

## **Linguistic relativity**

The linguistic relativity principle (also known as the Sapir-Whorf hypothesis[1]) is the idea that the varying cultural concepts and categories inherent in different languages affect the cognitive classification of the experienced world in such a way that speakers of different languages think and behave differently because of it. Roger Brown has drawn a distinction between weak linguistic relativity, where language limits thought, and strong linguistic relativity, where language determines thought.

The idea that linguistic structure influences the cognition of language users has bearings on the fields of anthropological linguistics, psychology, psycholinguistics, neurolinguistics, cognitive science, linguistic anthropology, sociology of language and philosophy of language, and it has been the subject of extensive studies in all of these fields. The idea of linguistic influences on thought has also captivated the minds of authors and creative artists inspiring numerous ideas in literature, in the creation of artificial languages and even forms of therapy such as neuro-linguistic programming.

The idea was first expressed clearly in the German national romantic thought of the early 19th century where language was seen as the expression of the spirit of a nation, as put particularly by Wilhelm von Humboldt. It was later embraced by figures in the incipient school of American anthropology such as Franz Boas and Edward Sapir. Sapir's student Benjamin Lee Whorf added observations of how he perceived these linguistic differences to have consequences in human cognition and behaviour. Whorf has since been seen as the primary proponent of the principle of linguistic relativity.

Whorf's insistence on the importance of linguistic relativity as a factor in human cognition attracted opposition from many sides. Psychologists Roger Brown and Eric Lenneberg decided to put Whorf's assumptions and assertions to the test. They formulated the principle of linguistic relativity as a testable hypothesis and undertook a series of experiments testing whether traces of linguistic relativity could be determined in the domain of color perception. In the 1960s the idea of linguistic relativity fell out of favor in the academic establishment, since the prevalent paradigm in linguistics and anthropology, personified in Noam Chomsky, stressed the universal nature of human language and cognition. When the 1969 study of Brent Berlin and Paul Kay showed that color terminology is subject to universal semantic constraints, the Sapir-Whorf hypothesis was seen as completely discredited.

From the late 1980s a new school of linguistic relativity scholars, rooted in the advances within cognitive and social linguistics, have examined the effects of differences in linguistic categorization on cognition, finding broad support for the hypothesis in experimental contexts.[2] Effects of linguistic relativity have been shown particularly in the domain of spatial cognition and in the social use of language, but also in the field of color perception. Recent studies have shown that color perception is particularly prone to linguistic relativity effects when processed in the left brain hemisphere, suggesting that this brain half relies more on language than the right one.[3] Currently a balanced view of linguistic relativity is espoused by most linguists holding that language influences certain kinds of cognitive processes in non-trivial ways but that other processes are better seen as subject to universal factors. Current research is focused on exploring the ways in which language influences thought and determining to what extent.[2]

The idea that language and thought are intertwined goes back to the classical civilizations, but in the history of European philosophy the relation was not seen as fundamental. St. Augustine for example held the view that language was merely labels

applied to already existing concepts.[4] Others held the opinion that language was but a veil covering up the eternal truths hiding them from real human experience. For Immanuel Kant, language was but one of several tools used by humans to experience the world. In the late 18th and early 19th century the idea of the existence of different national characters, or "Volksgeister", of different ethnic groups was the moving force behind the German school of national romanticism and the beginning ideologies of ethnic nationalism.

In 1820 Wilhelm von Humboldt connected the study of language to the national romanticist program by proposing the view that language is the very fabric of thought, that is that thoughts are produced as a kind of inner dialog using the same grammar as the thinker's native language.[5] This view was part of a larger picture in which the world view of an ethnic nation, their "Weltanschauung", was seen as being faithfully reflected in the grammar of their language. Von Humboldt argued that languages with an inflectional morphological type, such as German, English and the other Indo-European languages were the most perfect languages and that accordingly this explained the dominance of their speakers over the speakers of less perfect languages.

The German scientist Wilhelm von Humboldt declared in 1820:

The diversity of languages is not a diversity of signs and sounds but a diversity of views of the world.[5]

The idea that some languages were naturally superior to others and that the use of primitive languages maintained their speakers in intellectual poverty was widespread in the early 20th century. The American linguist William Dwight Whitney for example actively strove to eradicate the native American languages arguing that their speakers were savages and would be better off abandoning their languages and learning English and adopting a civilized way of life.[6] The first anthropologist and linguist to challenge this view was Franz Boas who was educated in Germany in the late 19th century where he received his doctorate in physics.[7] While undertaking geographical research in northern Canada he became fascinated with the Inuit people and decided to become an ethnographer. In contrast to Humboldt, Boas always stressed the equal worth of all cultures and languages, and argued that there was no such thing as primitive languages, but that all languages were capable of expressing the same content albeit by widely differing means. Boas saw language as an inseparable part of culture and he was among the first to require of ethnographers to learn the native language of the culture being studied, and to document verbal culture such as myths and legends in the original language.

According to Franz Boas:

It does not seem likely [...] that there is any direct relation between the culture of a tribe and the language they speak, except in so far as the form of the language will be moulded by the state of the culture, but not in so far as a certain state of the culture is conditioned by the morphological traits of the language."[8]

Boas' student Edward Sapir reached back to the Humboldtian idea that languages contained the key to understanding the differing world views of peoples. In his writings he espoused the viewpoint that because of the staggering differences in the grammatical systems of languages no two languages were ever similar enough to allow for perfect translation between them. Sapir also thought because language represented reality differently, it followed that the speakers of different languages would perceive reality differently. According to Edward Sapir:

No two languages are ever sufficiently similar to be considered as representing the same social reality. The worlds in which different societies live are distinct worlds, not merely the same world with different labels attached.[9]

On the other hand, Sapir explicitly rejected pure linguistic determinism, by stating that:

It would be naïve to imagine that any analysis of experience is dependent on pattern expressed in language.

While Sapir never made a point of studying how languages affected the thought processes of their speakers the notion of linguistic relativity lay inherent in his basic understanding of language, and it would be taken up by his student Benjamin Lee Whorf.

### **Benjamin Lee Whorf**

More than any other linguist, Benjamin Lee Whorf has become associated with what he himself called "the principle of linguistic relativity". Instead of merely assuming that language influences the thought and behavior of its speakers (after Humboldt and Sapir) he looked at Native American languages and attempted to account for the ways in which differences in grammatical systems and language use affected the way their speakers perceived the world. Whorf has been criticized by many, often pointing to his 'amateur' status, insinuating that he was unqualified and could thereby be dismissed. However, his not having a degree in linguistics cannot be taken to mean that he was linguistically incompetent. Indeed, John Lucy writes "despite his 'amateur' status, Whorf's work in linguistics was and still is recognized as being of superb professional quality by linguists".[11] Still, detractors such as Eric Lenneberg, Noam Chomsky and Steven Pinker have criticized him for not being sufficiently clear in his formulation of how he meant languages influences thought, and for not providing actual proof of his assumptions. Most of his arguments were in the form of examples that were anecdotal or speculative in nature, and functioned as attempts to show how "exotic" grammatical traits were connected to what was apparently equally exotic worlds of thought. In Whorf's words:

We dissect nature along lines laid down by our native language. The categories and types that we isolate from the world of phenomena we do not find there because they stare every observer in the face; on the contrary, the world is presented in a kaleidoscope flux of impressions which has to be organized by our minds—and this means largely by the linguistic systems of our minds. We cut nature up, organize it into concepts, and ascribe significances as we do, largely because we are parties to an agreement to organize it in this way—an agreement that holds throughout our speech community and is codified in the patterns of our language [...] all observers are not led by the same physical evidence to the same picture of the universe, unless their linguistic backgrounds are similar, or can in some way be calibrated.[12]

Among Whorf's well known examples of linguistic relativity are examples of instances where an indigenous language has several terms for a concept that is only described with one word in English and other European languages (Whorf used the acronym SAE "Standard Average European" to allude to the rather similar grammatical structures of the well-studied European languages in contrast to the much more diverse less studied languages). One of Whorf's examples of this was the supposedly many words for 'snow' in the Inuit language, which has later been shown to be a misrepresentation[13] but also for example how the Hopi language describes water with two different words for drinking water in a container versus a natural body of water. These examples of polysemia served the double purpose of showing that indigenous languages sometimes

made more fine grained semantic distinctions than European languages and that direct translation between two languages, even of seemingly basic concepts like snow or water, is not always possible.

Another example in which Whorf attempted to show that language use affects behavior came from his experience in his day job as a chemical engineer working for an insurance company as a fire inspector [13]. On inspecting a chemical plant he once observed that the plant had two storage rooms for gasoline barrels, one for the full barrels and one for the empty ones. He further noticed that while no employees smoked cigarettes in the room for full barrels no-one minded smoking in the room with empty barrels, although this was potentially much more dangerous due to the highly flammable vapors that still existed in the barrels. He concluded that the use of the word empty in connection to the barrels had led the workers to unconsciously regarding them as harmless, although consciously they were probably aware of the risk of explosion from the vapors. This example was later criticized by Lenneberg [14] as not actually demonstrating the causality between the use of the word empty and the action of smoking, but instead being an example of Circular reasoning. Steven Pinker in the *Language Instinct* ridiculed this example, claiming that this was a failing of human sight rather than language.

Whorf's most elaborate argument for the existence of linguistic relativity regarded what he believed to be a fundamental difference in the understanding of time as a conceptual category among the Hopi.[15] He argued that in contrast to English and other SAE languages, the Hopi language does not treat the flow of time as a row of distinct, countable instances, like "three days" or "five years" but rather as a single process and consequentially it does not have nouns referring to units of time. He proposed that this view of time was fundamental in all aspects of Hopi culture and explained certain Hopi behavioral patterns.

Whorf died in 1941 at age 44 and left behind him a number of unpublished papers. His line of thought was continued by linguists and anthropologists such as Harry Hoijer and Dorothy D. Lee who both continued investigations into the effect of language on habitual thought, and George L. Trager who prepared a number of Whorf's left-behind papers for publishing. Hoijer, who was one of Sapir's students, was also the first to use the term "Sapir-Whorf hypothesis" about the complex of ideas about linguistic relativity expressed in the work of those two linguists.[16] The most important event for the dissemination of Whorf's ideas to a larger public was the publication in 1956 of his major writings on the topic of linguistic relativity in a single volume titled "Language, Thought and Reality" edited by J. B. Carroll.