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Analysis of the Relationship Between Language and Human's Perception of Reality

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Abstract. As the use of languages grows increasingly salient in modern society, their effects on people's real lives are worthy of discussion. The current version of Sapir-Whorf Hypothesis (or linguistic relativism), that language influences human's perception of the world, is drawing attention. While there is growing evidence supporting this argument, it is under debate whether this influence should be attributed to linguistic aspects or human's universal cognitive system. By reviewing and evaluating empirical studies, the present paper aims to answer whether language has an impact on thoughts, and gives an indication for future research. This paper finally synthesises findings from the studies and concludes that language does influence thoughts, but in a superficial manner, not the manner that is considered as exclusively attributed to linguistic aspects. Thus, the universal approach is favoured, and a potential path for future research of making careful differentiation between linguistic factors and external ones is suggested.

Keywords: Sapir-Whorf Hypothesis, Linguistic Relativism, Universalist

1. Introduction

There has long been a discussion about the Sapir-Whorf Hypothesis in the linguistic and psychological field, even until now. The Hypothesis holds that human's perception of the world is influenced by the language they are using [1-2]. Its indication was firstly that language determines human's worldview; as the research progressed, it is now refined as language influences. This theory is referred to as many terms, including 'weak Sapir-Whorf Hypothesis,' 'linguistic influence' or 'linguistic relativity/relativism.' Here, the last one is adopted in the present paper. There is now a growing number of research on linguistic relativism and supporting it, yet whether it is the language does the influence, or other external factors, remains questionable. In the following, by revisiting literature on this topic, the present paper will synthesise various studies on linguistic relativism. By examining how they are related to the view that humans are influenced by the languages universally, this paper offers an insight into the relationship between language and human's perception, and suggests a possible way of future research: to delve into what is attributed to language alone and human's universal cognitive system.

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2. Current studies on linguistic relativism

At present, the existing literature on linguistic relativism is huge; evidence for the view that language influences human's thought is overwhelmingly presented. While this side is supported, the question regarding whether this influence is universal arises. The following will review and analyze papers on linguistic relativism, and induce a universal perspective.

Peng et al. tested how native speakers of different languages perceive sound, more specifically, pitch [3]. Languages of interest are Chinese Mandarin vs. European (English and German) languages, for the reason that Mandarin uses tone as a grammatical aspect, while the other two do not. It is then reasonable to infer, as they did, that Mandarin speakers use more precise strategies to discriminate pitches. Two experiments were conducted: one compared native speakers of Mandarin with English (both were musicians); the other, Mandarin with German (both were nonmusicians). The results showed a consistent pattern: in the first experiment, the Mandarin group demonstrated a more accurate ability of distinguishing absolute pitches, whereas in the second experiment, the Mandarin group could set a narrower boundary between categories of a continuum of pitches. This study reveals language's influence on the mind.

Davies et al. conducted an experiment on the colour categorising system of language users of either English or Setswana [4]. Given that English has an explicit word system distinguishing the colour blue and green, while Setswana only uses botala standing for both blue and green, a different performance between these language users can be fairly inferred. A group of native speakers of English and those of Setswana were tested in the research. They were asked to choose the oddest one out from a set of given colours, with each set consisting of three different colours. This experiment was done with both control group (where both the languages have the similar word for the options) and experimental group (where Setswana uses different terms for the options from English) The results were worth noting: overall, users of the two languages showed a similar trend of distinguishing colours in both control and experimental group; they had chosen largely the same option. However, in a small yet not negligible scale, the Setswana group behaved in a way that had been likely influenced by their language: they were inclined to choose a purple colour out as the odd one, not green like the English group did, perhaps due to their word botala covers blue and green simultaneously. This research thus reveals the positive relationship between language and thought.

Athanasopoulos and Albright's research would further provide evidence for language's influence on thought [5]. They identified two types of languages: low endpoint and high endpoint. The low endpoint one, which is English-like, would focus on a motion's state when describing it. The high endpoint one, which is Swedish-like, would instead describe an event holistically and therefore involve where a motion ends. The reason for this typology is that English has an overt aspect system that marks a motion regarding its state of being completed/progressing, or not. By contrast, language like Swedish does not. In view of the aspect system of English that causes a tendency for its users to pay special attention to a motion's state to make a grammatical marking, languages like English are therefore considered as preferring a low endpoint, in that only the motion's condition, not where it ends, is taken into account. The research firstly tested 68 native speakers of English's performance on their judgment for a motion. They were equally divided into two groups to be tested. Both groups were required to watch triads of videos (with each consisting of motion of either low and high endpoints, and an intermediate filler) and decide on whether the filler was more similar to the low or high endpoint. After they had chosen, the correct answer was shown. The only difference is that one group's correct answer was English-like (low endpoint), and the other, Swedish-like (high endpoint). The results showed that the English-like group did constantly well, while the Swedish-like group firstly made more mistakes, but then gradually increased. This suggests that the influence of their

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language would shape their thoughts, but this is malleable. Moreover, another new group of native speakers of English was recruited to do a similar experiment of this. Besides the same requirement, they were also required to repeat numbers while watching the videos. The results were that although the English-like group's correct rate was higher than the Swedish-like group, they did not show any progress during the whole experiment, whereas the Swedish-like group gradually increased their correct rate. This indicates that one's behaviour relies on native language's habit (that English-like group showed no improvement), but non-linguistic mechanisms can also have an impact (that Swedish-like group learned the pattern).

3. Universal cognition behind language

On the whole, it seems that language's thought-shaping effects can be confirmed by the evidence given, but there are more things to discover. One might reasonably argue that beyond the language, the universal cognitive system in human is fundamentally working. The following will discuss on the participants' different behaviour among the studies, and make a generalisation.

Considering Peng et al.'s study on pitches, it is the language users of Mandarin who makes a finer, clearer distinction [3]. Even though the phonetic system of Mandarin can be attributed to this ability, it is still unclear whether it is exclusively linguistic. To interpret this finding as the linguistic experience, which prepared them with a fine-tuned, general distinguishing mechanism, also makes sense. Then, it is not sufficient to say it is a linguistic influence, because ultimately the underlying universal cognitive mechanism (although from language) is responsible for the capacity.

When it comes to Davies et al., the universal account is more likely to be supported [4]. No matter what the differences in the English or Setswana language's colour naming system are, the participants showed a congruent pattern in their decisions about the most different colours of each test item, which is the counterevidence against purely linguistic relativism. But one fact is worth discussion: the Setswana group still demonstrated their small but significant inclination to choose differently from the English group, and this inclination is in accordance with their Setswana language.

To address this, it is necessary to refer to Schooler and Engstler-Schooler's study [6]. In their experiment, participants were required to recall colours, and the authors did find a robust influence from language on the participants' views. Those who were asked to describe the colours verbally at first sight showed a worse trend of identifying the exact colour they would see afterwards. Those who did not do this recalled more accurately. The authors then concluded that sometimes when things are spoken out, the words will, in reverse, deceive people, and make them believe in the word description, instead of the actual things. Given the inevitable possibility for the Setswana group to use their language as a clue in Davies et al.'s study, the different performance has a possible explanation [4].

However, this is still not the evidence for a strict linguistic relativism account. The linguistic relativism will hold that the language shapes human's perception of the world. Therefore, for many of the existing literature that tests on whether colour, spatial even sound discrimination, they are testing the linguistic aspects. If there is only the influence from pure words that are taken into consideration, then there is no linguistic aspect. In other words, only the speech, as the external factor, plays in an assistive role, and it is then identical to other clues that help people to change their perception, like body gestures, or salient colours or sounds.

This difference is subtle yet vital: it makes an important difference for people to evaluate the nature of linguistic relativism. The above explanation about speech words, instead of linguistic aspects, sheds light on one essential thing: human's perception is shaped online. Athanasopoulos and

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Albright's research suggests this point, in that the Swedish-like group succeeded in learning the tasks' pattern [5]. Moreover, that this group had been hindered from using the native language's strategy also shows that language is not the only way for human to perceive the world.

The online strategy is widely supported by many other studies. Winawer et al. tested colour perception from another perspective [7]. While English only has the word blue, Russian has siniiy for dark blue and goluboy for light blue, and there is no word standing for general blue like English. They tested on native speakers of both Russian and English on their accuracy for the blue category, and what they found is that while the Russian group did well (especially in tasks that gave similar colours), they did not show this privilege when asked to recall sequences of numbers. Additionally, the English group continued to show no better performance. This suggests that the language contributes to people's perception in two ways: one way that the different words help to make a faster judgment; the other way that once hindered (remembering sequences of numbers), the contribution seems to be lost. Again, the word system itself still cannot be easily identified as a linguistic aspect; to acquire the different words standing for dark or light blue on a large time scale is undifferentiated to acquire a stunt. The role of numbers further supports the account that people use an online strategy to complete tasks; it would be of a similar logic to what the Setswana group could well do, or the people who were tricked by their own words [4,6].

4. Conclusion

The linguistic relativism argues for a position where people's perception of the world is shaped by language. By reviewing the empirical studies above, the present paper makes a fine analysis between linguistic aspects and external factors. It is concluded that human's thought is actually influenced by usage from exterior interactions with the world, through an online process. Most factors that are considered as linguistic are more likely to be the universal skills acquired during learning a language; even though for those that are of language, they seem to be more of speech words than linguistic aspects. However, the role that language itself plays is still worth considering: the language provides sources for human to practice and form their own abilities and skills to think differently, but it is not the ultimate resource. While the universal perspective is proposed in the present paper, it is limited by not extensively exploring different languages, nor testing it empirically. Whether this approach can be applied universally awaits future evidence. For future research, it is suggested that a clear distinction between special, linguistic factors and human's universal cognitive system be made, in order to give a clearer understanding of linguistic relativism.

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