118267 (https://doi.org/10.3115%2F1118253.1118267). Retrieved 5 January 2014.
3. Fromkin, Victoria; Robert, Rodman (1998). *Introduction to Language* (6th ed.). Fort Worth: Harcourt Brace College Publishers. ISBN 0-03-018682-X.
4. Maienborn, Claudia; von Heusinger, Klaus; Portner, Paul (eds.) (2011). *Semantics: An International Handbook of Natural Language Meaning* Berlin: De Gruyter Mouton. ISBN 978-3-11-018470-9
5. Lyons, John (1977). *Semantics*. Cambridge University Press. ISBN 978-0-52-129165-1
6. Gao, Chunming; Xu, Bin (November 2013). "The Application of Semantic Field Theory to English Vocabulary Learning" (http://ojs.academypublisher.com/index.php/tpls/article/viewFile/tpls031120302035/8042) *Theory and Practice in Language studies* **3** (11): 2030–2035. Retrieved 6 October 2014.
7. Green, Rebecca; Bean, Carol A.; Sung, Hyon Myaeng (2002). *The Semantics of Relationships: An Interdisciplinary Perspective* (https://books.google.com/books?id=JgplkZbZ2zwC&lpg=PP1&pg=PA3#v=onepage&q&f=false) Netherlands: Kluwer Academic Publishers. p. 12. Retrieved 2014-10-17.
8. Cruse, D. A. (2004). *Meaning in Language: An Introduction to Semantics and Pragmatics* (https://web.archive.org/web/20141017101534/http://www.personal.uni-jena.de/~mu65qev/wikolin/images/d/d0/Cruse_ch9.pdf) (PDF) (2 ed.). Oxford University Press. p. 162. Archived from the original (http://www.personal.uni-jena.de/~mu65qev/wikolin/images/d/d0/Cruse_ch9.pdf) (PDF) on 2014-10-17. Retrieved 2014-10-17.

Sources

- Snow, Rion; Daniel Jurafsky; Andrew Y Ng (2004). "Learning syntactic patterns for automatic hypernym discovery" (PDF). *Advances in Neural Information Processing Systems* **17**.
- Hearst, M. (1992). "Automatic acquisition of hyponyms from large text corpora". *Proceedings of 14th International Conference on Computational Linguistics* **2**: 539. doi:10.3115/992133.992154

External links

- Hypernym at Everything2.com

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