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Caleb Everett

# LINGUISTIC RELATIVITY

EVIDENCE ACROSS LANGUAGES AND COGNITIVE DOMAINS

APPLICATIONS OF COGNITIVE LINGUISTICS



# Caleb Everett

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Evidence Across Languages and Cognitive Domains

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Caleb Everett

Linguistic Relativity

# **Applications of Cognitive Linguistics**

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# 1 Contextualizing the issues

### 1.1 Introduction

It's an old question. Does language affect how you think? The answer, in very broad terms at least, has been debated for centuries. A very closely related question has been the focus of intense scrutiny among linguists and other cognitive scientists for less time, on the order of decades: do patterns of thought vary in accordance with one's native language? Put differently, does there exist a sort of linguistic relativity, such that some aspect(s) of a person's cognition depends on, or is relative in accordance with, the language employed by that person? To many, this is a fascinating question, and some even spend significant portions of their careers trying to obtain a satisfactory answer to this and related questions. One of the reasons the question is so fascinating (to some at least) is that, apart from any actual evidence that may be brought to bear in formulating a response, people often posit very divergent answers based on their intuition. There are likely few questions in the cognitive sciences that elicit such disparate intuition-based responses. To some, the answer is clearly "yes" and such respondents may even find it puzzling that anyone might answer negatively. To others the answer is patently "no", and they may be equally perplexed by the opposing view. Given that personal experience and intuition are so clearly insufficient to arrive at a consensus vis-à-vis the answer to this question, empirical data are particularly crucial to generating an adequate response. Perhaps surprisingly, despite the deep historical roots of the question at hand, quality empirical data have only been arrived at somewhat recently. The purpose of this book is to introduce you to some of that data, acquired through the research of many linguists, anthropologists, cognitive psychologists, and others "ists" in related fields. Arguably, enough data have now surfaced in the relevant literature to arrive at some sort of satisfactory answer to this question. While the title of this book hints none too subtly at an affirmative answer, it is worth noting from the outset that careful examinations of the relevant data often suggest that more nuanced approaches to the answer (rather than a vociferous "yes" or "no"), and to the formulation of the question itself, may be warranted (see Malt and Wolff [2010:11]). Nevertheless, we will adopt the position that in some general sense the question must be answered positively, since the findings surveyed in this book are difficult if not impossible to reconcile with a negative answer.

The notion that thought patterns or cognition do vary in accordance with people's languages is referred to commonly and in this book as the "linguistic relativity hypothesis". This hypothesis was first articulated, or at least first quasi-cohesively articulated, in the work of two well-known linguists, Benjamin Whorf and his teacher Edward Sapir. (Though they never actually referred to their ideas on the topic as a "hypothesis".) For that reason, "linguist relativity hypothesis" is often employed interchangeably in the literature with "Sapir-Whorf hypothesis" or "Whorfian hypothesis". Such interchangeability appears to be falling out of favor, though, and probably should fall out of favor completely. After all, the linguistic relativity hypothesis in its current manifestation differs in some ways from the important ideas put forth by Sapir, Whorf, or any of their influential predecessors whose work helped inform current ideas on the topic. Given that the hypothesis is continually evolving in accordance with the ongoing acquisition of relevant findings, it is in some sense inaccurate to credit any particular scholars with the hypothesis. This is not to suggest that the work of some, in particular Whorf, was not seminal to the florescence of the current crop of ideas on the subject. It clearly was, as we discuss in some detail below. Nevertheless, in this book we are not particularly concerned with the history of the linguistic relativity hypothesis, nor with meticulously depicting the ideas of any one researcher or set of researchers who has weighed in on the issue. We are instead concerned with depicting the increasingly clear tableau of evidence that is finally allowing us to rely on experimental data, rather than intuitions and anecdotal evidence alone, in deciding whether and how one's cognitive processes are affected by his/her native language.

This introductory chapter serves several basic functions: One of these is to define the linguistic relativity hypothesis with sufficient clarity as to allow us to carefully survey the evidence for the hypothesis during the remainder of the book. This requires that some attention be paid to the history of work on linguistic relativity. What will (hopefully) result from this brief discussion of some well-known ideas in the literature is a crystallization of a more contemporary linguistic relativity hypothesis, one that is clearly related to the work of researchers such as Sapir and Whorf, but which is not married to any of their specific proposals. In attempting to define the hypothesis (or more accurately, set of hypotheses), we will consider some contemporary ideas that allow us to refine the notion of linguistic relativity by differentiating types of linguistic effects on cognition. We will also consider some common objections to the notion that linguistic differences impact thought, objections that vary considerably in merit. An ancillary aim of this chapter, taken up prior to the historically oriented discussion, will be to consider intuition-based arguments for and against linguistic relativity. This consideration should allow you to think about the issue from an experiential perspective, in case linguistic relativity is not something to which you have previously given much thought. Finally, the more pragmatic aim of this chapter is to outline the remainder of this book and to demonstrate how the themes of each chapter will be woven into a cohesive set of claims offering support for the existence of linguistic effects on nonlinguistic cognition across human populations.

## 1.2 Intuitions regarding linguistic relativity

It is likely that many or most of us have had personal experiences during which it was hard to transfer a thought from one language to another. Even if you speak two or more languages fluently, it is often difficult to translate ideas accurately between them, and frequently it seems that concepts are being missed even after careful deliberations over a given translation. There are clear motivations for the phrase "lost in translation". Even that phrase itself is difficult to translate into many languages. The 2003 film Lost in Translation, in which Bill Murray plays an American actor in Tokyo, befuddled at times by his surrounding culture and language, was given a number of different titles during its international release.

Have you ever tried to translate a joke from one language to another? This can be a difficult or even impossible task. So often, the foundational concepts of a humorous interaction cannot be accurately captured in a target language. If you have to explain a joke, after all, it generally ceases to be funny. This alone suggests that the humorous aspects to the meaning of any interaction cannot be completely translated, because translation so often entails the explanation of one set of lexical items in terms of a set of others. Take the following Chris Rock joke, selected from a random online joke generator: "I live in a neighborhood so bad that you can get shot while getting shot." A simple joke, one line long, based on simple premises. But my suspicion is that, should you try to convert it into another language, particularly one not closely related to English, you will quickly confront difficulties. For instance, while the construction "getting shot while X" is commonplace to speakers of American English and can be translated into other languages, the resultant translations may not convey a number of relevant connotations associated with the phrase. Significantly, these missed connotations are not simply a case of absent cultural cues. They relate at least in part to a grammatical phenomenon, namely a morphosyntactic construction ("getting shot while X"), that is present in English and absent in other languages. To cite another example of countless options, Woody Allen once observed that "Some guy hit my fender, and I told him, 'Be fruitful and multiply,' but not in those words." In this case, the humor results from an English phrase that has no exact analog in many languages, and furthermore is not even explicitly denoted in the quote. Is it possible to "think" this joke in another language? Can we really understand the joke in another language that does not utilize the crucial phrase that is only obliquely referred to in the English original?

Of course translation difficulties are not restricted to humor. If they were, they would have little to offer in the way of evidence of non-trivial cognitive effects dictated by crosslinguistic disparities. Often, though, translation difficulties reflect systematic differences in the way certain semantic domains are encoded in different languages. In these cases, intuition (and, again, we are not claiming that intuition is sufficient to resolve these issues) seems to point to very different associated patterns of thought. Systematic differences of the sort I am referring to surface for example when one language has more words at its disposal when referring to a particular semantic category. Perhaps the most famous example here is the oft-incorrectly-cited case of words for snow in Eskimo. It has been claimed that Eskimos have dozens if not hundreds of words for snow in their language, a claim that we will see is remarkably exaggerated. Yet there are innumerable less extreme yet analogous examples. We will offer a few taken from personal experience. You may very well have your own examples.

Let me start with an example that is at least somewhat systematic and clearly relates to the cultures of two different groups of speakers who enjoy, perhaps to varying degrees, the same game: soccer. The groups are Brazilian Portuguese speakers and American English speakers. Categorizing in a very coarse manner, it is fair to suggest that the soccer-playing characteristics of Brazilians differs dramatically from that of Americans, both in terms of style and success in competitions. Stereotypically anyway, Brazilian soccer players rely on flair and individual ability, while Americans rely on teamwork, athleticism, and less on individual technical ability. Such differences between American soccer subculture and Brazilian futebol subculture are reflected in lexical patterns. So, for example, consider the words for two types of dribbles carried out in an attempt to maintain possession of the ball at the expense of an opponent. One of these involves the ball-holder lifting the ball over the defender's head and retaining possession on the other side of the defender's body. The successful completion of this maneuver is most often called a lencol ('sheet') or a chapeu ('hat') in Portuguese. (These differ from a related dribble called the lambreta ['scooter']). The metaphorical bases for these terms are transparent, since both refer to items that can be pulled over one's head. In Brazil, if you are unfortunate to have an opponent give you a chapeu or lençol during play, you are likely to hear about it afterward. In pick-up games, discussion often ensues after the completion of such a maneuver as to whether in fact the ball cleared the opponent's head. In some contexts such a maneuver may be celebrated or talked about as much as the scoring of a goal. The point here is that there is often a significant amount of energy and discussion about whether a particular maneuver did or did not constitute a chapeu or lençol. Conversely, in my experience the attention paid to this maneuver is noticeably less among most American soccer players, quite possibly since this maneuver is not lexically encoded. That is, there is no common expression for this dribble in American English (though some Americans may on occasion adopt the Spanish term sombrero). Judging from intuition and personal experience only, it seems possible if not plausible that the absence of any relevant well-known terms for this maneuver has real consequences in terms of the conceptualization of the maneuver itself, and the degree of focus on it, by Americans. Since most American players lack a term for the concept to facilitate discussion of and verbally allow for emphasis of the act, it would be surprising to me if they thought about the maneuver in the same manner as Brazilian players (not impossible, just surprising). In other words, while the soccer cultures in question may play a role in emphasizing the dribble in question to varying degrees, the languages of the two cultures also seem to influence the extent to which the maneuver is conceptually reified.

Even in this very restricted domain of soccer playing across only two represented cultures, other examples could be purveyed. Another common dribble employed in soccer involves kicking the ball between a non-goalie opponent's legs. Here again American English speakers are at a lexical disadvantage. I am aware of only one common term for this maneuver in American English, nutmeg, while I have heard at least four terms for this dribble (or, more precisely, variants of it) in Brazilian Portuguese: caneta ('pen'), rolinho ('little roll'), ovinho ('little egg'), and saia ('skirt'). Some players seem more concerned with pulling off such maneuvers than scoring goals. More to the point, some Brazilian players insist there are clear yet minor disparities between some subset of these maneuvers, all of which involve the ball traveling through an opponent's legs and are represented via the same cover term in American English. So while Brazilian speakers may not have more words for snow than their American counterparts, it seems they have more words for varieties of soccer dribbles, which in some cases reflect nuanced distinctions between maneuvers and appear to have real consequences on the way the dribbles are conceptualized. Of course such experiential examples are useful for anecdotal purposes only, and I have not conducted any experiments to test for differences in the conceptualizations of these dribbles resulting from the manner in which they are described verbally.

Such cases from day-to-day life do hint at differences in vocabulary potentially generating differences in the attention directed towards, and the construal of, nonlinguistic features of our environment. Nevertheless, they also seem a bit trivial. They do not relate to major differences between languages, only to minor lexical disparities. And it would probably be a stretch to attribute pronounced thought differences to such minor differences in word inventories. But what about more systematic semantic differences between languages? If you have ever had the opportunity to investigate or learn a language that is completely unrelated to your own, you have likely uncovered such systematic differences. Consider an example from my own fieldwork among the Karitiâna, a group of about three hundred people who speak a Tupí language in southern Amazonia. When learning their language I was surprised to discover that the Karitiâna have no exact translation for 'monkey'. Instead there are numerous words for species of monkeys that are familiar to their ecology, including *orom* ('ateles paniscus'), pikom ('cebus apella'), ironh ('saimiri sciureus'), and ery ('callicebus callicebus moloch'). It is fair to say that most English speakers would be unable to provide names for these species, since monkey-species nomenclature is not a part of their vocabularies. In fact, when presented with pictures of the relevant species, English speakers typically refer to them via the cover term "monkey" that has no analog in Karitiâna. So what are we to make of this? Is this just a trivial linguistic difference? The Karitiâna have potential cultural motivations for lexically accentuating differences among these species, and not grouping them in the way English speakers do. For instance, some of these monkeys (particularly pikom) are considered great ingredients for stew, and are coveted food items. Others are not, Crucially, all the experiential evidence (a type which has clear limitations, discussed in Section 1.4) I have is consistent with the notion that these terminological distinctions and the absence of a basic superordinate cover term for 'monkey' assist in the Karitiânas' discriminations of these monkey types. At the least, it is indisputable that there is no native concept for 'monkey' coded in the Karitiâna language, whereas myriad related concepts are coded in the language in a way that they are not for most English speakers.1 Now of course Karitiana speakers can learn a superordinate term and most are familiar with the Portuguese term macaco, just as an English zoologist may learn an even greater range of names of monkey species. But the point remains that such non-equiv-

<sup>1</sup> As research such as Berlin (1992) and Atran (1993) has demonstrated, in smaller nonindustrialized societies the most basic ethnobiological terms, characterized by developmental primacy, tend to refer to more specific species-categorizations than basic terms in English. In other words, the pattern evident in Karitiana monkey terminology is not aberrant.

alencies across this semantic category hint at very real distinctions in the manner in which the animals in question are construed by speakers of the two different languages. For any pair of languages, an assortment of such systematic or near-systematic disparities in the structures of lexical categories may be adduced. Often these disparities owe themselves to clear ecological factors (e.g. differences in the flora and fauna encountered in the daily lives of Americans and Karitiânas), or some more abstract cultural factor (e.g. soccer concepts shared by many Brazilians). To many, including myself, it seems plausible that such lexical disparities reflect and reinforce differences in the way speakers conceptualize the relevant entities, even in nonlinguistic contexts. The intuition of others may not accord with this relativistic interpretation, though, and they may remain unconvinced by such anecdotal data. They may even find it implausible that the Karitiana taxonomy of monkey species reifies/ enforces greater conceptual distinctions between monkey types, even during nonlinguistic thought. They may suggest instead that, just because most English speakers lack the hyponyms for certain monkey species, this does not imply that the speakers do not recognize or conceptualize the differences between those species, at least once they have some experience with the monkeys in question. Conversely, some might suggest that just because the Karitiâna have no superordinate term for 'monkey', this does not imply that they do not, or do not typically, recognize a class of species that English speakers label with the term 'monkey'. I could offer more experientially based opinions and anecdotes based on time spent with the people, but these would not convince skeptics since opinions and anecdotes in and of themselves do not constitute objective data. After all, such intuition-based opinions may be subject to all sorts of biases on my own part, of which I may or may not be cognizant. As centuries of discussion on the relationship between language and cognition have demonstrated pretty clearly, anecdotes and experiential evidence alone will not resolve such debates.

The absence of complete correspondence of concepts across languages was first observed long ago. For instance, the 13th century English philosopher and friar Roger Bacon suggested that variances in semantic concepts across languages made loss-less translation impossible (Kelly [1979:9]). In this way his opinion diverged from another philosopher and clergyman who predated him by nine centuries, St. Augustine. For millennia believers of various faiths have struggled with the translation of their scriptures. It is a very onerous task, often taking decades, and many doubt that the resultant translations are in fact lossless. One of the many difficulties faced in such translation is the transfer of idiomatic expressions. Consider, for instance, translating a concept such as "lamb of God" into an Amazonian language. Just that phrase alone, which is found in English translations of John's writings in the Christian New Testament, presents a series of obstacles. An obvious one is that Amazonian cultures do not have sheep or lambs, and have often not typically been exposed to these species. Another is that shepherding is a foreign activity. These difficulties may seem more cultural than linguistic (assuming for now a simple division between culture and language), but other difficulties are not. The phrase itself relies on a metaphorical correspondence between animal sacrifice and other sorts of sacrifice, i.e. those required for spiritual salvation according to some believers of the scriptures in question. In other words, "lamb of God" indexes metaphors shared by speakers of English, while also indexing some major concepts (lambs and a monotheistic entity) that are foreign to many cultures. This phrase has been translated thousands of times into unrelated languages, but it would seem that in many cases there is some inevitable loss of meaning, however minor, across the translations. It serves as a useful illustration since it reflects the centuries with which people have been seriously struggling with representing the concepts denoted in one language in a language that does not share some crucial component concepts.

The difficulty of transferring concepts from one language to another is consonant with the notion of linguistic relativity. Such difficulty implies that, in some cases anyway, there are obstacles to thinking the same exact thoughts while utilizing different languages. In the light of such difficulty, it is not a stretch to think that different languages affect how their speakers think in general terms. But note that the latter claim is different than the former, and while the two are related the former cannot be offered as unequivocal support for the latter. The idea we are interested in here is whether different languages have demonstrable effects on the *nonlinguistic* cognition of their speakers. Difficulties in translation may provide intuitive support for this notion, but they do not directly impinge on the issue of nonlinguistic thought. Just because people speak in very different ways does not necessarily mean these speech differences yield disparities in how they think when they are not speaking. Furthermore, if real differences in thought are hinted at by differences in languages, this does not imply that the linguistic differences are themselves the shapers of those thought differences. After all, differences in conceptual and linguistic patterns may be due to some other underlying factor, perhaps broad cultural distinctions that yield affects on both language and thought. Regardless of the conceptual differences hinted at by challenges in translation, such challenges cannot establish a causal influence of linguistic disparities on thought, much as intuitions alone cannot. The inadequacy of such kinds of evidence has nevertheless frequently been ignored in the past, to the detriment of serious inquiries into linguistic relativity.

## 1.3 A brief history of the linguistic relativity hypothesis

The genesis and dissemination of the linguistic relativity hypothesis has a long and, in many instances, contentious history. The hypothesis is closely affiliated with other tenets in philosophy and the social sciences, and is sometimes mistaken for them. For instance, there is a long line of influential writers who at some point appeared to equate thought with language, to varying degrees. This list includes Plato (1892:252), Kant (1988[1798]:278), Watson (1913), Wittgenstein (1922), and Humboldt (1988[1836]). For instance, Humboldt noted that "Language is the formative organ of thought... Thought and language are therefore one and inseparable from each other." (1988:54) Now if language and thought are indistinguishable, it follows naturally that which language you speak will have a profound effect on your cognition more generally, assuming that differences across languages exist. In fact, the consequence of such an interpretation of the language-thought relationship is a sort of strong linguistic determinism, according to which your way of thinking is completely constrained and determined by the language(s) you speak natively. In the wellknown words of Wittgenstein, "The limits of my language mean the limits of my world." (1922, proposition 5.6)

There are difficulties with the tack of equating language and thought. It seems clear, for example, that other species are quite capable of thinking, and often in sophisticated ways. Research on primates, for instance, is continually revealing new cognitive capacities of species ranging from capuchin monkeys to bonobos (see e.g. Tomasello and Call 1997). Research on dogs, dolphins and non-mammals, particularly a number of avian species, reveals frequently comparable results. Given that it is widely accepted that such species do not share language with humans, but clearly share a variety of cognitive abilities with us, it seems clear that language is not required for thought, and consequently should not be equated with it. Furthermore, studies with pre-linguistic infants suggests that they possess a variety of cognitive skills that one might assume requires language, but in fact precedes linguistic behavior ontogenetically. For example, infants are capable of some very basic arithmetic (Wynn [1992]).

Contra the simplified assumptions of some scholars (e.g. Pinker [1994]—see Section 1.5), however, contemporary work on linguistic relativity does not presume that language and thought are completely dissociable. Researchers who do this work are concerned with whether crosslinguistic dissimilarities yield dissimilarities in thought, and with establishing not only the existence but the magnitude of such potential dissimilarities. This very distinguishable issue has also received a fair amount of attention in the literature over the