

Rethinking Linguistic Relativity: Does Language Shape Our Thought?

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People often experience obstacles in translating between languages. No matter how proficient one is in both languages, a certain part of the original meaning is still lost in the translation process. Different languages have different expressions and grammatical rules which limit people from producing the exact same thought, but if that is the case, it may possibly imply that people will eventually think differently when they are habituated to different linguistic norms. This hypothesis was first raised and studied by Edward Sapir and his student Benjamin Lee Whorf in the early nineteenth century (Ahearn, 2012), and is known as linguistic relativity. The most commonly adopted definition of it is that “the language one speaks influences how one perceives and conceptualizes the world” (Everett, 2013, p. 23). However, this hypothesis is not well-received by scientists such as Heider, Malt, and especially the famous linguist Noam Chomsky, who raised the concept of universal grammar and believes in the shared characteristics of all languages around the world (Everett, 2013). Linguistic relativity had received little attention in academia until the 1990s when scientists represented by Levinson conducted a series of experiments to test the possible linguistic influence on a wide range of cognitive domains, including people’s cognition of space (Levinson, 1996), time (Boroditsky, 2000), and color (Franklin, Pilling, & Davies, 2005; Roberson, Davidoff, Davies, & Shapiro, 2005), indicating that language does have certain influence on human thought. Against this backdrop, this paper argues for linguistic relativity: Language could influence people’s thought to some extent. This hypothesis is examined from three perspectives following an order of increasing complexity: sensory perception, object cognition, and thinking process.

Firstly, research has found that language plays a role in the fundamental domain of human perception, which leads to people’s distinct interpretations of sensory information. Roberson et al. (2005) conducted an experiment testing whether language could influence people’s discrimination of color. They prepared two groups of color chips (see Figure 1) with one chip slightly different from the other. In the experiment, two groups of English speakers and Himba speakers (a group of indigenous people living in southern Africa) were shown the same two groups of chips and then asked to pick out one differently colored chip from each group. The two groups of participants behaved differently: English speakers required a shorter amount of time to finish the right task than the left one, whereas for Himba speakers, the result was the opposite. This is due to the different color categorization in their linguistic systems (see Figure 2): The two kinds of green in the left task are perceived as “dumbu” and “burou” respectively by Himba speakers, but the blue and green in the right task are both grouped under the same category “burou”. As a result, this variation in the range of different color terms makes Himba speakers better at differentiating certain colors than English speakers, which serves as compelling evidence for the influence language has on one’s sensory perception. In addition, research has also

shed light on how language influences the way people perceive space. In general, speakers of English have a tendency of using a relative frame of reference, meaning that they would prefer expressions such as “the book is on my left” while speakers of some other languages rely on an absolute frame of reference and they would say “the book is to the north of me” (Everett, 2013, p. 80). In an experiment conducted by Levinson (2003), subjects were presented with a row of three animal toys on a table. They were then asked to rotate 180° and place the same animal toys given by the researcher on another table “exactly as it was” (Ahearn, 2012, p. 104). The order in which the subjects reconstructed the animal toys varied largely in accordance with their native language’s linguistic features, that is, whether their native language tends to use relative or absolute terms to describe spatial information (see Figure 3). This clearly indicates that linguistic norms influence the way people map out space in their minds. The same visual stimuli may be perceived differently, depending on the language one speaks.

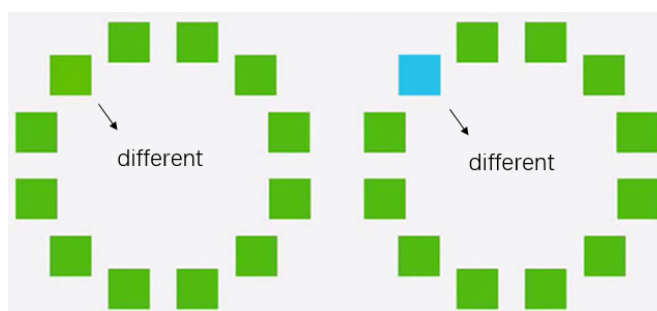


Figure 1. Color tests (from Roberson et al., 2005)

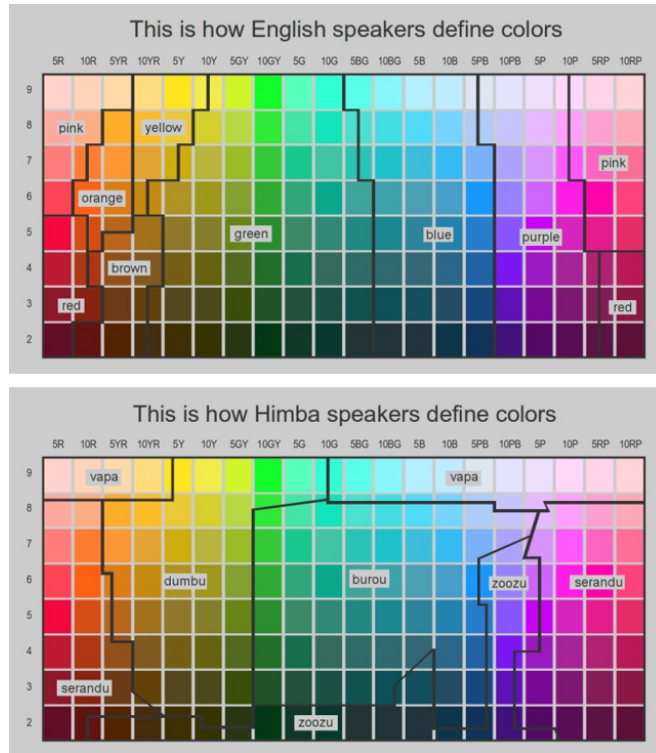


Figure 2. Color categorization of English speakers and Himba speakers (from Roberson et al., 2005)

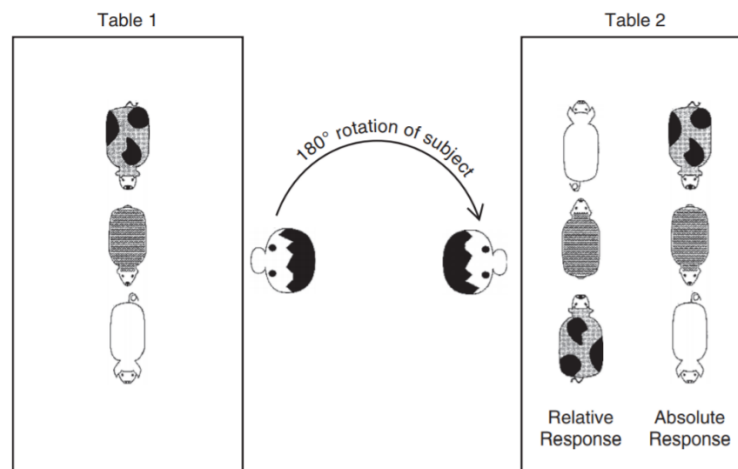


Figure 3. Set-up for experiment involving coordinate systems (from Levinson, 2003)

There are also clear linguistically motivated differences in people's cognition of objects. For example, in many of the world's languages, an object is assigned with a grammatical gender, being linguistically masculine or feminine, and in some cases neuter. Research has found that people's cognition of an object is influenced by the word's grammatical gender, even though the grammatical gender assigned seems arbitrary (Boroditsky, 2009). For instance, when asked to use English adjectives to describe the image of "bridge", the grammar of which is feminine in German and masculine in Spanish, Germans tend to use words such as "beautiful", "elegant", "fragile", and "peaceful" while Spanish speakers more often use "big", "long", "strong", and "sturdy" (Boroditsky, 2009). This suggests that a language can exert clear influence on its

speakers' cognition of concrete objects. The experiment of Lucy (1992) also shows that different languages can facilitate different thinking modes for people's cognition of concrete objects. He observed that English and Yucatec (a Mayan language mainly spoken in Mexico and Belize) have different linguistic measuring systems. In English, whether an object is countable or not largely depends on the shape of it, with objects that have a fixed shape, such as candle, being countable and substance that is indiscrete, such as wax, being uncountable. In comparison, speakers of Yucatec use classifiers which vary according to the material of the object being modified, meaning that wax and candle share the same classifier as they are made of the same material. Then he conducted an experiment to see if these different measuring systems would result in different cognitive foci of the same object, that is, whether English speakers would be more sensitive to the shape of an object while Yucatec speakers would pay more attention to its material. The results showed that when given the same pile of objects in varying shapes and materials, 76.4% of the English speakers grouped them by shape while 23.6% grouped them by material, whereas the majority of the Yucatec speakers (73.6%) grouped them by material instead of shape. This difference hints at some language-related causal relationship in people's cognition towards an object.

In addition, the language one speaks may predispose his or her thinking process, affecting human cognition of complex events or concepts. Spanish and English differ in the way they describe non-intentional events. For example, when witnessing a man accidentally breaking a glass, an English speaker will normally say "He broke a glass" while a Spanish speaker tends to say something like "The glass broke itself" (Everett, 2013). The question then lies in whether or not this linguistic norm will influence the speaker's inner construal of the same event, that is, whether an English speaker will pay extra attention to the agent of a non-intentional event. A study conducted by Fausey and Boroditsky (2011) confirms this assumption. The researchers showed 16 videos depicting an action that was either intentional or accidental to 113 English speakers and 109 Spanish speakers. After watching these videos, the participants were then asked to recall the agents that performed the actions in the 16 videos. The English speakers accurately recalled the agents of the accidental events 15% more accurately than the Spanish speakers whereas for the intentional events, the two groups' accuracy rates were roughly the same. This proves that habitual language patterns serve as an aid to people's thinking and recalling process, which has "potentially serious effect in criminal cases like eyewitness' testimony", as stated by the researchers (Fausey & Boroditsky, 2011, p. 155). Boroditsky, Fuhrman, and McCormick (2011) provide another piece of compelling evidence for the impact of language on the way people think about time. Comparatively speaking, the Chinese language possesses numerous vertical metaphors for time such as "上(up)" used in "上个月(last month)" while English speakers usually use horizontal spatial terms such as "back" in "think back", which offers the assumption that these two groups of speakers may think about time in different directions when they are conceiving of this abstract concept. Boroditsky et al. (2011), in their experiment, pointed directly to the space in front of the participants and then asked a series of time-related questions such as "If here is today, where will you put

tomorrow?”. The results obtained from participants of English monolinguals and Mandarin-English (ME) bilinguals showed remarkable consistency with the linguistically-based predictions (see Figure 4). The bilingual participants with higher Mandarin proficiency used a higher proportion of vertical gestures. In addition, when the testing language was switched to Chinese, the bilingual participants were also more likely to think of time vertically. Both phenomena indicate that language could to some extent predispose people’s thinking process: The first suggests that this linguistic influence is chronic and underlying, and the second suggests that it could also be temporary and sensitive to the linguistic contexts.

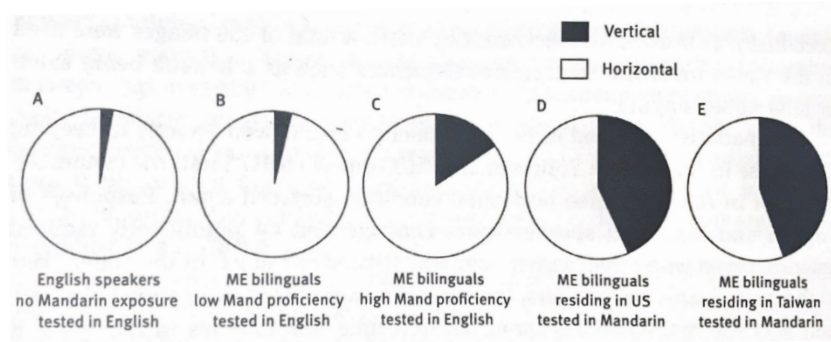


Figure 4. Ratio of vertical and horizontal temporal gestures (from Boroditsky et al., 2011)

The studies reviewed above seem to have confirmed the validity of linguistic relativity, that is, language can exert influence on one’s thought. As shown in this paper, a person’s perception of basic sensory information such as color and space varies according to the linguistic patterns of his or her native language. People’s impression and focus point of a single object differ in line with their linguistic features. In addition, people’s thinking process - the way they conceptualize an event or concept - is also subject to linguistic influence. All of these findings suggest that language may shape our mind subtly but pervasively, ranging from low-level sensory perception to high-level thinking and reasoning. As Whorf (1956, p. 212) stated that “Language is not merely a reproducing instrument for voicing ideas but rather is itself the shaper of ideas, the program and guide for the individual’s mental activity”, the formulation of thought is elusive but worthy of exploration. Further research into this field may help to uncover the thinking mechanism of the human brain as well as deepen our understanding of the cognitive aspect of linguistic anthropology.

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