3.1: Linguistic Relativity- The Sapir-Whorf Hypothesis

Learning Objectives

After completing this module, students will be able to:

1. Define the concept of linguistic relativity

2. Differentiate linguistic relativity and linguistic determinism

3. Define the Sapir-Whorf Hypothesis (against more pop-culture takes on it) and situate it in a broader theoretical context/history

4. Provide examples of linguistic relativity through examples related to time, space, metaphors, etc.

In this part, we will look at language(s) and worldviews at the intersection of language & thoughts and language & cognition (i.e., the mental system with which we process the world around us, and with which we learn to function and make sense of it). Our main question, which we will not entirely answer but which we will examine in depth, is a chicken and egg one: does thought determine language, or does language inform thought?

We will talk about the Sapir-Whorf Hypothesis; look at examples that support the notion of linguistic relativity (pronouns, kinship terms, grammatical tenses, and what they tell us about culture and worldview); and then we will more specifically look into how metaphors are a structural component of worldview, if not cognition itself; and we will wrap up with memes. (Can we analyze memes through an ethnolinguistic, relativist lens? We will try!)
3.1 Linguistic Relativity: The Sapir-Whorf Hypothesis

In the 1920s, Benjamin Whorf was a graduate student studying with linguist Edward Sapir at Yale University in New Haven, Connecticut. Sapir, considered the father of American linguistic anthropology, was responsible for documenting and recording the languages and cultures of many Native American tribes, which were disappearing at an alarming rate. This was due primarily to the deliberate efforts of the United States government to force Native Americans to assimilate into the Euro-American culture. Sapir and his predecessors were well aware of the close relationship between culture and language because each culture is reflected in and influences its language. Anthropologists need to learn the language of the culture they are studying in order to understand the world view of its speakers. Whorf believed that the reverse is also true, that a language affects culture as well, by actually influencing how its speakers think. His hypothesis proposes that the words and the structures of a language influence how its speakers think about the world, how they behave, and ultimately the culture itself. (See our definition of culture in Part 1 of this document.) Simply stated, Whorf believed that human beings see the world the way they do because the specific languages they speak influence them to do so.

He developed this idea through both his work with Sapir and his work as a chemical engineer for the Hartford Insurance Company investigating the causes of fires. One of his cases while working for the insurance company was a fire at a business where there were a number of gasoline drums. Those that contained gasoline were surrounded by signs warning employees to be cautious around them and to avoid smoking near them. The workers were always careful around those drums. On the other hand, empty gasoline drums were stored in another area, but employees were more careless there. Someone tossed a cigarette or lighted match into one of the “empty” drums, it went up in flames, and started a fire that burned the business to the ground. Whorf theorized that the meaning of the word empty implied to the worker that “nothing” was there to be cautious about so the worker behaved accordingly. Unfortunately, an “empty” gasoline drum may still contain fumes, which are more flammable than the liquid itself.

Whorf’s studies at Yale involved working with Native American languages, including Hopi. The Hopi language is quite different from English, in many ways. For example, let’s look at how the Hopi language deals with time. Western languages (and cultures) view time as a flowing river in which we are being carried continuously away from a past, through the present, and into a future. Our verb systems reflect that concept with specific tenses for past, present, and future. We think of this concept of time as universal, that all humans see it the same way. A Hopi speaker has very different ideas and the structure of their language both reflects and shapes the way they think about time. The Hopi language has no present, past, or future tense. Instead, it divides the world into what Whorf called the manifested and unmanifest domains. The manifested domain deals with the physical universe, including the present, the immediate past and future; the verb system uses the same basic structure for all of them. The unmanifest domain involves the remote past and the future, as well as the world of desires, thought, and life forces. The set of verb forms dealing with this domain are consistent for all of these areas, and are different from the manifested ones. Also, there are no words for hours, minutes, or days of the week. Native Hopi speakers often had great difficulty adapting to life in the English speaking world when it came to being “on time” for work or other events. It is simply not how they had been conditioned to behave with respect to time in their Hopi world, which followed the phases of the moon and the movements of the sun.

In a book about the Abenaki who lived in Vermont in the mid-1800s, Trudy Ann Parker described their concept of time, which very much resembled that of the Hopi and many of the other Native American tribes. “They called one full day a
sleep, and a year was called a winter. Each month was referred to as a moon and always began with a new moon. An Indian day wasn’t divided into minutes or hours. It had four time periods—sunrise, noon, sunset, and midnight. Each season was determined by the budding or leafing of plants, the spawning of fish, or the rutting time for animals. Most Indians thought the white race had been running around like scared rabbits ever since the invention of the clock.

The lexicon, or vocabulary, of a language is an inventory of the items a culture talks about and has categorized in order to make sense of the world and deal with it effectively. For example, modern life is dictated for many by the need to travel by some kind of vehicle—cars, trucks, SUVs, trains, buses, etc. We therefore have thousands of words to talk about them, including types of vehicles, models, brands, or parts.

The most important aspects of each culture are similarly reflected in the lexicon of its language. Among the societies living in the islands of Oceania in the Pacific, fish have great economic and cultural importance. This is reflected in the rich vocabulary that describes all aspects of the fish and the environments that islanders depend on for survival. For example, in Palau there are about 1,000 fish species and Palauan fishermen knew, long before biologists existed, details about the anatomy, behavior, growth patterns, and habitat of most of them—in many cases far more than modern biologists know even today. Much of fish behavior is related to the tides and the phases of the moon. Throughout Oceania, the names given to certain days of the lunar months reflect the likelihood of successful fishing. For example, in the Caroline Islands, the name for the night before the new moon is *otolol*, which means “to swarm.” The name indicates that the best fishing days cluster around the new moon. In Hawai’i and Tahiti two sets of days have names containing the particle *`ole* or *`ore*; one occurs in the first quarter of the moon and the other in the third quarter. The same name is given to the prevailing wind during those phases. The words mean “nothing,” because those days were considered bad for fishing as well as planting.

Parts of Whorf’s hypothesis, known as linguistic relativity, were controversial from the beginning, and still are among some linguists. Yet Whorf’s ideas now form the basis for an entire sub-field of cultural anthropology: cognitive or psychological anthropology. A number of studies have been done that support Whorf’s ideas. Linguist George Lakoff’s work looks at the pervasive existence of metaphors in everyday speech that can be said to predispose a speaker’s world view and attitudes on a variety of human experiences. A metaphor is an expression in which one kind of thing is understood and experienced in terms of another entirely unrelated thing; the metaphors in a language can reveal aspects of the culture of its speakers. Take, for example, the concept of an argument. In logic and philosophy, an argument is a discussion involving differing points of view, or a debate. But the conceptual metaphor in American culture can be stated as ARGUMENT IS WAR. This metaphor is reflected in many expressions of the everyday language of American speakers: I *won* the argument. He *shot down* every point I made. They *attacked* every argument we made. Your point is *right on target*. I had a *fight* with my boyfriend last night. In other words, we use words appropriate for discussing war when we talk about arguments, which are certainly not real war. But we actually think of arguments as a verbal battle that often involve anger, and even violence, which then structures how we argue.

To illustrate that this concept of argument is not universal, Lakoff suggests imagining a culture where an argument is not something to be won or lost, with no strategies for attacking or defending, but rather as a dance where the dancers’ goal is to perform in an artful, pleasing way. No anger or violence would occur or even be relevant to speakers of this language, because the metaphor for that culture would be ARGUMENT IS DANCE.

3.1 Adapted from Perspectives, Language (Linda Light, 2017)
You can either watch the video, How Language Shapes the Way We Think, by linguist Lera Boroditsky, or read the script below.

Watch the video: How Language Shapes the Way We Think (Boroditsky, 2018)

There are about 7,000 languages spoken around the world—and they all have different sounds, vocabularies, and structures. But do they shape the way we think? Cognitive scientist Lera Boroditsky shares examples of language—from an Aboriginal community in Australia that uses cardinal directions instead of left and right to the multiple words for blue in Russian—that suggest the answer is a resounding yes. “The beauty of linguistic diversity is that it reveals to us just how ingenious and how flexible the human mind is,” Boroditsky says. “Human minds have invented not one cognitive universe, but 7,000.”

**Video transcript:**

So, I’ll be speaking to you using language ... because I can. This is one these magical abilities that we humans have. We can transmit really complicated thoughts to one another. So what I’m doing right now is, I’m making sounds with my mouth as I’m exhaling. I’m making tones and hisses and puffs, and those are creating air vibrations in the air. Those air vibrations are traveling to you, they’re hitting your eardrums, and then your brain takes those vibrations from your eardrums and transforms them into thoughts. I hope.

[Laughter]

I hope that’s happening. So because of this ability, we humans are able to transmit our ideas across vast reaches of space and time. We’re able to transmit knowledge across minds. I can put a bizarre new idea in your mind right now. I could say, “Imagine a jellyfish waltzing in a library while thinking about quantum mechanics.”

[Laughter]

Now, if everything has gone relatively well in your life so far, you probably haven’t had that thought before.

[Laughter]

But now I’ve just made you think it, through language.

Now of course, there isn’t just one language in the world, there are about 7,000 languages spoken around the world. And all the languages differ from one another in all kinds of ways. Some languages have different sounds, they have different vocabularies, and they also have different structures—very importantly, different structures. That begs the question: Does the language we speak shape the way we think? Now, this is an ancient question. People have been speculating about this question forever. Charlemagne, Holy Roman emperor, said, “To have a second language is to have a second soul”—strong statement that language crafts reality. But on the other hand, Shakespeare has Juliet say, “What’s in a name? A rose by any other name would smell as sweet.” Well, that suggests that maybe language doesn’t craft reality.

These arguments have gone back and forth for thousands of years. But until recently, there hasn’t been any data to help us decide either way. Recently, in my lab and other labs around the world, we’ve started doing research, and now we have actual scientific data to weigh in on this question.
So let me tell you about some of my favorite examples. I’ll start with an example from an Aboriginal community in Australia that I had a chance to work with. These are the Kuuk Thaayorre people. They live in Pormpuraaw at the very west edge of Cape York. What’s cool about Kuuk Thaayorre is, in Kuuk Thaayorre, they don’t use words like “left” and “right,” and instead, everything is in cardinal directions: north, south, east, and west. And when I say everything, I really mean everything. You would say something like, “Oh, there’s an ant on your southwest leg.” Or, “Move your cup to the north-northeast a little bit.” In fact, the way that you say “hello” in Kuuk Thaayorre is you say, “Which way are you going?” And the answer should be, “North-northeast in the far distance. How about you?”

So imagine as you’re walking around your day, every person you greet, you have to report your heading direction.

[Laughter]

But that would actually get you oriented pretty fast, right? Because you literally couldn’t get past “hello,” if you didn’t know which way you were going. In fact, people who speak languages like this stay oriented really well. They stay oriented better than we used to think humans could. We used to think that humans were worse than other creatures because of some biological excuse: “Oh, we don’t have magnets in our beaks or in our scales.” No; if your language and your culture trains you to do it, actually, you can do it. There are humans around the world who stay oriented really well.

And just to get us in agreement about how different this is from the way we do it, I want you all to close your eyes for a second and point southeast.

[Laughter]

Keep your eyes closed. Point. OK, so you can open your eyes. I see you guys pointing there, there, there, there, there ... I don’t know which way it is myself—

[Laughter]

You have not been a lot of help.

[Laughter]

So let’s just say the accuracy in this room was not very high. This is a big difference in cognitive ability across languages, right? Where one group—very distinguished group like you guys—doesn’t know which way is which, but in another group, I could ask a five-year-old and they would know.

[Laughter]

There are also really big differences in how people think about time. So here I have pictures of my grandfather at different ages. And if I ask an English speaker to organize time, they might lay it out this way, from left to right. This has to do with writing direction. If you were a speaker of Hebrew or Arabic, you might do it going in the opposite direction, from right to left.

But how would the Kuuk Thaayorre, this Aboriginal group I just told you about, do it? They don’t use words like “left” and “right.” Let me give you hint. When we sat people facing south, they organized time from left to right. When we sat them facing north, they organized time from right to left. When we sat them facing east, time came towards the body. What’s
the pattern? East to west, right? So for them, time doesn’t actually get locked on the body at all, it gets locked on the landscape. So for me, if I’m facing this way, then time goes this way, and if I’m facing this way, then time goes this way. I’m facing this way, time goes this way—very egocentric of me to have the direction of time chase me around every time I turn my body. For the Kuuk Thaayarre, time is locked on the landscape. It’s a dramatically different way of thinking about time.

Here’s another really smart human trait. Suppose I ask you how many penguins are there. Well, I bet I know how you’d solve that problem if you solved it. You went, “One, two, three, four, five, six, seven, eight.” You counted them. You named each one with a number, and the last number you said was the number of penguins. This is a little trick that you’re taught to use as kids. You learn the number list and you learn how to apply it. A little linguistic trick. Well, some languages don’t do this, because some languages don’t have exact number words. They’re languages that don’t have a word like “seven” or a word like “eight.” In fact, people who speak these languages don’t count, and they have trouble keeping track of exact quantities. So, for example, if I ask you to match this number of penguins to the same number of ducks, you would be able to do that by counting. But folks who don’t have that linguistic trait can’t do that.

Languages also differ in how they divide up the color spectrum—the visual world. Some languages have lots of words for colors, some have only a couple words, “light” and “dark.” And languages differ in where they put boundaries between colors. So, for example, in English, there’s a word for blue that covers all of the colors that you can see on the screen, but in Russian, there isn’t a single word. Instead, Russian speakers have to differentiate between light blue, goluboy, and dark blue, siniy. So Russians have this lifetime of experience of, in language, distinguishing these two colors. When we test people’s ability to perceptually discriminate these colors, what we find is that Russian speakers are faster across this linguistic boundary. They’re faster to be able to tell the difference between a light and a dark blue. And when you look at people’s brains as they’re looking at colors—say you have colors shifting slowly from light to dark blue—the brains of people who use different words for light and dark blue will give a surprised reaction as the colors shift from light to dark, as if, “Ooh, something has categorically changed,” whereas the brains of English speakers, for example, that don’t make this categorical distinction, don’t give that surprise, because nothing is categorically changing.

Languages have all kinds of structural quirks. This is one of my favorites. Lots of languages have grammatical gender; so every noun gets assigned a gender, often masculine or feminine. And these genders differ across languages. So, for example, the sun is feminine in German but masculine in Spanish, and the moon, the reverse. Could this actually have any consequence for how people think? Do German speakers think of the sun as somehow more female-like, and the moon somehow more male-like? Actually, it turns out that’s the case. So if you ask German and Spanish speakers to, say, describe a bridge, like the one here—“bridge” happens to be grammatically feminine in German, grammatically masculine in Spanish—German speakers are more likely to say bridges are “beautiful,” “elegant,” and stereotypically feminine words. Whereas Spanish speakers will be more likely to say they’re “strong” or “long,” these masculine words.

[Laughter]

Languages also differ in how they describe events, right? You take an event like this, an accident. In English, it’s fine to say, “He broke the vase.” In a language like Spanish, you might be more likely to say, “The vase broke,” or “The vase broke itself.” If it’s an accident, you wouldn’t say that someone did it. In English, quite weirdly, we can even say things like, “I broke my arm.” Now, in lots of languages, you couldn’t use that construction unless you are a lunatic and you went out looking to break your arm—[laughter] and you succeeded. If it was an accident, you would use a different construction.
Now, this has consequences. So, people who speak different languages will pay attention to different things, depending on what their language usually requires them to do. So we show the same accident to English speakers and Spanish speakers, English speakers will remember who did it, because English requires you to say, “He did it; he broke the vase.” Whereas Spanish speakers might be less likely to remember who did it if it’s an accident, but they’re more likely to remember that it was an accident. They’re more likely to remember the intention. So, two people watch the same event, witness the same crime, but end up remembering different things about that event. This has implications, of course, for eyewitness testimony. It also has implications for blame and punishment. So if you take English speakers and I just show you someone breaking a vase, and I say, “He broke the vase,” as opposed to “The vase broke,” even though you can witness it yourself, you can watch the video, you can watch the crime against the vase, you will punish someone more, you will blame someone more if I just said, “He broke it,” as opposed to, “It broke.” The language guides our reasoning about events.

Now, I’ve given you a few examples of how language can profoundly shape the way we think, and it does so in a variety of ways. So language can have big effects, like we saw with space and time, where people can lay out space and time in completely different coordinate frames from each other. Language can also have really deep effects—that’s what we saw with the case of number. Having count words in your language, having number words, opens up the whole world of mathematics. Of course, if you don’t count, you can’t do algebra, you can’t do any of the things that would be required to build a room like this or make this broadcast, right? This little trick of number words gives you a stepping stone into a whole cognitive realm.

Language can also have really early effects, what we saw in the case of color. These are really simple, basic, perceptual decisions. We make thousands of them all the time, and yet, language is getting in there and fussing even with these tiny little perceptual decisions that we make. Language can have really broad effects. So the case of grammatical gender may be a little silly, but at the same time, grammatical gender applies to all nouns. That means language can shape how you’re thinking about anything that can be named by a noun. That’s a lot of stuff.

And finally, I gave you an example of how language can shape things that have personal weight to us—ideas like blame and punishment or eyewitness memory. These are important things in our daily lives.

Now, the beauty of linguistic diversity is that it reveals to us just how ingenious and how flexible the human mind is. Human minds have invented not one cognitive universe, but 7,000—there are 7,000 languages spoken around the world. And we can create many more—languages, of course, are living things, things that we can hone and change to suit our needs. The tragic thing is that we’re losing so much of this linguistic diversity all the time. We’re losing about one language a week, and by some estimates, half of the world’s languages will be gone in the next hundred years. And the even worse news is that right now, almost everything we know about the human mind and human brain is based on studies of usually American English-speaking undergraduates at universities. That excludes almost all humans. Right? So what we know about the human mind is actually incredibly narrow and biased, and our science has to do better.

I want to leave you with this final thought. I’ve told you about how speakers of different languages think differently, but of course, that’s not about how people elsewhere think. It’s about how you think. It’s how the language that you speak shapes the way that you think. And that gives you the opportunity to ask, “Why do I think the way that I do?” “How could I think differently?” And also, “What thoughts do I wish to create?”

Thank you very much.
Read the following text on what lexical differences between language can tell us about those languages’ cultures.