

Introduction to the Sapir-Whorf Hypothesis (AKA linguistic relativity)

Linguistics 3430

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Part I. What is linguistic relativity?

A. Definition

1. Linguistic relativity is a web of assumptions and claims:

- Peoples of the world have developed different ways of viewing the world.
- Language differences reflect differences in culture (a rarely made claim now).
- Language differences reflect differences in conceptual structure.
- Language can create *some* aspects of reality.
- The conceptual system underlying the language that a person speaks will affect the way in which that person thinks about the world and, accordingly, the way in which that person will reason when solving problems.
- Language differences affect our daily, automatic thinking, rather than what we *are capable* of thinking about.
- The more frequent and automatic the word or grammatical form, the more it potentially affects what we observe in the world and how we reason.
- Therefore, we want to look at grammar and grammatical words to test whether language affects perception and reasoning.

2. Whorf and Sapir argue:

- “We cut up nature—organize it into concepts—and ascribe significances as we do, largely because of absolutely obligatory patterns of our own language.” (Whorf)
- “The world is presented in a kaleidoscopic flux of impressions which have to be organized largely by the linguistic systems in our minds.” (Whorf)
- “Meanings are not so much discovered in experience as imposed upon it, because of the tyrannical hold that linguistic form has upon our orientation to the world.” (Sapir)

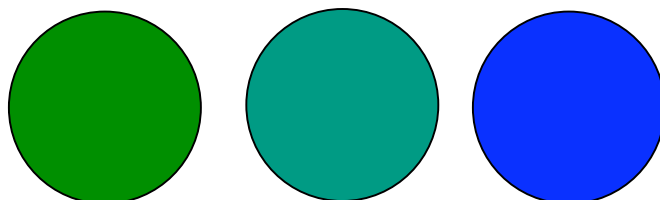
B. Evidence

Four general classes of evidence are used to support the Sapir-Whorf hypothesis:

1. **Languages make different distinction in their lexicons.** A distinctively sculpted lexicon is the evolutionary product of a people’s struggle to survive in a specific environment. But of course the environment itself can be human-made. Latin has two words for blood: *sanguis* (blood inside the body), *cruor* (blood flowing outside the body). And if vocabulary differences are equivalent to differences in conceptual structure, then there are such differences *within* a given speech community: experts always have a more elaborate vocabulary for mapping a domain of experience.
2. **Vocabulary differences have behavioral effects.** Languages vary in the number of basic colors words they have. Many anthropologists argued that this was strong evidence for linguistic relativity: color distinctions seemed to be created by language. Rosch (1972)

disagreed, arguing from research among Dani people (New Guinea; two basic color terms) that speakers of all language have the same physiological *ability* to perceive distinctions among the 11 'landmark' colors. Berlin and Kay (1969) showed that these landmark colors are the basis of color systems in all world languages. However, color vocabulary still provides support for linguistic relativity: the number of basic words in a person's color vocabulary influence how easy it is for that person to *recognize* those distinctions.

The Kay-Kempton experiment (1984). This experiment involved a green-blue discrimination task. Subjects saw three color chips in the green-blue range. For example,



Phase 1: Subjects: English speakers and Tarahumara speakers (for whom there is a single word for green/blue, *siyname*). For 56 triads, subjects are asked: Which of the three chips is most different from the other two? English speakers picked Chip C while Tarahumaran subjects chose A or split evenly.

Phase 2: Subjects: English speakers. Similar task to Phase 1, but this time subjects had a moving window through which they could only see two chips at a time. They were asked to compare the relative 'greenness' of A and B and the relative 'blueness' of B and C. What did they then pick for the most different chip?

3. **Basic grammatical structure can differ radically from language to language.** Even if we expect lexical distinctions to vary from culture to culture, we don't expect basic grammar to vary much, because it supposedly reflects fundamental distinctions like mass vs. count and entity vs. property. But it does. For example, in Native American languages, there is no clear grammatical separation between states of affairs and entities:

Siberian Yupik

<i>angya</i>	<i>-ghlla</i>	<i>-ng</i>	<i>-yug</i>	<i>-tuq</i>
boat	-augmentative-acquire		-desire-3SG	
'He wants to acquire a boat.'				
'Boat-acquiring desire'				

Wichita (Caddoan, Oklahoma)

<i>kiya-</i>	<i>:-ki</i>	<i>-riwa:c</i>	<i>-e:rhira-s</i>	<i>-?irhawwi</i>
quotative past	big	buffalo		lie
'They say there was a big buffalo lying there.'				
'Apparent past prone state of big buffalo'				

4. **Grammatical structure has behavioral effects.** For example, Navajo verb forms encode shape, flatness and flexibility of objects acted upon. Carroll and Casagrande (1958) studied what properties Navajo children use to group objects. They gave subjects a blue rope and yellow stick and asked which of the two goes with a blue stick. The

Navajo-speaking children chose shape (yellow stick); the English-speaking children choose color (blue rope).

C. How exotic are the phenomena that Whorf describes?

Whorf was writing at a time when the structure of non-Indo-European languages was poorly understood. It is not news to any linguist working today that not all languages have tense, that not all languages have the same metaphorical models, that not all languages have grammatical relations like subject and object, that not all languages have constituents like NP (noun phrase) and VP (verb phrase), that some languages may lack frequency adverbs like *twice*.

Part 2. Whorf's Studies

A. Whorf's Life and Views

- Benjamin Lee Whorf (1897-1941) had a degree in chemical engineering from MIT.
- He worked as a fire insurance inspector for the Hartford Fire Insurance Company, pursuing linguistic and anthropological studies as a hobby.
- In 1931, Whorf began working with Edward Sapir at Yale University.
- He worked on decipherment of Mayan hieroglyphs and Hopi grammar, among other things.
- So, he was working with two very different groups: indigenous peoples and befuddled people at fire scenes. Somehow, he came to see them as similar: their reasoning made sense to him only once he understood how language had formed their thinking.
- Most of his work was published in the popular press.
- He is mainly known for a posthumous collection of his work, *Language, Thought, and Reality* (1956).
- His views don't seem radical today: he believes that there are different ways of viewing the world, that language influences (but doesn't determine) daily thought and that conceptual systems evolve.
- As Lakoff (1987) point out, he doesn't seem to recognize that language flexibility: we can conceive of one thing (e.g., time, love) in two different ways.
- He also focuses on 'reality' rather than on culturally constructed concepts.

B. 'An American Indian Model of the Universe'

1. Hopi speakers have "no general notion of time as a smooth flowing continuum in which everything in the universe proceeds at an equal rate, out of a future, through a present and into a past; or, in which, to reverse the picture, the observer is being carried in the stream of duration continuously away from a past and into a future" (p. 57)
2. Whorf argues that Hopi contains no words or grammatical forms that refer directly to time. Instead, the grammar marks a difference between MANIFEST/OBJECTIVE and MANIFESTING/SUBJECTIVE (or unmanifest). The manifest domain includes present and past. The subjective (or manifesting) domain includes the future, mental states, and mythical events.
3. The TIME IS SPACE metaphor is also lacking: distance between events is measured in terms of the number of "periodic physical motions [which] have occurred between them" (p. 63).

4. Events that occurred outside the speaker's view are reported by means of subjective marking, since there is only indirect evidence for them. This type of system is called an EVIDENTIAL SYSTEM. It is common in the world's languages.

Turkish

Dirseğ-im- i vur -du -um
 elbow ISG.poss OBJ hit PST ISG
 "I hit my elbow!"

Dirseğ-im- i vur -mus -um
 elbow ISG.POSS OBJ hit PST ISG
 "I must have hit my elbow!" (inference)
 "They tell me I hit my elbow." (hearsay)

B. 'Languages and Logic'

1. **Whorf's main point:** "Facts are unlike to speakers whose language background provides for unlike formulation of them" (p. 235).

Shawnee (Algonquian, Oklahoma) vs. **English**.

- (a) I pull the branch aside.
 (b) I have an extra toe on my foot.

Shawnee

ni- l'thawa- 'ko -n- a
 ISGfork outline branchhand action cause

ni -l'thawa- 'ko- thite
 ISGfork outline branchpertaining to toes

- (c) I push his head back.
 (d) I drop it and it floats.

Shawnee

ni- -kwasbkwi- -tepe -n- -a
 ISGrecoil locus at head hand action cause

ni- -kwasbk- -bo -to-
 ISGrecoil locus at water cause to inanimate

- (e) The boat is grounded on the beach.
 (f) The boat is manned by a select group of men.

Both are statements about the boat. They are similar in this regard. But in Nootka, these two sentences are not similar.

Nootka (Wakashan, Southwestern British Columbia)

tlib *is* *ma*
moving pointwise on the beach manifest

lash *tskwig* *ista* *ma*
select result in a canoe as a crew manifest

2. Observations

- There is no subject-predicate division in Nootka, contrary to Aristotle's claims about the primal nature of this division.
- There are not even words as we know them.
- There is no division between nouns and verbs.
- Sentences are the same as words, i.e., a root plus prefixes and suffixes. ('Polysynthesis')
- Language does not provide an unmediated picture of reality (compare Reddy's paper on the conduit metaphor).
- "[T]o restrict thinking to English...is to lose a power of thought which once lost can never be regained. It is the "plainest" English which contains the greatest number of unconscious assumptions about nature." (p. 244)
- The very thought of learning from other language patterns about ways of conceiving of the world defies a strict version of linguistic relativity.

C. 'The Relation of Habitual Thought and Behavior to Language'

1. Whorf says: "All real scientist have their eyes primarily on background phenomena in our daily lives, and yet their studies have a way of bringing out a close relationship between these unsuspected realms and foreground activities".
2. Our man from the Hartford Fire Insurance Company comments on linguistic contributors to industrial fires. He describes a set of accidents with decreasingly plausible linguistic angles:

'Empty' as applied to gasoline drums.
Spun limestone as being noncombustible: stone as inert.
Overheated varnish moved 'off the flame: cause as contact.
Scrap lead containing paraffin on coal-fire melting pot.
Coat on heater: 'light turned on/off.
Match in the tannery pond: water as noncombustible.
Spark in the blower, which can 'exhaust as well as blow'.

3. "The cue to a certain line of behavior is often given by the analogies of the linguistic formula in which the situation is spoken of, and by which to some degree it is analyzed, classified and allotted its place in that world which is 'to a large extent built up on the language habits of the group. And we always assume the linguistic analysis made by our group reflects reality better than it does." (p. 137)
4. Turning away from individual words and phrases, Whorf focuses on the grammatical structure of languages. He asks two main questions:
 - Are the concepts of TIME, SPACE and MATTER manifested in similar ways in all languages? For Whorf, a negative answer to this question would indicate that different language communities experience the world in different ways.

- Are grammatical patterns related to cultural and behavioral norms?
5. **The category of MATTER has two different manifestations in language: entities and reified entities (like time).**

- (a) **Reification.** We can make events into countable units and abstract concepts into substances. In SAE, a cyclic phenomenon (passage of days) leads to the counting of units ('10 days', etc.). In Hopi, there are no time units (or so Whorf claims).
- (b) **Entities.** Languages differ in how or whether they distinguish between MASSES and COUNTABLE OBJECTS. Despite what Whorf implies, Native American languages do distinguish between masses and countable objects (see Lakhota example below).

- Mass vs. count in **English.**

**She saw cat.*

She saw a cat.

She saw cats.

She drank coffee.

? *She drank waters.*

? *She drank a water.*

- Mass vs. count in **French:** mass nouns receive the partitive article:

Je voudrais encore du vin.

'I would like some more wine.'

On a mangé de la choucroute.

'We ate some sauerkraut.'

- Mass vs. count in **Vietnamese:** no distinction; all specific nouns get a CLASSIFIER.

<i>Tôi ăn</i>	<i>món</i>	<i>cá.</i>
I ate	'dish' classifier	fish
'I ate fish.'		

<i>Tôi mua</i>	<i>cón</i>	<i>cá.</i>
I buy	animal classifier	fish
'I bought a fish.'		

<i>Tôi đọc</i>	<i>tờ</i>	<i>báo.</i>
I read	'paper' classifier	newspaper.
'I read the newspaper.'		

<i>Tôi gọi</i>	<i>ông</i>	<i>quan-ly.</i>
I call	'age-mate male' classifier	manager
'I called the manager.'		

- Mass vs. count in **Finnish:** boundedness signaled by the noun

Join kabvia
 drank-1SG coffee-PART
 'I drank some coffee.'

'I was drinking coffee.'

Join kabvin
 drank-1SG coffee-ACC
 'I drank the coffee.'
 'I a drank a cup of coffee.'

- Mass vs. count in **Czech**: boundedness signaled by the verb

Pil víno
 drink:3SG:MASC:IMPERF wine
 'He was drinking some wine.'
 'He drank wine.'

Vypil víno.
 drink:3SG:MASC:PERF wine
 'He drank the wine.'
 'He drank a glass of wine.'

- Mass vs. count in **Lakhota**: boundedness indicated by determiner selection

Mní ki blatké yelo.
 water def I.drank declarative
 'I drank the water.'

Mní eyá blatké yelo.
 water some I.drank declarative
 'I drank some water.'

6. The category of SPACE has two different manifestations in language: TIME-SPACE METAPHORS and SPATIAL RELATIONS.

- Hopi has no time-space metaphors according to Whorf.
- However, it does have concepts like near and far, above and below.
- Malotki (1983) argues against Whorf's view of Hopi:

...the technique of spatio-temporal metaphorization is a ubiquitous phenomenon in Hopi. It involves not only countless postpositions and adverbs of place but also a number of verbs and nouns, among them a direct equation of the noun *qeni* 'space' with the notion 'time'. (p. 15).

Malotki's examples include:

Nu pay tsa-y-ngahaqa-qw ya-n yu'a-'a-ta
 I ASSR small-size-INDEF-from this-way talk-RDP-IMPRF
 'I've been talking this way from childhood.'

Suu-kw taala-t pam a-w hoyo-k-na
 One-ACC day-ACC that REF-to move-k-CAUS
 'He added one day to it.'

7. **The category of TIME has two different manifestations in language: TEMPORAL SEQUENCE and TENSE**

- (a) Whorf observes that Hopi has no tense.
- (b) However, Hopi does have ways of indicating simultaneity and anteriority via subordinate clauses.
- (c) What's so important about tense anyway?

• **In Vietnamese, there are no obligatory tenses:**

Có một người đàn bà thương tôi điem cà phê mỗi sáng chúa nhật đi mua cà phê.

'There's a lady who always comes into the café every Sunday morning to get coffee.

Bà ta rất là xấu, ngu và mập như con heo.

She is very ugly, stupid and fat, like a pig.

*Một hôm bà ta đến và tôi **dang** nói chuyện với một người bạn làm.*

One day she arrived and I was chatting with a work friend.

Tôi hỏi bạn làm của tôi rằng: "Anh có muốn cưới một người vô ngu và mập như bà ta không?"

I asked my friend, "Would you want to marry someone stupid and fat like that?"

*Bỗng bà ấy nghe chúng tôi **dang** nói chuyện về bà ấy*

Suddenly the woman realized that we were talking about her

và bà ấy phàn-nhan cùng với ông chủ của tôi.

and she went to complain to my boss.

[...] *Và ông chủ của tôi muốn tôi xin lỗi bà ấy*

And my boss wanted me to apologize to her

*nhưng tôi **đã** không xin lỗi bà ấy vì tôi ghét bà ấy lắm.*

but I never did because I really hated her.

- In Latin, there is no one grammatical category that we could refer to as the Past tense. There are two Past forms, one for events and one for states:

<i>Marius</i>	<i>ad Zama</i>	<i>pervenit.</i>	<i>Id</i>
Marius:N	to Zama:A	went:3sg:perf:act:ind	it:N
<i>oppidum</i>	<i>munitum</i>	<i>erat.</i>	
town:N	fortified:N	was:3sg:imp:act:ind	

"Marius went to Zama. That town was well fortified." (Sallust, *Jugurtha* 57.1)

8. **Habitual thought in SAE and Hopi.**

- Hopi emphasis on preparedness can be traced to the linguistic system, in which days are not distinct but successive iterations.
- The Hopi worldview is fatalistic, as signaled by a linguistic encoding of unfolding events as 'manifesting'.

- The 'Standard Average European' mentality is one in which time is quantified, allocated, measured.
- The TIME AS A RESOURCE metaphor is said by Whorf to stem from this mindset.
- Whorf doubts that a metaphor in which time is matter is primal. It stems from an industrialized culture in which measurement of time became crucial.
- Does Whorf believe that language influences culture? That culture influences language?
- "There are connections but not correlations or diagnostic correspondences between cultural norms and linguistic patterns."
- "There is a relation between a language and the rest of the culture of the society that uses it." (p. 159)
- Does Whorf avoid circular argumentation? That is, arguments of the following form: this grammatical form implicates this fact about the culture; this culture is one that would require this form.