

Rethinking Principle of Linguistic Relativity from the Perspective of Non-linguistic Behavior

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Abstract: This paper reviews Sapir-Whorf Hypothesis based on Language, Thought and Reality: Selected Writings of Benjamin Lee Whorf. We point out and interpret the flaws and deficiencies in Whorf's theorization, and clarify the misunderstandings. This paper aims to illustrate the relationship between language and thinking from cognitive and social perspectives, and explore how non-linguistic factors affect people's cognition in language.

1. Introduction

Since the theory of linguistic relativity was proposed by Benjamin Lee Whorf, it has been referred to as "Whorfian Hypothesis" or "Sapir-Whorf Hypothesis" and has been widely mentioned in different disciplines, especially in linguistics, philosophy, anthropology and other disciplines. The Verification of this hypothesis has never really ceased, either proven or falsified. [1] [2] Other researchers have pointed out that later generations have misinterpreted the hypothesis.[3] In view of this, we reread Benjamin Lee Whorf's Language, Thought and Reality through the detailed exposition and relevant examples in the collected Works to further understand the connotation of the hypothesis, to find out the existing problems and loopholes in the hypothesis, and on this basis, analyze the contribution and misinterpretation of existing research to the understanding of the connotation of Whorfian Hypothesis, and clarify the relationship between language and thinking from the perspective of non-linguistic behaviors such as cognition and society, and further understand the principle of linguistic relativity.

2. Origin of Principle of Linguistic Relativity

The relationship between language and thinking has been debated for a long time, and no conclusion has been reached yet. As far back as ancient Greece, Plato proposed that "thought is a silent language, and therefore the two are inseparable." Aristotle, on the other hand, believed that language is only the symbol of thought, and thought is not equal to language.[4] Under the influence of universal rationalism and natural logic, the Western linguistic research in the past basically only regarded language as the cloak of thought, and the status of language was low. It was not until the 18th century that German philosopher G. Herder proposed in his essay, Treatise on the Origin of Language, that language and thinking were inseparable, and language was the tool, content and form

of thinking. Language and thought have the same origin and develop in the same way, and they go through the stages of continuous maturity together. The role of language is gradually being valued. Humboldt, a German thinker, put forward a topic similar to the theory of linguistic relativity. The rise of Humboldt's theory triggered the linguistic turn and changed the set that language can only belong to thinking. This view was pushed to the extreme by Sapir and Whorf. Farnz Baos, a famous American linguist, studied the American languages. In the face of many complex and unique languages, he believed that synchronic analysis and description should be made from the actual use of languages. He further found that when describing a language, it is impossible to apply the traditional grammatical framework or other language structures, but only according to the structure of the language, and create new concepts and methods to better describe it, because he believed that describing the special structure of different languages is the most important task of analysis, and the description itself is the purpose. Edward Sapir mentioned in his discussion of the relationship between language and thinking. He holds that people do not only live in the objective world, nor do they only live in the field of social activities, and, are restricted to a large extent by the specific language that acts as their social semantic medium, and are unconsciously established on the basis of the linguistic norms of the society." Benjamin Lee Whorf took the gist of Sapir's thought and summarized and developed it. According to Whorf, the background language system (grammar) of each language is not only a tool for reproducing thoughts, but is a mechanism for forming thoughts, a program and guide for individual mental activity, impression analysis, and mental reserve synthesis. The formation of thought is not a purely rational independent process in the old sense, but a part of a grammar, and it is more or less different from one grammar to another. Whorf published no books during his lifetime, but most of his work was contained in J. Carroll's 1956 collection of Whorf's essays (On Language, Thought and Reality). "Whorf hypothesis" (or "Sapir-Whorf hypothesis"), a concentrated embodiment of Whorf's "language-thinking view", has been widely discussed and debated in the fields of contrastive linguistics and anthropological linguistics. In the preface to On Language, Thought and Reality, Carroll summed up Whorf's "language-thinking" as "linguistic relativity", which he considered to be his most famous contribution. But his lack of a clear definition of linguistic relativity has led some linguistic overviews to take the "Whorf hypothesis" out of context and divide it into "strong" and "weak" forms.[5] After the mid-twentieth century, the potential that the universalism of Chomsky linguistics showed in explaining striking similarities in children's language learning caught the attention of a whole generation of scholars, and the influence of linguistic relativity waned in academia. Since the 1980s, a number of discussions and empirical studies have proposed new approaches to the understanding of the relationship between language and thought, thus arousing further interest. Some researchers has confirmed the principle of linguistic relativity, while other researchers have raised serious doubts about the theory. At the same time, cognitive science develops rapidly, especially the mental space theory of Fauconnier and Turner, and the conceptual metaphor theory of Lakoff and Johnson, which further promotes the research on the relationship between language and thinking.

3. Flaws in Principle of Linguistic Relativity

The principle of linguistic relativity has provided researchers with certain ideas and made certain contributions in clarifying the relationship between language and thinking. However, the theory lacks first-hand materials in the process of argumentation, or the evidence is not sufficient and accurate enough. Whether the case of such imprecision is due to intentional manipulation or inadvertent misuse, we do not know. However, the loopholes in the argument do exist and have been falsified by some researchers, so I will not go into details here. The author believes that there is nothing wrong with Whorf's basic point of view. The main problem is that the process of argument is not rigorous, and

there are logical loopholes.

The main errors of Whorf's theory in logic are: using the difference of language forms to prove the difference of language forms, thus falling into circular argument and lacking of persuasion. In his article "Linguistics as an Exact Science", Whorf pointed out that, in popular language, people who use markedly different grammars will observe differently depending on the grammar they use, and will evaluate similar external observations differently.[6] Whorf spent a lot of time on the structure of language and the lexical system of language in order to find out how people perceive and evaluate the objective world differently under different linguistic systems. He paid little attention to the study of thinking and perceptual processes, and therefore did not involve in non-linguistic fields such as psychology (Carroll 1956b:26). As Lenneberg argues, the theory of linguistic relativity must be directly related to verbal and non-verbal behavior, or it is circular. In short, the basic assumption that language affects non-verbal behavior is derived from the examination of linguistic facts. Thus, the reverse reference to the same or similar linguistic facts does not complement such a hypothesis. We do not dwell here on the loopholes in Whorf's illustrations and materials in his argument for snow, but rather on whether there is a problem with the logic of the argument. Even if there is only one word for snow in the English language (and there are more than one words for snow in the English language, such as slush, blizzard, sleet, hail, and crust), this does not prove the absence or weakness of the ability of native English speakers to recognize the shapes of snow flake.[4] It does not mean that they do not possess the ability to perceive snow in different forms. For another example, the word "uncle" does not correspond to the Chinese words one by one. This is because Chinese conceptualize kinship terms in different ways, but it does not mean that native Chinese speakers cannot understand or express this division in English.

The limitations of a language's lexical system do not limit the perception of nature and do not necessarily limit other non-verbal behaviors. According to Whorf, this limitation of the lexical system may lead to the absence of corresponding non-verbal behaviors. The author believes that language users with different vocabulary systems do have different ways of thinking, and may have different evaluations of objective things. Or differences in language systems may affect the response speed and breadth of thinking in perceiving things, but they will not lead to the absence of non-verbal behaviors such as perception. Whorf mistook correlation for causation, making a logical mistake.

4. Misinterpretation of Principle of Linguistic Relativity

Whorf passed away at an early age, unable to fully establish and explain his own system. Due to insufficient arguments and unclear logic, resulting in misinterpretation of subsequent generations is inevitable. The strong form of language and the weak form of language are the most mentioned by scholars. Scholars tend to think that there are two forms of this hypothesis. One is the strong form: language determines/constrains/dominates thought; Weak form: language affects thinking. But it's not so simple. As noted earlier, the "Whorf hypothesis" itself was generalized by posterity. A thorough reading of Whorf's original work reveals no such distinction. Whorf never explicitly asserted that "language determines thought/culture". What I need to point out here are some misconceptions that have received less attention from recent scholars, but do exist.

The first misunderstanding is that the problem of thinking is the problem of language. In the article "The Relationship between Habitual Thinking, Behavior and Language", Whorf pointed out that there was no definite correlation between culture and language. "The problem of thinking is a problem of language" is a misreading of Whorf, it would be more correct to say "the problem of thinking is a problem of different languages".[6] In other words, language does not restrict the development of creative thinking and specific cultures, but it is impossible to speak without a specific language system, that is, to communicate with others, to be understood and accepted by the language

community, and thus to reach consensus.[6]

In a period of time, the language vocabulary system is basically stable. If this system will limit people's perception of nature, that is to say, perception depends on the language vocabulary system. Without the change of the language vocabulary system, the perception and evaluation of the world and nature will remain unchanged. According to this logic, the limitations of the language vocabulary system limit people's perception of nature and limit other non-verbal behaviors, then where do the various innovations, changes and breakthroughs in the process of natural changes in the long river of human history come from? Isn't the basis of perception on which the rapid development of science and technology depends constrained? What about the endless new words that arise from people's different perceptions of different things in life and changes in life? The "language influences thinking" mentioned in Whorf's hypothesis mainly refers to habitual thinking rather than creative thinking.

5. Relationship Between Language and Thinking from Non-linguistic behavior Perspective

Since Whorf's principle of linguistic relativity is primarily to argue for linguistic forms through linguistic forms, it falls into circular arguments and lacks conviction. To a large extent, it is limited to using language structure and rules to infer people's perceptual ability and thinking ability, which is easy to cause people to misread its conclusions and think that language will affect all people's thinking, thus confusing habitual thinking and creative thinking, expanding the "absolute binding force" of language, leading to logical confusion. In order to clarify the relationship between language and thinking, it is necessary to conduct a more profound discussion from other perspectives beyond the linguistic level.

Many researchers have conducted relevant studies on linguistic relativity from the perspective of language. Some researchers explored the rules of English learning and concept transfer for English beginners from the aspects of vocabulary, syntax, grammatical metaphor, etc.. The research results show that the language misuse of learners is all influenced by the conceptual system. An example is Lucy's structure-centered study, which involves the comparison of number in grammatical structures of different languages.[1] Lucy has compared English with Mayan by number marking, pointing out that in English, numbers must be expressed as singular and plural, while Mayan is optional, and that numbers in English often directly describe subsequent nouns (such as one candle). The numeral classifier must be added after the number in Mayan language, similar to the numeral classifier in Chinese, so as to explore how the use of the concept of single and plural and the concept of classifier in different languages affects the existence of thinking. These studies compare and analyze different linguistic structures (including vocabulary, sentence patterns, grammar, etc.) from the perspective of pure language (linguistic) to reveal the influence of language on the way of thinking. The author believes that the contrast from the perspective of language is prone to a logical paradox. That is, researchers take "language can affect thinking" as a starting point to see how different languages affect thinking. But as bilingual or multilingual speakers themselves, their thinking is already different from that of monolinguals of any language. How can a researcher interpret or analyze a language like a native speaker if they think differently? People's acquisition of different languages has an impact on their thinking and cognition.[7] As proposed by Cook, "multicompetence", which points out that the ability of people who speak two or more languages is different from that of any native speaker, so it must have different effects on thinking.[8] There are some limitations to the study of linguistic relativity at the linguistic level. This paper advocates the use of non-linguistic tasks to explore the relationship between language and thinking. This is because non-verbal tasks can reduce or eliminate the interference of language. We can explore more broadly from cognitive psychology and sociocultural aspects.

5.1. Analysis of Linguistic Relativity from the Cognitive Perspective

From the perspective of cognition, it is believed that although language and thinking are closely related, they are not homologous, with their own development rules. In the process of language acquisition, cognition precedes language, and thinking determines language. In the process of using language, the relationship between language and thinking becomes closer and closer, and they are often inseparable, but there is still thinking that does not need the shell of language. On the issue of the relationship between language and thinking, there are conflicting views with Whorf's hypothesis. However, both cognitive linguistics and Whorf's thought essentially support the view that the different cultures in which languages are rooted influence the internal classification and external manifestation of their language. Since the 1960s, more and more people have held the "cognition" hypothesis, which can be attributed to two reasons. First, the Swiss psychologist Piaget's research on developmental psychology has been paid more and more attention by psycholinguists; Second, the former Soviet Union psychologist Vygotsky's important book *Mind and Language* was translated into English in 1962, which also had an important influence on Western psycholinguists. Some psychological experiments carried out under his influence are conducive to a more comprehensive examination of the relationship between language and thought. These cognitive-psychological aspects of thinking are a kind of non-verbal thinking. Piaget discusses the relationship between language and thinking when he examines the intellectual development of children. He holds that language is neither the source of image thinking nor of operational thinking. On the contrary, the development of language presupposes the pre-development of sensorimotor intelligence. Although Piaget denied that language is the root of thinking and the only tool of thinking, he did not deny the great role that language plays in thinking. Instead, he emphasized that the more the wisdom of people develops and the more advanced stage people's thinking enters, the greater the role that language plays in thinking. Vygotsky discusses the relationship between thought and speech from the perspective of phylogenesis, and points out that the relationship between thought and speech changes in terms of quantity and quality in the process of development. Thought and speech have completely different roots. There is no limit between language and thinking: we can talk or think of the time and place. Both language and thinking can go against the facts: we can speak or think not only of what the objective world would be, but also of what the objective world might be. We can also represent the objective world incorrectly. The same is true of our mental representations. Although some thoughts are difficult to express, there are no words we cannot think of. In other words, language and thinking can influence each other, but there are not too many restrictions on each other. From a cognitive point of view, it seems clearer to analyze the relationship between language and thinking by combining the non-verbal behaviors of language and cognition.

5.2. Analysis of Linguistic Relativity from a Socio-cultural Perspective

In terms of domestic research, there is a lack of relevant empirical research from the sociocultural perspective, and most of them remain at the theoretical level. For example, Yang Chaochun, based on the review of relevant empirical studies in the West, pointed out that if the study of linguistic relativity can be widely carried out in different regions and languages, the synthesis of various results will be more convincing.[9] The linguistic perspective focuses on comparative analysis among different languages; Cognitive psychological perspective focuses on non-verbal tasks; And socio-cultural perspective focuses on ethnographic analysis. Whorf's cultural view is mainly reflected in his thinking on the relationship between language and culture. Like other early American linguists Boas and Sapir, Whorf was also deeply influenced by Humboldt, a German philosopher and linguist. Humboldt pointed out that every human being, no matter what language he speaks, can be regarded as the bearer of a particular worldview. Worldview itself can be formed through language, and each language has

its own worldview.[10] Inheriting Humboldt's thought, Whorf believes that language is a kind of aggregation of cultural phenomena with a particularly tight internal structure. In his article *The Relationship between Habitual Thinking, Behavior and Language*, Whorf argued that language and culture should be considered as a whole. However, Whorf's culture refers more to the social form, and has nothing to do with people's thinking ability, level, and level of social production. To analyze the relationship between language and thinking in isolation from the society and culture of the time is obviously a major drawback. For example, the Eskimos, who live in the ice and snow all year round, have many words for different kinds of snow. This conceptualization of words and grammar is taken for granted by the Eskimos, and although we can perceive the differences, we have some difficulty understanding the specific types of snow because of our cultural reference points. Cognitive linguistics holds that people's experiences and their related contexts and situations are organized into cognitive models that are held in long-term memory. Cognitive models are, of course, not universal, but are determined by the culture in which they are born and raised. The cognitive models shared by all who belong to a community or sub-community are cultural models. People's cognition of things is influenced by the cultural model. For example, in some cultures, when people hear the word "bus", the concepts of "STOP", "school" and "give way" come to mind immediately; However, in other cultural concept, "bus" is only associated with "public transportation", not with specific places or groups of people. It can be seen that for people with different languages, facts are not the same, and this difference is not caused by cognitive ability, but by the cultural model that forms the linguistic background, which leads to multiple understandings of the same fact. People who speak the same language understand each other relatively well, but by no means uniformly. In essence, cognitive linguistics and Whorf support the idea that the different cultures in which languages are rooted influence the internal classification and external manifestation of their language. Whorf pays more attention to the influence of cultural differences on word conceptualization and grammatical organization. If we integrate more factors of cultural background into the thinking of the relationship between language and thinking, and start from the cultural model to explain the causes of language differences, there will be more extensive research space to explore the influence of language on thinking. As for the relationship between language and culture, it remains to be further explored.

6. Conclusion

The relationship between language and mode of thinking is not the relationship between language and thinking itself, not for creative thinking, but for habitual thinking, so the communication and development of science and culture will not be restricted by the characteristics of language. Humboldt once pointed out that "language, on the one hand, as the formal companion of thought, on the other as the material expression of thought, the two functions of language both promote and restrain each other". No one would deny that there is at least a relationship of mutual influence between language and thinking. Despite the flaws in Whorf's argument, his contribution is not to prove that "language determines or influences thought", but to see him explore the relationship between a nation's linguistic forms and its "habitual conceptual system" for interpreting the world, especially the differences between languages' perceptions of the concepts of matter, time and space. We should not take a pessimistic view of "linguistic worldview" and "linguistic determinism", unilaterally emphasizing that human perception, thinking and expression are limited by language, but should be aware of the benefits of language creativity to the development of thinking and human spirit. The relationship between language and thinking can be examined in a more macroscopic context, reflected as a kind of sociolinguistic correlation, and the relationship between language and thinking can be analyzed more accurately. People's thinking has a wide range of similarities in perceptual cognition, social and linguistic psychology, because the similarity of the objective world determines the commonality of

perceptual cognition, and thus leads to the commonality of thinking (that is, concept composition). In other words, the structural characteristics of nature restrict the basic way of thinking of people, so that they have something in common in the basic conceptual category. At the same time, because of the diversity of the objective world in which different language communities live, their ways of thinking are different. Social practice not only affects people's language but also affects people's thinking. Both language and thinking have negative effects on social practice. Language and thinking affect each other, but they are not the only factors that affect each other. In addition to their mutual influence, they are also influenced by the objective world and social practice. Therefore, in the analysis of the relationship between language and thinking, only by placing it in a broader space for multi-dimensional investigation, can we get rid of the limitation of language relativity only staying in the language level.

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