# Unravelling the Cognitive Tapestry: An Exploration of the Interplay between Language and Thought

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**Abstract**
*Language is the primary means through which people convey their thoughts, ideas, emotions, and intentions to others. Effective communication facilitates social interaction, collaboration, and the exchange of information across diverse contexts. It serves as a vehicle for preserving and transmitting cultural heritage from one generation to the next, fostering a sense of belonging and identity among speakers. Language is fundamental in education because it is how knowledge is obtained, shared, and assessed. Input, practice, feedback, and cultural immersion are all components of the dynamic and multidimensional process of language learning, which promotes cognitive growth, linguistic competency, and problem-solving abilities. Delving into the intricate workings of the human mind is a means of unraveling the Cognitive Tapestry. The very language we use influences the way we understand our environment and perceive the ultimate reality we live in. Language and thought are fundamental aspects of cognitive development in humans, each contributing to their ability to communicate, understand others, and navigate the world around them. This paper focuses on the psycholinguistic elements, language, and human thought and the former's inevitable influence on the latter, as a cognitive process with regard to Linguistic relativity hypothesis. Further, this paper provides insights on the close relationship between language and the mental language in thought production using Language of Thought Hypothesis(LOTH).*
**Keywords: Language, Human Thought, Psycholinguistics, Cognitive Process, Linguistic Relativism, Language of Thought Hypothesis (LOTH)**

## Introduction

Language plays a vital role in human lives, helping with understanding, expressing, and forming human connections. Language acquisition happens from a very young age from receptive language that is understanding others to productive language, producing one's language. From babbling to speaking, language acquisition was primarily believed to be based on associative principles and operant conditioning as stated by B.F. Skinner but Noam Chomsky later proposed that human beings innately possess the ability to acquire language. Language acquisition helps in speaking, writing, and communicating thoughts. They help in processing complex

ideas and acquiring complex systems of communication. Languages not only help in enhancing thought production on how the external environment is perceived but this cognitive process also helps humans develop as socially intellectual beings. Language acts as a vehicle for humans to communicate their thoughts and beliefs. It is expressive of not just the individual's personality but also the society's culture. The very base of all these functions is thought formation which is greatly influenced by the language spoken by the individual. Wittgenstein stated that the 'limit of his language is the limit of his world, which is congruous with how influential language can be in controlling one's worldly experiences.

**Cognitive Psychology and Linguistic Relativism**

The thought and language relationship has been debated for a very long period and has evolved from Plato and Aristotle. Plato suggested that humans understand the world with their inherent principles and then use rational thought to create knowledge. Aristotle believed in the opposite of this cognitive process,he believed that people acquire knowledge only through external observation. Plato's views were later substantiated by philosopher Rene Descartes and linguist Noam Chomsky under the notion of 'rationalism'. This relationship was questioned again in the age of enlightenment. The nature of this relation became crucial question of how language influences,how it partitions and classifies the experienced world (Gumperz et al.). Humboldt in his views on comparative linguistics stated that language not only helps in representing existing ideas and concepts but helps in the formation of new concepts as it acts as a 'formative organ of thought'(Mueller-Vollmer and Messling). He viewed different languages as different worlds than as different sounds and signs. "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"(Whorf et al.). People speaking different languages have different worldly views according to Humboldt.

The emergence of cognitive Psychology in the 1950s provided a closer insight into the science of how people think. This branch dealt with internal mental processes, including perception, thinking, memory, attention, language usage, problem-solving, and learning. Psychologist Ulric Neisser defined Cognitive Psychology as the "study of the processes behind the perception, transformation, storage, and recovery of information" (Very well mind). Language and thought are considered to be cognitive processes under this branch of psychology,where language development involves profound understanding and expression of thoughts in written or spoken form. They help in communication and thought formation. Thoughts on the other are fundamental to all cognitive processes. It allows people to integrate all the information received and helps in establishing a connection between external events and internal knowledge. It is done using decision-making, problem-solving and higher reasoning."Human beings do not live in the objective world alone, nor alone in the world of social activity as ordinarily understood but are very much at the mercy of the particular language which has become the medium of expression for their society" (Sapir).

Franz Boas, Father of American anthropologist in his Culture relativity theory stated that all cultures are equal and have to be studied on their terms based on each of their uniqueness. He also believed that an individual's perception of the world lies in the boundaries of the world."Language might shape cognitive processes by providing us with a structured medium to conceptualize the world, giving humans a degree of cognitive flexibility, not found in other animals"(DE CRUZ). Language was used to investigate how culture shapes individuals and governs how they interact with one another. The reflection of the linguistic anthropological view is Sapir-Whorf Hypothesis. Sapir-Whorf Hypothesis was named after American anthropological linguist Edward Sapir (1884–1939) and his student Benjamin Whorf (1897–1941). It is also known as the theory of

linguistic relativity, linguistic relativism, linguistic determinism, the Whorfian hypothesis, and Whorfianism (Nordquist). "If language determines or at very least influences cognition, we expect speakers of different languages to have divergent conceptualizations of the world- as the linguist Whorf put it 'We dissect nature along lines laid out by our native language'" (DE CRUZ). The Whorfian hypothesis states that the semantic structure of a language has the power to shape and limit people's cognition and conception of the world. The hypothesis is also called linguistic relativism and it is approached through stronger and weaker versions. The stronger version suggests language's power to determine a person's reality determining and limiting their cognitive categories. The weaker version influences the thoughts and decisions and this version has more substantial contemplation and empirical evidence from modern linguists than the stronger version.

## Findings

The linguistic relativity hypothesis suggests the inevitable influence of language on how it shapes people's perception of the world. "Linguistic relativity refers to concept that the distinctions encoded in one language are unique to that language alone; that is, the cognitive processes that are determined are different for different languages. Therefore, speakers of different languages are said to think in different ways" (Li). For Example, Mandarin Chinese does not have the concept of past, present, and future. English speakers view time from a horizontal perspective where it is said "Don't get ahead of yourself" or "I am running late". Mandarin speakers can understand this concept of time but they view time in a vertical sense where the past is said as 'up' and the future is seen as 'down'. The perspective of time differs for English-speaking and mandarin Chinese speaking people for the English have a more relaxed view while the mandarin community has a radical view of time.

Lera Boroditsky, an American Cognitive Psychologist stated an example from the Kuuk Thaayore people, an aboriginal community in Australia, who do not use words 'left' or 'right'. They use only cardinal directions, North, south, east, and west. Animate to inanimate objects are treated only with cardinal directions. A cup is asked to be moved in the southeast and northwest direction. These people have a clear sense of orientation and are very much oriented to their geography hence they can survive in any unfamiliar places with this sense of cardinal directions. "They do this better than folks who live in the same environments but do not speak such languages and in fact better than scientists thought humans ever could. The requirements of their languages enforce and train this cognitive prowess"(Boroditsky). These groups of people also treat time much differently. An English speaker would arrange anything progressive from the past to the future from left to right, whichever direction they turn to. But people from the Kuuk Thaayore community would do it in the east to west direction. Their sense of time was based on landscape. Boroditsky analyses on how self-centric it was for the English -speaking community to arrange a time as per their direction of the body when, people from this community fundamentally had a different sense of time-based on the landscape. Because of their native tongue, different groups of people have varying levels of cognitive ability.

Some languages have words for a wide range of colours while some do not. The English language describes various shades of blue under the label 'blue' while Russians have different names for dark (goluboy) and light blue(Siniy). When the experiment was conducted between Russians and English, the Russians were faster to make the distinction between the colours. When their brains were observed the brain of the Russians had a surprised reaction when making the categorical differentiation across boundaries, while this reaction was missing in the English speakers (Boroditsky). There is a categorical differentiation because of the way they acquired language since the development of verbal cognitive sense. The very same differentiation cannot be

seen in native English speakers as their language acquisition does not have a predominant influence on this categorical differentiation of colors since 'blue' is the collective name for all shades of blue as processed cognitively during language acquisition. "It is remarkable to think that even the most fundamental perceptual mechanisms, such as those involved in the perception of colours, can be influenced by the environment, including culture and language"(Ozgen).

English treats time in a sense of 'shorter' and 'longer' duration while Japanese people treat it in a sense of 'little' and 'more'. The English language employs pronouns in sentences, where people state that 'I went to the park yesterday' while it can also be stated as 'went to the park yesterday. It becomes a grammatically incorrect sentence but in Japanese pronouns 'I' and 'you' are always dropped out of the sentence. This is said to have created a clear sense of differentiation between 'self' and 'others' in their culture enhancing relationships between people, especially between employers and employees. Dropping personal pronouns while speaking is said to have a direct impact on the cognitive thinking of people while boosting cultural relationships.

Another distinct example is grammatical genders, where the language employs gender to identify nouns. Every noun is attributed a gender, namely masculine or feminine."Grammatical gender is an important syntactic phenomenon which can affect the semantic level of processing and various cognitive processes"(Maciuszek et al.). The Word 'Key' is treated as grammatically masculine in German while it is grammatically feminine in Spanish.'Sun' is feminine in German and masculine in Spanish neutral in Polish, while the 'moon' is treated as feminine in Spanish and masculine in German. This grammatical gender attribution to each noun does have a perceptible influence on people's thought processes. German speakers are more likely to state that the moon is strong and tough to survive the darkness, while the sun is beautifully yellow, bright, and elegant. They tend to attribute stereotypical feminine and masculine characteristics to each of the nouns through which the real object, in reality, is viewed.

In addition to experiencing events through the senses, i.e. by silently watching them unfold in front of our eyes, we often experience them also through language, i.e. by describing them as they happen, or have happened, or by listening to others talking about events. (Santin et al.). Language can influence the way events are viewed, a person accidentally breaking a vase is stated as 'He/ she broke the vase'. But in languages like Spanish, it is stated as the 'vase broke' or the 'vase broke itself". The intention and emphasis is on the accidental nature of the event. It is completely normal in English to use 'He/She broke the vase', while there is a completely different sentence structure in Spanish 'the vase broke itself'. Boroditsky adds another example of how it is quite easy for people to say that they broke their arm that sounds little insane but that's how it is structured semantically. People speaking different languages pay attention to different things based on their language perception. English speakers would remember who did it while the Spanish speaker is more likely to remember it as an accident understanding the intention behind it ("How Language Shapes the Way We Think", Lera Boroditsky). It is one event but interpreted differently by two people from language backgrounds. This has consequences based on the language used. "When people actively described events, memory performance was better overall as compared to when participants did not use language during encoding"(Santin et al.). It has implications on how a person is blamed and punished even though the eyewitness is different. Language has the power to impulsively influence a person's thoughts guiding the very reasoning abilities about events.

**Application of Language of Though Hypothesis**

There is more empirical evidence of linguistic relativity on how the mind perceives language. The language of thought Hypothesis states that thinking occurs in a mental language called 'mentalese'.Language of Thought Hypothesis (LOTH) presented by the American philosopher,

Jerry Fodor in The Language of Thought in 1975 is considered to be one of the best empirical psychological analyses that postulate mentalese (Rescorla). The mental language contains, beliefs, desires, and opinions, that are called 'Propositional Attitudes' and contain intentionality or aboutness that is the subject matter. This state is called an intentional state. Russell relates propositional attitudes to 'propositions', abstract identities that determine truth-condition. Fodor's theory places mental representations in the center, they are semantic properties like denotation, meaning, and truth condition. For example, a sentence is believed or intended in relation to the mental representation, whose meaning denotes the sentence. The speaker believes in the sentence if there is a mental representation denoting the meaning of the sentence. Mental representation means the sentence hence denoting the meaning.

Applying this theory to the above examples, English and Mandarin Chinese speakers believe in the horizontal and vertical sense of time because they believe in the mental representation created by the respective perception of timing and the meaning it creates through the representation. In the same way, applying it to Boroditsky's example, the kuuk Thaayorre community's language that does not have words like 'left' and 'right'. They believe only in the cardinal directions like north, south, east, and west. "Propositional attitudes have intentionality or aboutness: they are about a subject matter. For that reason, they are often called intentional states" (Rescorla). They believe in cardinal directions because their intentional language states and the provision they provide. The respective language denoting the cardinal directions creates mental representation in the form of mentalese depicting directions denoting only the meaning of cardinal directions.

The very attribution of gender to nouns is the influence of language. The gender connotations of nouns do arise from grammar that is language. These grammatical gender nouns create the attributed (masculine or feminine) mental representation staying true to the meaning of noun (language). The belief of Sun being masculine and moon being feminine in German is because of the mental representation it creates through language.

In another instance language has the power to influence events and narrations. "The mental representations that are the direct "objects" of attitudes are structurally complex symbols whose complexity lends itself to a syntactic and semantic analysis"(Rescorla).The sentence 'He/she broke the vase' creates a mental representation that is true of the sentence. This syntactical structure represents the direct object of the speaker's mental attitude. Even though the vase was broken accidentally, the sentence creates a mental picture creating an implicative tone of blaming the person. While in Spanish it is said that 'the vase broke itself', the emphasis lays on the intention of an accident. Here the mental representation denotes the accidental nature without the implication of any person involved. The mental representation means the very sentence spoken denoting its meaning as the ultimate truth. Language has the power not only to create mental representation but has the potential to influence people's beliefs and truths.

**Conclusion**

This psycholinguistic study between mind (thoughts) and language was done to determine the power of language to influence thoughts. Linguistic relativity suggests that language and thought are intertwined in a nested relationship. The limitations of languages are different from the limitations of thought formation and thought process, people inevitably prioritize and think in their native language. Language was thought of as a formative organ of thought and some also believed that language evolved for the very thought production. There are so many languages, such language diversity stands testimonial to the linguistic ingenuity of the human mind. This makes one question the power of human language and its ability to influence the highly complex and intellectual cognitive process of thought formation. There cannot be much thinking

without language and thus language inevitably and ineludibly influences human thoughts shaping their very perception of the reality and world they live in.

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