bilingualism

Module 2

relativity

Linguistic relativity

- Many thinkers have urged that large differences in language lead to large differences in experience and thought. They hold that each language embodies a worldview, with quite different languages embodying quite different views, so that speakers of different languages think about the world in quite different ways.
- This view is sometimes called the *Whorf-hypothesis* or the *Whorf-Sapir hypothesis*, after the linguists who made if famous. And although linguistic relativism is perhaps the most popular version of descriptive relativism, the conviction and passion of partisans on both sides of the issue far outrun the available evidence

linguistic relativity hypothesis embody two claims

- Languages, especially members of quite different language families, differ in important ways from one another.

- The structure and lexicon of one's language influences how one perceives and conceptualizes the world, and they do so in a systematic way.

- Together these two claims suggest that speakers of quite different languages think about the world in quite different ways. There is a clear sense in which the thesis of linguistic diversity is uncontroversial.

- Even if all human languages share many underlying, abstract linguistic universals, there are often large differences in their syntactic structures and in their lexicons.

- The second claim is more controversial, but since linguistic forces could shape thought in varying degrees, it comes in more and less plausible forms

Early studies on relativity with respect to bilingualism

- (Bloom, 1981)
- English and Chinese in processing counterfactual conditionals
- counterfactual conditional (a conditional that describes the consequences of events that did not happen
- E.g.
  - *If John had seen Mary, he would have known that she was distraught* -- i.e., John did not see Mary
  - Vs.
  - *If John saw Mary, he knew she was distraught* -- i.e., we don't know whether John saw Mary

  - The Chinese language does not distinguish between these two types of conditionals either lexically or grammatically, and so gives no information as to whether an event happened or not.

- Bloom created a counterfactual story about what would have happened if a philosopher named Bier had known Chinese, and asked Chinese speakers to answer questions about the story.

- Chinese monolingual speakers mostly did not interpret the story counterfactually, but those who knew L2 English did so more often.

- it provided clear evidence of effects of bilingualism on cognition.

- It was also the first study of bilinguals to look at‘grammaticalized concepts’.

Why does additional language affect cognition

- *Some areas of differences*
  - The issue of codability
  - ‘habitual thought’.

codability

- languages code concepts lexically.
- in other words, some concepts are grammmaticalized, i.e. expressed morphologically or syntactically in one language but not in another.
- Having a grammaticalized concept means having a readily available lexical term for a concept.
- E.g. Alaskan language Dena'ina has different verbs denoting how trees grow on the mountains, like , 'growing on the upper mountain side', 'growing up the mountain in strips', 'growing up the slope of the mountain', and 'growing through the pass'.

Similarly,

- Languages differ as to how they segment a continuum into labeled categories. for example, Italian has a label for light blue (azzurro)and English does not.
- So speakers of English learning Italian are exposed to a new concept through a new label or word.
- Some categories are purely linguistic, for instance animate, inanimate entities put together in same category based on some culture specific properties on which the grammaticality depends.
- For example, women, fire and dangerous things.
- Lexical and grammatical categories correspond with the conceptual categories which the L2 learner has to learn

What gets affected?

- Sensory perception

- *Perception of Color and categorization*

Studies on bilinguals prove that their color categories are in between those of the monolingual speakers of both the languages. For example, Russian English bilinguals consider dark and light blue as more similar than Russian monolinguals.

Color: bilingual perception

- Color perception has been a traditional test set for Whorf's principle of relativity, which states that speakers of different languages evaluate perceptual contrasts differently.

- Early studies showed that the speakers of Zuni, who do not distinguish between yellow' and 'orange' colors, do not distinguish the colors as frequently or accurately as English speakers do

- At the same time, the domain of color has also been used as a prime example of universality. Berlin and Kay claimed that despite the way languages name colors, their underlying representation must be universal.

- despite the way languages name colors, their underlying representation must be universal. This is because of the physical property of color itself and arguably the same physiology of vision in humans.

- They noticed that participants from diverse cultural and linguistic backgrounds, showed English like color naming and prototype identification.

- This was taken as a proof of universalism.

- These subjects were immigrants to US with varying degree of acculturation and proficiency in English.

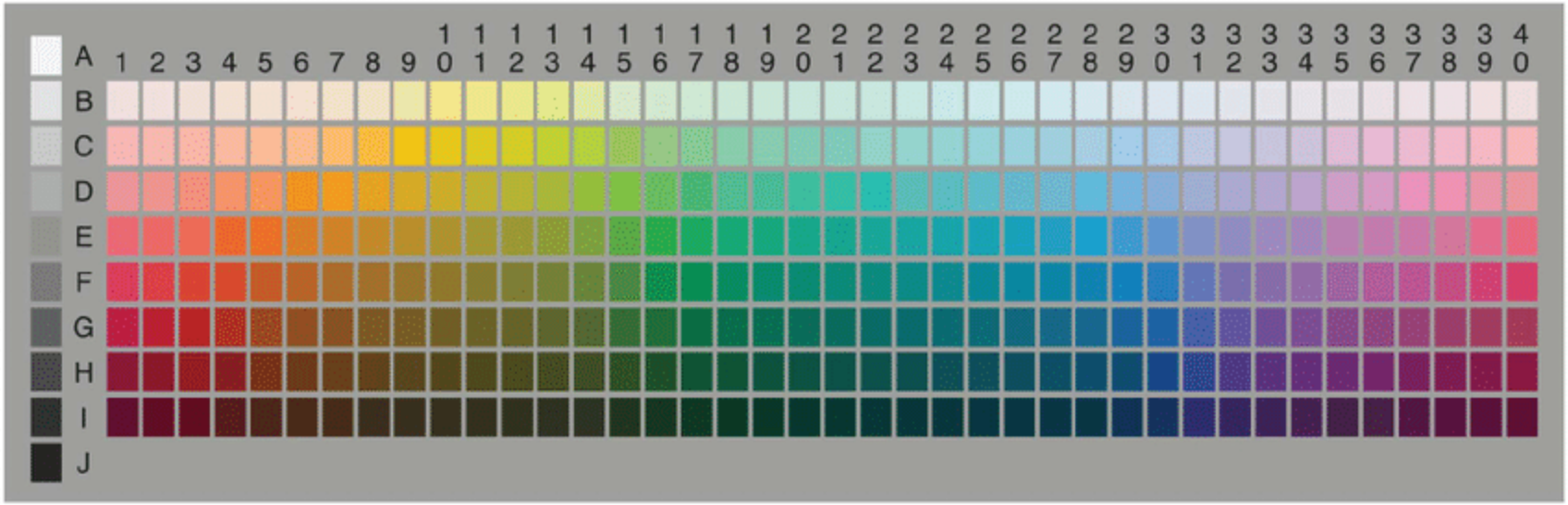
- Ervin showed that acquiring another language may lead to a shift in naming and prototype identification.

- Whorfism was revived in the 1990s, partly inspired by bilingualism research
- Hunt and Angoli [1991] claimed universalism, which was dominant at that time, was not compatible with the 'phenomenological experience of people who go back and forth from one language to another'.

- Also, a group of researchers around the same time argues that a bilingual is a unique language speaker with complete language system rather than being an imperfect version of the ideal native speaker [of the L2].

- Athanapolous carried out a replication of Ervin on Greek English bilinguals
- Greek has a two way distinction between *ble* [dark blue] and *ghalazo*[light blue].
- The participants were divided into two groups: high proficient L2 speakers living in UK and low proficient L2 speakers living in Greece.
- The task was to point to the best example of ble and ghalazo on the Munsell chips.
- Low proficient bilinguals showed a tendency to put *ble* away from *blue* focus while the high proficient group tended to put *ble* closer to the *blue* focus.
- This is in line with Ervin's finding of a shift towards L2 category in terms of color

Munsell color chart



Result of the study (Athanasopolous)

hue	10BG	5B	10B	5PB	10PB
9					
8			Advanced bilingual ghalazo		
7		Low proficient ghalazo			
6					
5					
4			Monolingual English blue Advanced bilingual ble		
3				Low proficient L2 ble prototype	
2					

- However, more interesting was the finding that the advanced bilinguals put the *ghalazo* towards the L2 color but towards a lighter hue far away from the L2 focus.

- Munsell chips shown as a two dimensional projection of hue [horizontal] and lightness [vertical, value 2 being the darkest]

- This study shows that whereas there is a semantic shift towards L2 protoypes, the speakers also maintain their perceptual distance between the two categories by further shifting *ghalazo* to 'adjust' this newly arranged system in their mind.

- *Linguistic tone, pitch patterns in languages, musical tone perception*

With regard to hearing, language has a link to pitch perception. Work on language and pitch perception has shown differences of perceiving the same pitch level differently by speakers of different languages depending on the pitch range of the first language. As a result bilinguals perform differently in these tasks compared to monolinguals.

Some researchers have also looked at the ability to perceive and produce musical tones in bilinguals who speak a tone language, e.g. Chinese. Mang (2006) showed that Cantonese English bilinguals are more in tune while singing English songs than English speaking children. It is thought to be the result of Cantonese being a tone language.

- *Taste terms and taste concepts*

Like basic color terms there are basic of taste terms as well in languages. In western languages these basic taste terms are sweet, salty, bitter and sour. But in Japnese and in Chinese, there is another taste concept called 'umami' which combines attributes of savouriness and meaty taste, found in parmesan cheese, soy sauce, marmite etc. studies have found that English learners of Japanese language could learn this concept by exposure to the lexical item and actual food samplings and this in turn affected their food categorizations.

Time, space and motion events

Motion verb:

- Languages vary a great deal in how they express motion in space. And studies in this domain have contributed to the revival of the linguistic relativity theory,
- Typically research in this domain focuses on identifying the scope of variation across different languages and how such variation can affect behavior.
- Depending on where the path information is presented in the verb phrase, languages are divided into verb framed or satellite framed languages.
  - Le garcon traverse [path] la rue en courant[manner]
  - The man runs [manner] across [path] the street

- Hence, French speakers mention manner, when it is an issue, and are less sensitive to the same. But English speakers make widespread communicative and cognitive use of this dimension.

- An interesting study tried to find out whether speakers of Greek [verb framed language] and speakers of English [satellite framed language] would attend to different aspects of a visual scene when watching a motion animation.
- They used an eye tracker to track the participants' gaze while while watching a series of clip art animations.
- They were told that they would be asked to describe the event after watching it.
- It was found that the Greek participants looked at the path end point first and only later looked at the instrument depicting manner. English speakers showed the opposite pattern.
- However, no such effect was observed when they were told to remember the event without having to describe them.

Motion events:

- Descriptions of motion events in L2 learners are affected by their first language.
- On the other hand, the L2 also affects conceptualization in L1

- Japanese English bilinguals encode manner more in L1 Japanese than Japanese monolinguals.

- L1 descriptions of motion verbs in terms of manner and path are affected by L2.

- English learners of French find it difficult to convey the same level of density [path + manner] in their second language as expressed in their L1 and as a result often ‘flout’ rules of their L2 to manage the same.

Temporal events

- Temporal relations are encoded differently in different languages. In many languages, there are three basic temporal relations, simultaneity, before and after. These have corresponding tense and aspect markers. English marks both tense and aspect, modern Hebrew marks tense, but not aspect, Mandarin Chinese marks neither tense nor aspect.

- Although some morphemes have been identified as aspect marker of some sorts, they donot carry that function and meaning exclusively. For example, 'guo' , which is understood as a aspect marker, can also mean 'to pass' as a verb and so on.

- Even when the aspect marker is present, the time of an event is usually jointly determined by aspect marker and other factors such as verbal semantics, situation type of the verb etc.

- In a study conducted on Mandarin Chinese speakers. The participants were presented with set of pictures depicting three different temporal event [past, present and future]. And they were asked to describe them, individually. Chinese participants showed a tendency to describe past and future phases as present. however, when told beforehand that each action could assume one of the three temporal phases, this tendency disappeared. This is interpreted as reflecting their 'habitual way' of looking at things. This is in line with other similar findings on Indonesian language speakers. "direct lexical entry for a concept speeds up speaker's processing time"

- **Bilingual Chinese study:**
- The study used two groups of Chinese English bilinguals: high and low proficient.

- Material: 18 action events [blowing up a balloon, crossing a log, erasing something on a whiteboard etc]. One woman performed all the actions. A snapshot was taken at each of the temporal phases of the action event: about to cut a rope, is cutting a rope, has finished cutting a rope. Altogether there were 54 pictures. For each picture a Chinese sentence was created to describe the event. Another 62 pictures and sentences describing people or objects were used a fillers [this is a teacher, this is a pen…].

- The participants saw a total of 80 sentences [62 non target and 18 target]. Each sentence was followed by two pictures: one matched the sentence, other depicting the same action in a different temporal phase [target condition] or a different object or occupation [in non target condition]. The participants had to choose which of the pictures depicted the sentence by pressing a 'left' or 'right' key. This was RT study.

- The results showed high proficient bilinguals had an advantage in accessing the temporal phase of the action in past and future phase, though not in present. The low proficient bilinguals performed like Chinese monolingual in the previous study.