

Supporting and Refuting Whorf: An Analysis of Selected Evidences of the Sapir-Whorf Hypothesis

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Abstract—The significant role language occupies in human lives has led to the question whether language is merely a tool for expressing human thoughts or does it actually shape human thoughts. Over the years many scholars have attempted to find answers for this question. One such influential study led to Sapir-Whorf hypothesis. This paper seeks to answer the question why the Sapir-Whorf Hypothesis, also known as linguistic relativity proposal, still popular in academia even after numerous criticisms against it. The paper incorporates the methodology of a textual analysis of study books and scholarly work based on the topic. Further the paper discusses Whorf's writings and a selection of studies that support and refute the Sapir-Whorf hypothesis. This study is an attempt to shed light on this heavily discussed area of human language and to add in to the existing knowledge on the subject.

Keywords— *language, Sapir-Whorf Hypothesis, linguistic relativity, cognition, human thought*

I. INTRODUCTION

Throughout human history people have searched the answers for the question whether the language shapes the way people think. For a long time it was considered at best untestable and more often simply wrong. Language is a uniquely human gift, central to our experience of being human. Humans have an amazing collection of languages to communicate with each other, each differing from the next in innumerable ways. Over the last century scholars have tried to find answers for the questions; do the languages we speak shape the way we see the world, the way we think, and the way we live our lives? Providing an answer to all these questions a theory came into existence, often

associated with 20th century scholars, linguistic anthropologists Eric Sapir and Benjamin Whorf, the *Sapir-Whorf hypothesis*. The Sapir-Whorf hypothesis, also known as the linguistic relativity hypothesis, refers to the proposal that the particular language one speaks influences the way one thinks about reality. Sapir and Whorf challenged the widely accepted notion that the way an individual perceive the world is simply a relationship between your sensory systems and objective reality. They stated that people around the world speak different languages which are consisting of different grammar, syntax and lexicon. This difference influences the conceptual system that they bring to every single experience they go through. Linguistic relativity stands in close relation to semiotic-level concerns with the general relation of language and thought, and to discourse-level concerns with how patterns of language use in cultural context can affect human thought. Benjamin Lee Whorf studied Hopi; a Native American language spoken in northeastern Arizona. Based on his studies, Whorf claimed that speakers of Hopi and speakers of English see the world differently because of differences in their languages.

Many researchers and scholars carried out studies that led to the conclusion that while language has a vital role in human cognition it does not play a dominant role in shaping human thoughts. Despite these varying viewpoints Sapir-Whorf hypothesis still sparks debates and call for further researches on the subject. This paper addresses the evidences for and against the notion of Whorfian/ relativistic effects on cognition by

referring to the writings of Benjamin Lee Whorf, who is credited with developing the hypothesis. It is hoped that this textual analysis that line up various studies that supports and refute the hypothesis will help put the Sapir-Whorf Hypothesis in perspective and evaluate its tenets against current trends in psycholinguistic research. The second objective of the paper is to assets the reasons for the constant studies carried out in line with the Sapir-Whorf hypothesis despite the controversy surrounding the hypothesis.

Benjamin Whorf raised the long-standing questions such as does language shape thought? Do the differences in the lexicon or grammar have nonlinguistic consequences, such that people who talk differently also think differently?

Answering these questions the theory claims that thinking takes place in a language and that 'the greatest light upon it [...] is thrown by the study of language' [1] and aroused intense interest and attention as well as controversy and criticism. Whorf had no background in psychology and gained recognition in academia primarily as an expert on Maya hieroglyphs and Indian languages but advanced the view that linguistic diversity sparked off cognitive differences in speakers of different languages as a function of continued use of the patterns of their native language for expression. Although many scholars consider the notion of habitual thought to be the cornerstone of Whorf's hypothesis, it did not receive much attention in his writing. In fact, his collected works contain only one article devoted to the subject with only one specific explanation of what the term meant to its author [2]. It states:

By 'habitual thought' and 'thought world' I mean more than simply language, i.e. than the linguistic patterns themselves. I include all the analogical and suggestive value of the patterns [...], and all the give-and-take between language and the culture as a whole, where in is a vast amount that is not linguistic yet shows the shaping influence of language[2].

This suggests that Whorf viewed thought as the linguistic and non-linguistic content of the mind. However there is no mention of frequency of occurrence that could account for the habitual nature of thought. Leading to the detriment of his

theory, Whorf was often inconsistent and imprecise.

II. METHADODOLOGY

This paper is a textual analysis of selected studies done in relation to the Sapir-Whorf hypothesis. The paper focuses on the writings of Benjamin Lee Whorf referring to linguistic relativity and how the selected studies have either supported or refuted the theories put forth by Whorf stating that the language one speaks effects way that person thinks and the way he or she perceive the world.

There have been numerous studies done on the subject matter, but this paper looks into few selected studies which were influential in supporting or rejecting the hypothesis. The studies are selected on their influence on the hypothesis and their popularity. The Selected studies spread over decades, from early 1950's to 2008. This is mainly to provide a sound statement on the way the Whorf hypothesis continues to create waves in the academia for decades. Further this paper extensively analyzes the studies to search reason the popularity Sapir-Whorf hypothesis holds in the academia despite being criticized for decades.

III. LITERATURE REVIEW

Sapir-Whorf hypothesis, also known as linguistic relativity theory, is a popular study area among linguists, anthropologists and psychologists alike. Ever since the theory was put forth there had been many criticisms against it while there were studies that stood in line with the hypothesis supporting the claims.

Many studies that done on to find to what extent the language one speaks influence his or her thoughts resulted in supporting the Whorf's ideas. Many of these studies are done on the terms of colors within English vocabulary. Lants and Steffire as well as Lucy and Shweder performed such studies concluding results in favor of the Whorf hypothesis [3, 4].

One of the first scholars to argue against the hypothesis was Eric Lenenberg. In the article, *A Study in Language and Cognition*, Lenenberg argues that languages are meant to represent events in the world not to determine how they are being expressed [5]. Further Lenenberg claims that Whorf's study on Hopi tribe does not prove what Whorf intended it to prove stating that Whorf's

descriptions of Hopi speakers' temporal terms are translation of the English Language therefore it is not providing a sound argument.

Among the influential studies that posed arguments against the Whorfian hypothesis is *Categorization of Natural Objects*, a paper published by Dr. Eleanor Rosch. As a result of an experimental study she carried out with the Dani tribe in Papua New Guinea, she claimed that language has a minor role in shaping human thoughts let alone determine them [6].

Another argument that came up against the hypothesis was brought forward by Steven Pinker in his book *The Language Instinct*. He not only claims that Whorfian hypothesis is unreasonable he refuted any truth in the hypothesis [7]. Relating to a concept introduced by George Orwell in his famous novel, dystopian fantasy, *1984*, Pinker claims that language does not determine human thoughts. However many scholars have stated that Pinker's rebuttals are not strong enough to refute the Whorf hypothesis entirely. One such statement was made by Daniel Casasanto in his article, *Who's Afraid of the Big Bad Whorf*, states that Pinker raises a confusion rather than presenting a sound argument against the Whorf hypothesis [8].

This paper is heavily influenced by the above mentioned studies. The paper discusses and analysis the findings of selected studies, including the above studies, in order to explore the longevity of the Whorf hypothesis despite numerous criticisms over the last few decades.

IV. DISCUSSION

Whorf's ideas on the influence of language in shaping thoughts have driven disagreement among linguists, anthropologists, and psychologists alike. "Admitting any sympathy for, or even curiosity about, this possibility was tantamount to declaring oneself to be either a simpleton or a lunatic." [9]. However it has also been stated also that the language-and-thought question is dismissed as unimportant, yet in the same breath it is stated that language provides us with most of our concepts [9].

Whorfian theory was widely embraced in the 1950s and 1960s, drawing experimental support from Brown and Lenneberg's studies, which showed a positive relation between the codability of English color terms and people's ability to retain and recognize a given color from a collection of

colors [5]. The idea was that color terms influence the way people partition the color space, and accordingly their perception of color. Other studies done on the same subject matter, on color within English, such as Lantz and Steffler also supports the hypothesis [3]. In support for the Whorf hypothesis Lucy and Shweder performed a color memory test. Children with language to describe different color hues found it easier to recognize the shades. When a language has terms for different shades of color, the perception of that shade is affected. Lucy and Shweder found that color recognition memory was directly affected by the words used to describe them, proving that language does affect thought in some way, but not to the extreme extent that Whorf suggested [4].

However Eric Lenneberg criticized Whorf's examples from an objectivist view of language stating that languages are principally meant to represent events in the real world and that even though languages express these ideas in various ways, the meanings of such expressions and the thoughts of the speaker are equivalent. He further argued that Whorf's English descriptions of a Hopi speaker's view of time were in fact translations of the Hopi concept into English, therefore disproving linguistic relativity [10]. However Whorf's concern was how the habitual use of language influences habitual behavior of humans, rather than translatability of the language. Whorf's point was that while English speakers may be able to understand how a Hopi speaker thinks, they do not think in that way.

Dr. Eleanor Rosch published an influential paper, *Categorization of Natural Objects*, presenting an opposing statement to the Whorfian hypothesis. As a result of field experiments carried out with the Dani tribe of Papua New Guinea, she concluded that when categorizing an everyday object people rely less on abstract definitions of categories than on a comparison of the certain object with what they think to be the object best representing a prototype. She examined that Dani tribe lacks words for all the English colors as their language contains only two color terms dividing all colors into either light or bright category. Rosch explained that the Dani tribe could still categorize objects by colors for which they had no words. She further argued that basic objects have a psychological import that transcends cultural differences and shape show such objects

are mentally represented. Thereby she concluded that people in different cultures tend to categorize objects by using prototypes and language has a very little role to play in this process. The perception of color-and which colors are considered focal-is determined by the biology of human color perception and not by the language learned [6].

The long-standing majority view on the Whorfian hypothesis is summarized in Steven Pinker's bestselling book *The Language Instinct*. Pinker poses a question inspired by George Orwell's dystopian novel *1984*, in which the government seeks to ideologically condition the citizens by making them nameless in the prescribed language, Newspeak. The protagonist of *1984*, Winston Smith describes Newspeak as follows:

[T]he whole aim of Newspeak is to narrow the range of thought? In the end we shall make thought-crime literally impossible, because there will be no words in which to express it. Every concept that can ever be needed will be expressed by exactly one word, with meaning rigidly defined and all its subsidiary meanings rubbed out and forgotten...the process will still be continuing long after you and I are dead. Every year fewer and fewer words, and the range of consciousness always a little smaller [11].

Leading along the Orwellian perspective Pinker questions, does human thought really dependent on language? Do people literally think in the language they speak? In response to these, he claims:

[T]he famous Sapir-Whorf hypothesis of linguistic determinism, stating that people's thoughts are determined by the categories made available by their language, and its weaker version, linguistic relativity, that differences among languages cause differences in the thoughts of their speakers [...] is wrong, all wrong [7].

In his book Pinker not only denounced radical linguistic determinism but also linguistic relativity. Pinker's arguments have long been in the discussion of the Sapir-Whorf hypothesis. However many researches seem to suggest that Pinker's views about the hypothesis is not strong enough to refute the hypothesis entirely. Casasanto points out that Pinker illustrates a confusion that is rampant in relationships between language and thought.

Orwell and Whorf raised two distinct questions: Do we think in language? and does language shape thought? It is possible that language can shape the way people think even if they do not think in language... Evidence in favor of Orwell's idea would also support Whorf's, but evidence against the idea that people think in language does not count against the possibility that language shapes thought [8].

Casasanto further claims that although Orwellian concept and Whorf hypothesis are closely related, they are not related they way Pinker argues. Casasanto states that evidence in favor of Orwell's idea would also support Whorf's, but evidence against the idea that people think in language does not count against the possibility that language shapes human thought. Casasanto's views on the Whorf hypothesis more likely occupy a neutral ground in support to the Whorf hypothesis [8]. Nevertheless he strongly states that regardless of numerous criticisms Whorfian effects can have profound implications for the study of mental representation.

V. CONCLUSION

Sapir and Whorf hypothesized that language and thought are closely related, making statements ranging from the idea that language determines thought, to the idea that language has some bearing on thought, but that connection cannot be determined. Many examples are given from linguists to demonstrate whether they support or reject the hypothesis, with most linguists accepting a weak version of the Sapir-Whorf hypothesis. There have been no significant rebuttals or proofs of the Sapir-Whorf hypothesis, and the original is highly vague, leaving a lot of room for interpretation. This vagueness of the original Sapir-Whorf hypothesis means that no satisfactory conclusions can be drawn, and while some critics, such as Pinker thinks that the hypothesis is no more than a myth, scholars such as Lucy and Shweder support the hypothesis through their studies.

In conclusion it is also worth noting that with the rapid technological advancement researchers are now studying the language-cognition interface in ways that were unimaginable to Sapir, Whorf and their contemporaries. Regardless of the technological support in psycholinguistic studies, Sapir-Whorf hypothesis

still contributes to the discourse. Among all these debates there can be no doubt that, despite many criticisms, the Sapir-Whorf Hypothesis continues to fascinate the academic community, inspiring further research into the unsolved mysteries of the human thoughts and language.

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