

WEBSTERIAN SYNONYM CHAINS

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In Beyond Language (Scribner's, 1967), Dmitri Borgmann presents two synonym chains in "Beauty in Ugliness" on pages 38-9 and 191:

black-dark-obscure-hidden-concealed-snug-comfortable-easy-
simple-pure-white
ugly-offensive-insulting-insolent-proud-lordly-stately-grand-
gorgeous-beautiful

In each chain, each word is alleged to be a synonym of the one immediately preceding or following it, yet the ends of the chain are opposites. He doesn't specify his sources for synonymy, other than "dictionary investigation". The first chain can be constructed using a combination of the Merriam-Webster Second and Third editions, although neither one alone suffices: Webster's Third does not allow black-dark, snug-concealed, or pure-white as synonyms, and Webster's Second does not allow pure-simple, simple-easy, or easy-comfortable (although it does equate the nouns ease and comfort). Some of the links are less than perfect: for instance, Webster's Second lists dark as a synonym of black, but does not list black as a synonym of dark.

The topic of synonym chains is also mentioned in A. K. Dewdney's August 1987 "Computer Recreations" column in Scientific American magazine. He reports work by Ron Hardin, a research scientist at the Murray Hill, New Jersey branch of Bell Telephone Laboratories, who used a digital computer to construct several thousand synonym chains based on The New Collins Thesaurus. Apparently the Collins definition of a synonym is looser than the Websterian one, for Hardin's chains are typically only a few steps long (four to seven for the ten examples given in the article, but the "great majority" are no longer than three).

It is time to introduce a greater degree of exactness and rigor to such investigations. Specifically, it is desirable to restrict a synonym chain to a single dictionary; further, one should take into account that synonym chains are not necessarily reversible, and construct a chain not only leading from Word A to Word B, but a second one leading from Word B to Word A to complete the demonstration of synonymy. We illustrate what can be done by using the Merriam-Webster Collegiate Dictionary, Ninth edition, restricting ourselves to boldface adjectives flush left in the column. Such adjectives have two types of synonyms listed:

- 1) Synonyms introduced at the end of the entry, indented a sin-

gle space and introduced by the italic letters syn. This is followed either by a series of words in small capitals which are in turn separately discussed, or by the word see, followed by a single word in small capitals. These synonyms are always two-way--that is, if Word B is listed after syn under Word A, then Word A is listed after syn under Word B.

- 2) Synonymous cross-references, one or more words in small capitals following a boldface colon. These may appear among the numbered definitions of the boldface adjective. They may be two-way, but most frequently are only one-way--that is, if Word B is a synonymous cross-reference of Word A, word A is probably not a synonymous cross-reference of Word B.

In the following examples, one-way synonyms are indicated by - and two-way ones by =.

true-just=fair=beautiful=pretty-artful-artificial-sham=false
false-unwise-foolish=simple-unconditional-absolute-positive-
real-genuine-true

bad-poor-mean-penurious=stingy=close-secret=furtive=sly=
cunning=clever=good
good=clever=cunning=sly=furtive=secret-ticklish-critical-acute=
sharp-harsh=rough-indelicate=indecorous=improper-
incorrect-wrong-sinful-wicked=evil=bad

light-bright=clever=cunning=sly=furtive=secret-hidden-obscure=dark
dark=obscure=vague-vacant=empty-foolish=simple=easy=light

Several questions immediately present themselves. First, is it possible to construct a single two-way synonym chain between opposites? Second, do the above chains exceed the minimum-length ones? Both questions might profitably be investigated with the aid of a digital computer (Webster's Collegiate, with definitions, is available in machine-readable form).

More generally, one can conceive of a directed network of synonyms, with thousands of entries, of which the chains above are a small part. What two words in such a network are the farthest apart, in the sense that the minimum chain connecting the first word with the second is as long as or longer than any other minimum-length chain connecting any other two words in the network? (These words need not be antonyms, of course.) A computer is essential for answering such a question.

The examples given above are adjective chains, but one can ask similar questions about adverb, noun, or verb chains, together with their directed networks.