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THE LANGUAGES WE SPEAK AFFECT OUR PERCEPTIONS OF THE WORLD

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Abstract. The article presents review of studies on interaction between language and thought and the way it influences our understanding of the world. This is an interesting and important new direction for the research on language and thought, as our society becomes increasingly global and has an increased need for clear communication across languages and cultures. With a better understanding of how language and thought interact to influence how we understand and communicate about the world, we may begin to better understand how to communicate across languages and cultures, in ways beyond simple translation, that allow us to understand the various nuances of different languages and cultures. All new research shows us that the languages we speak not only reflect or express our thoughts, but also shape the very thoughts we wish to express. The structures that exist in our languages profoundly shape how we construct reality, and help make us as smart and sophisticated as we are.

Keywords: cognitive abilities, cross-linguistic differences, perceive, gender, multilingual.

1. INTRODUCTION

New cognitive research suggests that language profoundly influences the way people see the world.

Do the languages we speak shape the way we think? Do they merely express thoughts, or do the structures in languages (without our knowledge or consent) shape the very thoughts we wish to express? Do English, Spanish, Ukrainian and Japanese speakers end up attending to, understanding, and remembering their experiences differently simply because they speak different languages?

These questions touch on all the major controversies in the study of mind, with important implications for politics, law and religion.

The pioneering linguist Benjamin Whorf (1897–1941) grasped the relationship between human language and human thinking: how language can shape our innermost thoughts. His basic thesis is that our perception of the world and our ways of thinking about it are deeply influenced by the structure of the languages we speak.

Scholars have long wondered whether different languages might impart different cognitive abilities. In recent years empirical evidence for this causal relation has emerged, indicating that one's mother tongue does indeed mold the way one thinks about many aspects of the world, including space and time.

The latest findings also hint that language is part and parcel of many more aspects of thought than scientists had previously realized.

Language is a human gift. When we study language, we are uncovering in part what makes us human. As we uncover how languages and their speakers differ from one another, we discover that human natures too can differ dramatically, depending on the languages we speak. The next steps are to understand the mechanisms through which languages help us construct the incredibly complex knowledge systems we have. Understanding how knowledge is built will allow us to create ideas that go beyond the currently thinkable. This research cuts right to the fundamental questions we all ask about ourselves. How do we come to be the way we are? Why do we think the way we do? An important part of the answer, it turns out, is in the languages we speak.

Of course, just because people talk differently doesn't necessarily mean they think differently. In the past decade, cognitive scientists have begun to measure not just how people talk, but also how they think, asking whether our understanding of even such fundamental domains of experience as space, time and causality could be constructed by language. But on the other hand, if people learn another language, they inadvertently also learn a new way of looking at the world. When bilingual people switch from one language to another, they start thinking differently, too.

Clearly, languages require different things of their speakers. They must attend to and encode strikingly different aspects of the world just so they can use their language properly.

Believers in cross-linguistic differences counter that everyone does not pay attention to the same things: if everyone did, one might think it would be easy to learn to speak other languages. Unfortunately, learning a new language (especially one not closely related to those you know) is never easy; it seems to require paying attention to a new set of distinctions. Whether it's distinguishing modes of being in Spanish, evidentiality in Turkish, or aspect in Ukrainian, learning to speak these languages requires something more than just learning vocabulary: it requires paying attention to the right things in the world so that you have the correct information to include in what you say.

2. ANALYSIS AND DISCUSSION

Current research examining the relationship between language and thought no longer ask the question of whether language determines thought, but rather, focus on the ways in which language influences thought, or vice versa (Boroditsky, 2003). This new focus is aptly referred to as *Linguistic Relativity*, and much research has been conducted since Whorf's time to investigate the effects of linguistic relativity. Researchers in psychology, linguistics, anthropology, and cognitive science have asked several types of questions to investigate how language affects thought or thought affects language. The following are a few of the most popular questions asked in this area of research.

Some studies have proved how languages shape the way we think about space, time, colors, and objects. Other studies have found effects of language on how people construe events, reason about causality, keep track of number, understand material substance, perceive and experience emotion, reason about other people's minds, choose to take risks, and even in the way they choose professions and spouses Taken together, these results show that linguistic processes are pervasive in most fundamental domains of thought, unconsciously shaping us from the nuts and bolts of cognition and perception to our loftiest abstract notions and major life decisions. Language is central to our experience of being human, and the languages we speak profoundly shape the way we think, the way we see the world, the way we live our lives.

A few examples of csross-lingustic differences.

Do speakers of different languages talk about time differently?

Even basic aspects of time perception can be affected by language. For example, English speakers prefer to talk about duration in terms of length (e.g., "That was a short talk," "The meeting didn't take long"), while Spanish and Greek speakers prefer to talk about time in terms of amount, relying more on words like "much" "big", and "little" rather than "short" and "long" Theresearch into such basic cognitive

abilities as estimating duration shows that speakers of different languages differ in ways predicted by the patterns of metaphors in their language. (For example, when asked to estimate duration, English speakers are more likely to be confused by distance information, estimating that a line of greater length remains on the test screen for a longer period of time, whereas Greek speakers are more likely to be confused by amount, estimating that a container that is fuller remains longer on the screen.)

In English, people most commonly use words referring to front vs. back to talk about the future vs. the past. They talk about certain people as being *ahead of their time*; they *look forward* to meeting a friend for lunch tomorrow; they *fall behind* schedule; and they think about going *back in time*. In contrast, speakers of other languages, such as Mandarin Chinese, use two types of time metaphors: (1) front vs. back metaphors and (2) up vs. down metaphors. Mandarin Chinese speakers use front vs. back metaphors in ways similar to English speakers; the up vs. down metaphors are reserved for talking about the order of events. In these up vs. down metaphors, *up* refers to earlier events and *down* refers to later events. Boroditsky (2001) examined whether speakers of English and speakers of Mandarin Chinese think about time in different ways. Her studies showed that English speakers were faster to correctly answer questions such as, "Does March come before April?" after seeing a row of items organized horizontally; on the other hand, Mandarin Chinese speakers were faster at correctly answering the same questions after seeing a column of items organized vertically. What these data suggest is that speakers of different languages think about time more easily when they are primed to think in the direction indicated by the time metaphors used in their language. Boroditsky thus argues that language shapes how speakers of different languages conceptualize time.

Do speakers of different languages talk about space differently?

Speakers of English and Dutch use relative spatial terms to describe space (e.g., left, right, front, back). In contrast, speakers of Tzeltal (a Mayan language spoken in Mexico) use absolute references to describe space (i.e. uphill, downhill [corresponds roughly to English south/north directions]). A study by Levinson (1996) examined whether these linguistic differences between Dutch and Tzeltal influence how speakers of these languages conceptualize space. In this study, speakers of Dutch and Tzeltal were shown sets of arrows on two different occasions. On the first occasion, they saw two arrows pointing in the same direction (e.g., two arrows pointing right/north); the participants were then rotated 180 degrees to be shown another pair of arrows: one of which pointed in the same relative direction as the arrows from the first occasion (e.g., right [the absolute direction being south]), and the other pointed in the same absolute direction as the arrows from the first occasion (e.g., north [the relative direction being left]). What Levinson found when asking Dutch and Tzeltal speakers to identify the arrow that was "like the [arrow] that they saw before," Dutch speakers selected the arrow that was pointing in the same relative direction (e.g., the one pointing right [the absolute direction being south]), while Tzeltal speakers selected the arrow that was pointing in the same absolute direction (e.g., north [the relative direction being left]). Thus, Levinson concludes that Dutch and Tzeltal speakers appear to be influenced by their respective native languages in understanding spatial orientation.

Do speakers of different languages categorize objects in different ways?

Languages such as Spanish, French, and German have what is called grammatical gender, where words (especially nouns) are assigned gender. For example, in Spanish, the word for *apple* is feminine, whereas the word for *dog* is masculine. Other languages such as English or Japanese do not assign gender to words and therefore do not have grammatical gender. Researchers have thus asked whether speakers of grammatically gendered languages categorize objects in different ways from speakers of languages without grammatical gender. Sera, Berge, and del Castillo Pintado (1994) examined this question, by asking English- and Spanish-speaking children and adults to assign a female or male voice to various objects. Their study revealed that Spanish-speakers assigned gendered voices to the objects in ways that matched the Spanish grammatical gender of the word for the object (e.g., an apple would be assigned a woman's voice because the word for *apple* in Spanish is feminine). In contrast, English-speakers assigned gendered voices to all the objects at random. This study thus provides evidence in support of the idea that language influences how speakers categorize objects.

Unlike English, most European languages assign a gender (feminine, masculine, or neuter) to almost every single noun. There is little relation between this so called grammatical gender and the biological gender.

What it means for a language to have grammatical gender is that words belonging to different genders get treated differently grammatically and words belonging to the same grammatical gender get treated the same grammatically. Languages can require speakers to change pronouns, adjective and verb endings, possessives, numerals, and so on, depending on the noun's gender. For example, to say something like "my watch was old" in Ukrainian (mij hodynnyk buv staryj), you'd need to make every word in the sentence agree in gender with "watch" (krislo), which is masculine in Ukrainian. So you'd use the masculine form of "my," "was," and "old." These are the same forms you'd use in speaking of a biological male, as in "my grandfather was old." If, instead of speaking of a chair, you were speaking of a book (knyha), which is feminine in Ukrainian , or about your grandmother, you would use the feminine form of "my," "was," and "old."

When a noun describes a woman or a female animal, they are usually a she, e.g. die Frau (she-woman), la chatte (she-cat), when it describes a man or a male animal, it is usually a he, e.g. der Mann (he-man), le chat (he-cat), but even this rule cannot be taken for granted. For example, das Mädchen means "girl" in German, but it is an 'it' because all German -chen nouns are 'it'; la girafe is a she in french even if you speak about a male giraffe.

Whether a thing is a *she, he*, or *it* is mostly random. A bridge is a she in German (die Brücke) but a he in Spanish (el puente).

Does treating watches as masculine and book as feminine in the grammar make Ukrainian speakers think of watches as being more like men and books as more like women in some way? It turns out that it does. In one study, scientists asked German and Spanish speakers to describe objects having opposite gender assignment in those two languages. The descriptions they gave differed in a way predicted by grammatical gender. For example, when asked to describe a "key" — a word that is masculine in German and feminine in Spanish — the German speakers were more likely to use words like "hard," "heavy," "jagged," "metal," "serrated," and "useful," whereas Spanish speakers were more likely to say "golden," "intricate," "little," "lovely," "shiny," and "tiny." To describe a "bridge," which is feminine in German and masculine in Spanish, the German speakers said "beautiful," "elegant," "fragile," "peaceful," "pretty," and "slender," and the Spanish speakers said "big," "dangerous," "long," "strong," "sturdy," and "towering." This was true even though all testing was done in English, a language without grammatical gender. The same pattern of results also emerged in entirely nonlinguistic tasks (e.g., rating similarity between pictures). And we can also show that it is aspects of language per se that shape how people think: teaching English speakers new grammatical gender systems influences mental representations of objects in the same way it does with German and Spanish speakers. Apparently even small flukes of grammar, like the seemingly arbitrary assignment of gender to a noun, can have an effect on people's ideas of concrete objects in the world.

In fact, you don't even need to go into the lab to see these effects of language; you can see them with your own eyes in an art gallery. Look at some famous examples of personification in art — the ways in which abstract entities such as death, sin, victory, or time are given human form. How does an artist decide whether death, say, or time should be painted as a man or a woman? It turns out that in 85 percent of such personifications, whether a male or female figure is chosen is predicted by the grammatical gender of the word in the artist's native language. So, for example, German painters are more likely to paint death as a man, whereas Russian painters are more likely to paint death as a woman.

Do speakers of different languages perceive color in different ways?

Different languages around the world have different numbers of words for colors. Some languages have as little as two basic color terms (e.g., the Dani of Irian Jaya); other languages have five (e.g., the Berinmo of Papua New Guinea); other languages historically only have a handful of basic color terms but have since added new color terms (e.g., Japanese); and other languages have as many as twelve

basic color terms (e.g., Russian). Differences in the number of color terms across languages has led researchers to ask whether speakers of different languages perceive color boundaries differently. Take for example, a rainbow: a rainbow is a spectrum of color with no distinct boundaries between the colors, but in the United States, we perceive the rainbow as being comprised of seven colors (i.e. red, orange, yellow, green, blue, indigo, and violet). As there are no specific color boundaries in a rainbow, would speakers of different languages with different numbers of color terms perceive a rainbow as being comprised of a different number of colors? Davidoff, Davies, and Roberson (1999) examined how color boundaries are perceived by English-speakers and the Berinmo of Papua New Guinea, by asking them to provide a name for 160 different colors on the color spectrum. In this task, English-speakers reported eight basic colors categories, while the Berinmo reported five basic color categories. Furthermore, where on the color spectrum the English-speakers and the Berinmo differentiated blues from greens were markedly different. Results from this study suggest that language influences how speakers perceive color boundaries.

In other words, the influence of language isn't so much on what we can think about, or even what we do think about, but rather on how we break up reality into categories and label them. And in this, our language and our thoughts are probably both greatly influenced by our culture.

3. CONCLUSIONS

Nearly everyone who is multilingual talks about languages changing the way they think, affecting their personality. Each language is another personality as each language has its own distinctive way of expressing ideas. Varying grammar structures force the speaker to rethink how they emphasise certain ideas, and words can have different etymologies which, even if only on a subconscious level, affects the associations you have with them. As a result, an important part of language learning is embracing these personality changes and being comfortable with them. Experience promts that people who are 'fluent' in a language are generally those who adopt the mentality of a speaker of a different language, their delivery improves, along with their grammar, pronunciation, and of course confidence.

So, can learning a different language change the way we think?

The answer to this question is complicated. To some extent, it's a chicken-and-egg question:

a) Are you unable to think about things you don't have words for, or do you lack words for them because you don't think about them? Part of the problem is that there is more involved than just language and thought; there is also culture. Your culture—the traditions, lifestyle, habits, and so on that you pick up from the people you live and interact with—shapes the way you think, and also shapes the way you talk.

b) Are cultural practices a product of language, or is language a product of cultural practices? No matter what the case may be, learning another language is the best way to break free from whatever psychological shackles your mother tongue has placed on you.

What is clear from the vast research literature on language and thought is that language and thought seem to interact in some way to influence how we understand and communicate about the world.

Moreover, if the new language is very different from your own, it may give you insight into another culture and another way of life.

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У статті проведено огляд взаємодії мови і мислення та шляхів впливу мови на наше світобачення. Важливість та науковий інтерес до цього напрямку дослідження мови і мислення обґрунтовано зростанням глобалізації суспільства та потреб у чіткій міжмовній та міжкультурній комунікації. Із кращим розумінням взаємодії та взаємовпливів мови і мислення та комунікації з довкіллям пов'язане і покращення розуміння комунікації між мовами і культурами, яка виходить за межі простого перекладу. Це дозволяє адекватно розуміти численні змістові нюанси різних мов і культур. Новітні дослідження засвідчують, що мови, якими ми розмовляємо, не лише виражають чи відображають, але й значною мірою формують висловлювану думку. Структури, чинні у наших мовах, на глибинному рівні формують наше конструювання реальності та допомагають удосконалювати власні інтелектуальні ресурси.

Ключові слова: когнітивні здібності, міжкультурні відмінності, сприйняття, гендер, багатомовність.