What Does Meaning Mean?

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by
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Since this paper needs to deal with bits and pieces of meaning, I will start with a small sample of a finished product. In the last act of The Tempest by William Shakespeare, fifteen-year old Miranda sees the assembled nobles and courtiers of Milan and exclaims: "How beautiful mankind is! O brave new world..." She has grown up isolated, on an island, and until recently her father, Prospero, was the only civilized human she had known. The word "brave", in her speech, means "noble," "wonderful," "handsome."

Prospero knows that there are treacherous villains in the assembled group, and they are not from a new world but rather from the old world of Milan. The phrase "brave new world" could mean "ugly old world" for Prospero or for the audience. There is ironic meaning here. The two opposed meanings are equally valid. Miranda has as much right to believe what her heart tells her as Prospero does to believe what his intellect might tell him.

In 1932, Aldous Huxley expanded the meaning of "Brave New World" by using the phrase as the title of his novel. Perhaps someone giving a lecture today should read the audience its new Miranda right: "You have the right to believe what your heart tells you. Just be aware of your point of view."

If one could fully understand the concept of meaning, one would understand fully what it means to be human. The English word meaning has so many meanings that listing them all would be a truly daunting task. Consider the following examples:

(1) I did not mean to hurt him.	--meaning as intention
(2) A red light means "Stop."	--meaning as symbolism
(3) The French word chien means dog .	--meaning as translation
(4) What do all these footprints mean?	--meaning as significance
(5) Smoke means fire.	--meaning as inference
(6) Salubrious means healthful.	--meaning as synonym

These half dozen examples provide only a glimpse into the complexity of the notion of meaning in just one language: English. If we broaden our analysis to include other languages, the complexity may seem unmanageable. In languages such as Sanskrit, Hindi, and Bengali, the word for meaning (artha) can also mean money or wealth. In these languages, the word for economics is arthashastra (the science of money or wealth).

Despite the bewildering variety of ways in which the concept of meaning can manifest itself, there is the general notion that meaning is what language conveys. Alongside this notion there is also the universal awareness that meaning can be conveyed nonlinguistically through gestures, nonlinguistic sounds, meaningful glances, and so on.

To make the discussion manageable, I will focus on linguistic meaning, even though nonlinguistic meaning may be just as important. When the sun rises and we feel its warmth without necessarily relying on language, we sense the meaning of sunlight in ways that may be shared by nonhuman creatures. Animals also know what the sun's warmth means to them, even though they cannot use human language to express what they feel.

In today's discussion, however, trying to sketch an outline of linguistic meaning will be challenging enough. So in this paper, I will present some models of ways in which human brains carry meaning, and I will also suggest what the foundation of meaning might be. Finally, I will illustrate the theory by examining a specific case decided in March 2002 in United States Court of Appeals for the Federal Circuit.

Words are the primary units of meaning, and in all languages the relationship between the sounds and meaning of a word is arbitrary. All languages contain some onomatopoeic words, but most words have no inherent logical connection between sound and meaning. The sounds in the words blue, green, or red have no inherent connection with the meanings of these colors.

This arbitrariness in the match between sound and meaning gives human language an extraordinary advantage over animal communication. In animal communication, individual cries or utterances are meaningful. The possibility of combining such cries to create large numbers of structures like words does not exist. On the other hand, a human language like English uses 24 consonants and some 9-11 vowels. These 35 individually meaningless sounds give rise to the possibility of endless combinations, each of which can potentially bear meaning. Currently, the largest dictionary of English, The Oxford English Dictionary, has 616,500 entries.

Incidentally, not every combination of sounds is acceptable. In English, for example, no spoken word can start with more than 3 consonants, and if there are are 3 initial consonants in a word, the first one must be s, as in words like strip or splash. Somehow the brain learns all this at a very early age without any formal instruction.

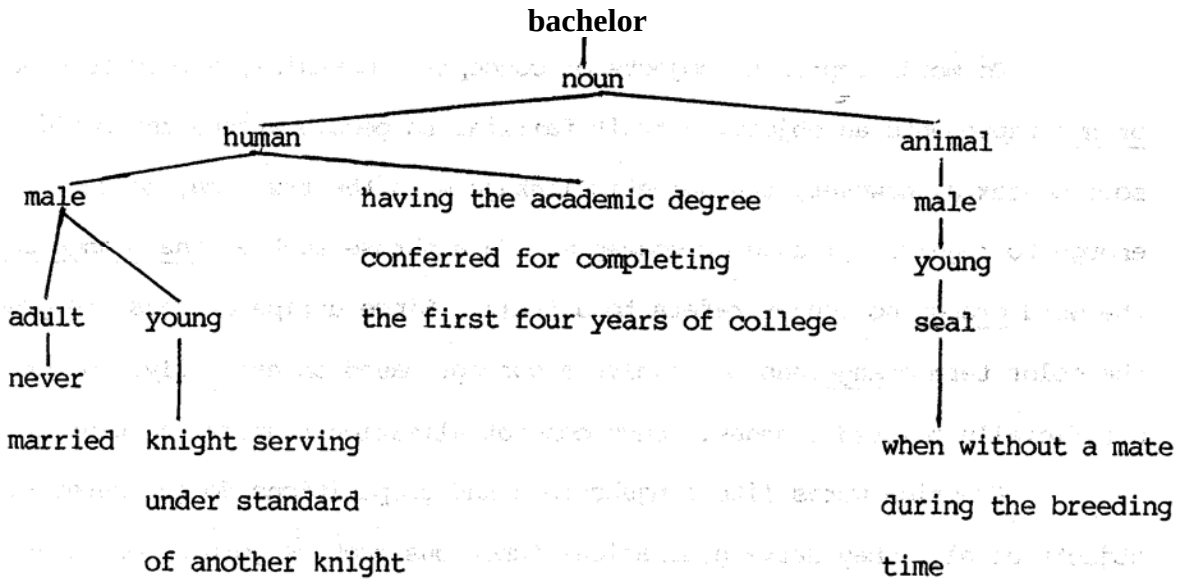
Do words represent objects or concepts? Certainly a word such as orange represents an object, a fruit familiar to people around the world. In some contexts, however, the semantic linkage with the fruit may be remote enough to require reliance on concepts. In a phrase such as the orange shirt, the word orange no longer refers to a fruit. Since unripe oranges are green, the color term orange has to involve a concept based on naturally ripe or artificially colored oranges. Such conceptualization requires complex brains.

Function words like conjunctions and prepositions do not refer to objects at all; they serve grammatical functions such as joining or relating phrases to one another. Abstract words require even higher levels of conceptualization. Consider the following sentences: (7) John saw himself in the mirror. (8) John hurt himself. (9) John discovered himself in the mirror. (10) John is himself again.

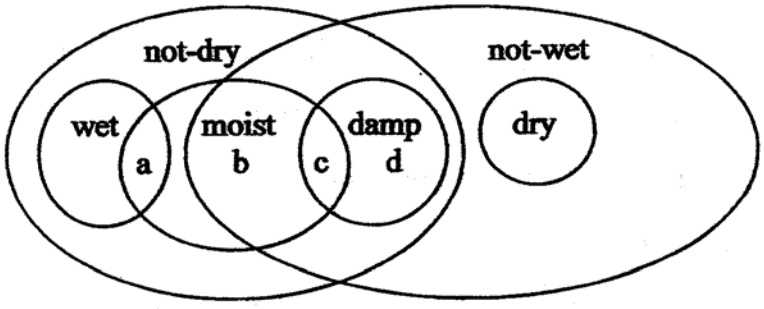
In (7), himself means "his reflection"; in (8), John hurt not "his reflection" but rather some part of his body or mind; in (9), if John is an infant, himself could mean "individual identity", but if John is a handsome adult, it could mean "his potential as a movie star." In (10), himself means "his

normal self." These examples show that the reflexive pronoun himself does not have a fixed meaning that can be looked up in a dictionary. The reflexive word is a blank frame into which meaning is inserted after the mind processes the interaction between the subject and verb of the sentence. Here meaning is more an event than a fixed entity. Once when I was testifying in court, the judge had a chalkboard brought in to enable me to explain to the jury how the word themselves should be interpreted in a disputed article.

Various models are needed for representing different types of meaning. The four meanings of bachelor, for example, can be shown in a semantic class diagram:



When words involve semantic overlapping, a Venn diagram can show the relationships:



Above the level of words, there are phrases, sentences, paragraphs, and narratives. The first two rely on syntax, the last two on patterns of discourse. Syntax consists of phrase-structure rules and transformational rules that combine phrases to produce a sentence or alter or combine sentences. For example, the noun phrase the vandals and the verb phrase completed the destruction of the city can be combined to produce the active sentence The vandals completed the destruction of the city, and this sentence can be converted by the PASSIVE TRANSFORMATION to The destruction of the city was completed by the vandals .

The details of such linguistic processes are learned by all human beings in all societies at a very early age, more or less unconsciously, without any formal instruction. For example, at a very early age, children who speak English learn how to produce (in speech) the correct plural forms of hundreds or thousands of English nouns. There are nine patterns for plural forms of English nouns. I have never met a person without linguistic training who could list these nine forms .Yet every normal speaker of English can instantly produce the correct plural form if the singular form is provided.

The implications of such facts are profound. Similar patterns of automatic functioning are to be found in nonlinguistic spheres, too. We are obviously conscious of much of what we see, hear, smell, taste, and touch every day, but we are not conscious, for example, of how our eyes distinguish colors or how our ears distinguish sounds of various types. All these activities are controlled by the brain in separate modules for vision, hearing, smell, and so on. The brain is modular, and a specific module can continue to function perfectly even though some other module might be destroyed by disease or injury.

The brain is somewhat like a committee, and some committee members may not show up for meetings. We have all heard about autistic individuals, who may have extraordinary skills in music or drawing or in working with numbers but are severely deficient in overall intellectual or social functioning. So in normal brains, the different modules must be coordinated by an overall sense of self. Neurologically this sense of self somehow integrates the various modular functions of the brain, while externally it enables an individual to project a sense of being, an "I" that interacts with other people in society.

Language, too, is modular. People whose brains have been damaged by strokes or accidents may lose control over one or more aspects of language without necessarily losing control over other parts. One person may lose control over phonology and be unable to pronounce words properly, while another may lose control over syntax, the proper arrangement of words. Just as the sense of self enables the mind to integrate the different modules of the brain, meaning integrates the different components of language.

A famous example of a grammatical but meaningless sentence was coined in 1957 by Noam Chomsky: "Colorless green ideas sleep furiously." Intuitively we know that the sentence is syntactically well-formed but devoid of normative meaning. Chomsky is a believer in autonomous syntax, rules of syntax that can be separated from semantic considerations. The sentence is ill-formed precisely because meaning has not been allowed to integrate its various structural levels. Something colorless cannot be green, while ideas are not organic entities that can sleep, and so on.

If meaning is as pervasive in language as the sense of self is in the brain, then we need to ask whether there is a connection between the sense of self and linguistic meaning. It seems linguistic meaning is the most powerful tool available to human beings for preserving and promoting the self. Language was the tool that enabled humans to become far more powerful than all other creatures.

Fox P2 is a gene found in some mammals such as chimpanzees and humans. In humans there were two changes in the gene 100,000-200,000 years ago. This mutation may have enabled

the cognitive capacity of humans to grow rapidly at this time in prehistory. The increased sophistication of tools from this period bears testimony to this growing mental power in our ancestors. We do not know the details of the process that led to linkages between vocal sounds and meaning, but to this day such meanings show patterns that enhance human organization and the primordial quest for power.

Here are two different types of examples of the way meaning in language or the meaning of language is based on established power. There are some 16 ways in which new words are currently being formed in English. The two most prominent are the creation of new compound structures like supermarket or brainwash or trigger-happy, and the use of Greek or Latin morphemes (units of meaning) to create new scientific or technological terms such as astronaut or megalopolis or helicopter. The people who create these new words are intellectually the most powerful people in the English-speaking world. People who have less power (for example, cockney speakers in England) may coin new words, but these words endure in the standard vocabulary only if the upper classes adopt them. Definitions in dictionaries reflect denotations and connotations accepted by people in power, and pronunciations listed are based on speech habits of those who speak Standard English.

On a global political level, we find that even though linguistically all languages are equal, the languages that dominate are the ones spoken by politically and economically powerful people. Thus in the 16th century B.C., Egyptian was the leading language; in the 3rd century B.C., it was Greek; in the 2nd century A.D., it was Latin. Now English dominates the world more than any other language did in earlier times. In all of recorded history, five factors have determined the sociopolitical importance of a language: (I) the economic and political power of the speakers of the language, (2) the number of speakers, (3) the range of distribution of the language over the globe, (4) the amount of good land available for future expansion, (5) the quality and quantity of literature available in the language.

So it seems that in prehistory as well as in history, the driving force behind the creation of meaning has been the quest for power. The passion for power is the stem cell of the soul. A stem cell is a rudimentary cell that replicates repeatedly to provide a continuous source of new cells that differentiate into specialized cells. In similar fashion, the passion for power in the human soul never dies; it just appears in new forms in new ages. The short-range answer to the question "What does meaning mean?" is that meaning is what language conveys, while the long-range answer is that meaning is the linguistic device for acquiring and preserving power.

In addition to the examples cited earlier, a court case decided in 2002 illustrates this theory of meaning. An American company, Banyan Licensing of Florida, had been manufacturing a leg pillow meant to be kept between the thighs of a person for the purpose of keeping the spine in the right position during sleep. A Canadian company, Orthosupport, examined the language of the patent (No. 5,216,771) and decided that the language permitted them to manufacture and sell a similar pillow. Banyan Licensing sued Orthosupport. Banyan Licensing was represented by Alston & Bird, LLP, of Charlotte, North Carolina. I was retained by Alston & Bird as linguistic consultant. Here is the language of the patent that the opposing sides wanted to interpret differently:

"What is claimed is: 1. A cushion device for therapeutic use by humans, said cushion device comprising: an elongated resilient member...having a major longitudinal axis extending through said end section and said medial section. ..wherein said longitudinal axis defines a length of no less than that of a human thigh ..." [underlining added]

The full sentence in the patent contains 284 words. The two sides agreed that the underlined portion was the crucial clause. Orthosupport, aided by a biometrics expert, claimed that the word defines means equals in this context, and since the average length of a human thigh is about 19 inches, the patent only covered leg pillows in which the longitudinal axis was 19" or longer. Their pillow had a longitudinal axis far less than 19", and so they were not in violation of the patent.

I diagramed the entire 284-word sentence (as indicated in the APPENDIX at the end of this paper) and pointed out that the interpretation of the word defines needed to be reconciled with earlier uses of the word in the patent. These earlier uses, I claimed, precede and govern the meaning of the disputed clause. In earlier sections of the patent, the language clearly indicates that the longitudinal axis is not supposed to be more than 9 or 10 inches. Consequently, the crucial clause had to be interpreted as: "wherein said longitudinal axis defines a length of no less than that of [the axis of the cross-section of] a human thigh..."

The bracketed words were "understood" or "taken for granted" by the writer of the patent, just as we take the word "I" for granted at the beginning of the sentence ""Thank you." The purpose of the pillow is to accommodate the thickness of a human thigh, and so the longitudinal axis must be about 9 or 10". True, if the writer of the patent had been very cautious, he or she would have included the bracketed words and thereby saved the two sides hundreds of thousands of dollars in legal expenses.

The United States District Court for the Northern District of Ohio, Western Division, represented by Judge James G. Carr, ruled in favor of Banyan Licensing. Orthosupport appealed, and finally on March 21, 2002, the United States Court of Appeals for the Federal Circuit, before Circuit Judges Schall, Gajarsa, and Linn, denied Orthosupport's motion. Judge Linn quoted the definiton of length from the Oxford English Dictionary and wrote:

> "...the claim term 'length' refers to the 'magnitude of [the thigh] as measured from end to end' along the longitudinal axis of the pillow when in use. The dimension of the thigh along that axis is the dimension of a front to back diameter of the thigh not the dimension from hip to knee While the definition of 'length' in the claim may be ambiguous on its face...,the district court correctly construed the claim. .."

The verdict was gratifying, and the Court's emphasis on the possible ambiguity of the language "on its face" reminded me of a basic question: When meaning is not wholly clear and important issues are at stake, who gets to decide which meaning must be chosen? It seems the answer to this question since the dawn of linguistic meaning has been: the people in power.

APPENDIX

Syntactic Structure of Claim 1