

THE APPLICATION OF SAPIR - WHORF HYPOTHESIS
IN ENGLISH TEACHING IN CHINA

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THE APPLICATION OF SAPIR - WHORF HYPOTHESIS
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Yuan Huiling(Rosemary Yuan)

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Abstract

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Yuan Huiling

Under the Supervision of Dr. Richard Garrett

The Sapir - Whorf Hypothesis holds that the structure of a language affects the ways in which its speakers conceptualize their world. Popularly known as the principle of linguistic relativity, or Whorfianism, the principle is often defined as having two versions: (i) the strong version that language determines thought and that linguistic categories limit and determine cognitive categories and (ii) the weak version that linguistic categories and usage influence thought and certain kinds of non-linguistic behaviour. Starts from 19th century thinkers, the Sapir-Whorf Hypothesis has existed for hundred years. From the birth it has been paid close attention to, till 1960s, the principle experience a series of spiculate criticism and query, and nowadays, along with the development of science, the study of SWH, which has change to linguistic relativity gradually, is going on and become better

As a part of, or a proof of top-down processing, which is against the bottom-up processing, the study of SWH is meaningful. The study of The centro-parietal N200 is a powerful evidence of the visuality of Chinese. Comparing with the feature of English, we can find some special difficulties which Chinese meet when we learn English. Hence, we can also come up with some countermeasures.

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CHAPTER 1

INTRODUCTION

Between 1920 and 1950 Edward Sapir and Benjamin Whorf raised some disturbing questions about the role of language.(Edward Sapir,1949,John B. Carroll,1956) Suppose, they suggested, that while we must use a language to communicate, human thought is limited and directed by whatever particular language one may choose to think and speak. Suppose further that the structure of thought,and the way we represent reality to ourselves and others, is pulled in some directions, pushed in others, and generally warped by the language in ways beyond control of the thinker. This notion, the Sapir-Whorf Hypothesis, suggests that our language more than our actual experience may determine our conception of "reality." It is the same fundamental notion that was partially resurrected in McLuhan's caveat "the medium is the message.(Marshall McLuhan,1964)

The Sapir-Whorf Hypothesis(SWH) is particularly relevant in the discussion of linguistic relativity. It claims, in essence, that a language selects and isolates certain aspects of the 'kaleidoscopic flux of impressions' and thus structures reality for us. The following quotation from Edward Sapir (1884-1939) illustrates this assumption:' Human beings do not live in the objective world alone nor alone in the world of social activity as ordinarily understand, but are very much at the mercy of the particular language which has become the medium of expression for their society .It is quite an illusion to imagine that one adjusts to reality essentially without the use of language and that language is merely an incidental means of solving specific problems of communication or reflection' (Sapir ,1963:162). Benjamin Lee Whorf(1897-1941), who was Sapir's student found this concept of linguistic relativity confirmed when he studied Hopi and discovered that the grammatical categories of Hopi and those of European Languages select and

highlight different aspects of reality. From this insight he drew the conclusion that each language embodies a different world view:

We dissect nature along lines laid down by our native languages. The categories and types that we isolate from the world of phenomena we do not find there because they stare every observer in the face; on the contrary, the world is presented in a kaleidoscopic flux of impressions which has to be organized by our minds- and this means largely by the linguistic systems in our minds. (Whorf, 1956: 213)

From the interpretations of Sapir's and Whorf's writing a strong and weak version of linguistic relativity was developed. The strong version, which is also called linguistic determinism of Sapir-Whorf hypothesis advocates that language is not merely a means of expressing ideas, but is the very factor that shapes those ideas, and one cannot think outside the confines of their language. While the weak version, the linguistic relativity, states that the structure of language merely influences the manner one interprets the reality and behaviors in accordance to it.

The strong version was vigorously debated in various disciplines from linguistics to philosophy and psychology. The philosopher Elmar Holenstein severely criticises the strong version of the SWH and uses the following example to refute it. When for example, a language such as Chinese does not possess the second conditional- 'If I had wings, I could fly'- the conclusion, according to the strong version, is that the Chinese are not capable of imagining unreal situations.

According to the strong version, language does not reflect reality but produces it. The weak version accepts the view that language is not a transparent window to reality but stresses that language itself is influenced by our natural, social and cultural environment. Language and reality are interdependent. This implies that reality is also reflected in the language. In her

autobiography *Lost in Translation*, Eva Hoffman shows how in the North American context the terms 'friendship', 'kindness' and 'silliness' differ in meaning from their Polish equivalents and point to different world views. Therefore she is 'lost in translation' after her arrival in North America, but finally she is able to live in both worlds and can translate between them. The pedagogical implication of the weak version of the SWH for foreign language learning is that it is possible to understand different world views and become aware of one's own. Language shapes how we perceive the world, but we are not imprisoned by it.

The question of linguistic relativity also plays an important role in the debate about postcolonial literature. According to the strong version of the SWH, post-colonial authors should not write in colonial languages because they would otherwise take over the world view of the imperialists and betray their own. However, post-colonial authors who write in colonial languages stress that a language can embody many world views and that one can make the foreign language one's own. Chinua Achebe says about writing in English: 'And let no one be fooled by the fact we may write in English for we intend to do unheard things with it'(1957:7). According to the weaker form of the SWH, there is a mutual dependence between biological, social and linguistic reality.

Sapir and Whorf stressed linguistic relativity in order to understand every language on its own terms and to respect the world view inherent in each. Sapir wrote: 'Many primitive languages have a formal richness, a latent luxuriance of expression, that eclipses anything known to the languages of modern civilization ' (Sapir,1921:22). Whorf goes on to argue that we can only appreciate the achievements of each language when we transcend the language and look at it from the outside:' The situation is somewhat analogous to that of not missing the water till the well runs dry, or not realizing that we need air till we are choking ' (Whorf,1956:209).Hence

translations are important. They defamiliarise the familiar:' It was to me almost as enlightening to see English from the entirely new angle necessitated in order to translate it into Hopi as it was to discover the meanings of the Hopi forms themselves ' (Whorf,1956:112f).

These considerations can illustrate the relation-ship between relativism and universalism in the SWH. On the one hand Sapir and Whorf stress the relativity of languages: we must see them from within and not judge them from the outside. On the other hand, however, we can only appreciate their achievements when we transcend our own language and understand what different languages have in common. Whorf especially is interested in the basic structures of perception and thinking which all human beings share: ' My own studies suggest, to me, that language, for all its kingly role, is in some sense a superficial embroidery upon deeper processes of consciousness ···' (Whorf,1956:239). For Whorf it is 'a great fact of human brotherhood' that all human beings have an 'intellectual mind' which can 'systematize and mathematize on a scale and scope that no mathematician of the schools ever remotely approached' (Whorf,1956:257).

It is true that the strong version is not only criticized by many scholars, but also lack of direct empirical research through most of the present century. While from the late 1980s a new school of linguistic relativity scholars have examined the effects of differences in linguistic categorization on cognition, finding broad support for weak versions of the hypothesis in experimental contexts.(Koerner,2000) Some effects of linguistic relativity have been shown in several semantic domains, although they are generally weak. Currently, a balanced view of linguistic relativity is espoused by most linguists holding that language influences certain kinds of cognitive processes in non-trivial ways, but that other processes are better seen as subject to universal factors.

The linguistic relativity (SWH) stipulates that 'We cut nature up, organize it into

concepts, and ascribe significances as we do, largely because we are parties to an agreement to organize it in this way -- an agreement that holds throughout our speech community and is codified in the patterns of our language [...] all observers are not led by the same physical evidence to the same picture of the universe, unless their linguistic backgrounds are similar, or can in some way be calibrated' (Whorf, 1956: 212-14). It is as if our way of seeing, organizing and discussing the world depended on some gene possessed by all who belong to the same society or culture. Although the Sapir-Whorf hypothesis was discredited in the 1970s by studies on colour terminology which showed that universal semantic constraints existed, the debate continued with, among others, Joshua Fishman proposing that language was a key to a culture, a vague enough concept allowing everybody to run with it. It seems obvious that important cultural differences reveal themselves in words referring to time and space for example, as well as in metaphors/associations (for example the association of time and money in English).

Statement of the Problem

Summarize the history of SWH, including the intellectual history,, the empirical researches.And try to find the application of SWH in English teaching in China.

Definition of Terms

Linguistic relativity The principle of linguistic relativity holds that the structure of a language affects the ways in which its speakers conceptualize their world, i.e. their world view, or otherwise influence their cognitive processes. Popularly known as the Sapir–Whorf hypothesis, or Whorfianism, the principle is often defined as having two versions: (i) the strong version that language determines thought and that linguistic categories limit and determine cognitive

categories and (ii) the weak version that linguistic categories and usage influence thought and certain kinds of non-linguistic behaviour.

The Sapir–Whorf hypothesis is a linguistic idea. It is the claim that the language people speak changes the way they think and act.

Linguistic determinism is the idea that language and its structures limit and determine human knowledge or thought. Determinism itself refers to the viewpoint that all events are caused by previous events, and linguistic determinism can be used broadly to refer to a number of specific views.

Universal grammar is a theory in linguistics, usually credited to Noam Chomsky, proposing that the ability to learn grammar is hard-wired into the brain. The theory suggests that linguistic ability manifests itself without being taught, and that there are properties that all natural human languages share. It is a matter of observation and experimentation to determine precisely what abilities are innate and what properties are shared by all languages.

Linguistic universal is a pattern that occurs systematically across natural languages, potentially true for all of them. For example, All languages have nouns and verbs, or If a language is spoken, it has consonants and vowels.

Pictogram, also called a pictogramme or pictograph, is an ideogram that conveys its meaning through its pictorial resemblance to a physical object. Pictographs are often used in writing and graphic systems in which the characters are to a considerable extent pictorial in appearance. Pictography is a form of writing which uses representational, pictorial drawings. It is

a basis of cuneiform and, to some extent, hieroglyphic writing, which also uses drawings as phonetic letters or determinative rhymes.

Alphabet , is a standard set of letters (basic written symbols or graphemes) which is used to write one or more languages based on the general principle that the letters represent phonemes (basic significant sounds) of the spoken language. This is in contrast to other types of writing systems, such as syllabaries (in which each character represents a syllable) and logographies (in which each character represents a word, morpheme or semantic unit)(Florian,1996).A true alphabet has letters for the vowels of a language as well as the consonants.

CHAPTER 2

REVIEW OF RELATED LITERATURE

The History of Linguistic relativity and Sapir-Whorf Hypothesis

In 19th century, Wilhelm von Humboldt think that language is the expression of the nation' s spirit. Come to 20th century, Franz Boas and Edward Sapir, who leaded the school of American Anthropology also embraced the idea to another extent, In spite of that, Sapir wrote often against linguistic determinism. Then Benjamin Lee Whorf, as a student of Sapir, came to be seen as the primary proponent as a result of his published observations. Roger Brown and Eric Lenneberg conducted a experiments designed to find out whether color perception varies between speakers of languages that classified colors differently. They reformulated Whorf' s principle of linguistic relativity was reformulated as a hypothesis. So the term "Sapir-Whorf Hypothesis" is a misnomer as the men never co-authored anything and never stated their ideas in terms of a hypothesis. The notion of "weak" and "strong" versions of Whorf's principle of linguistic relativity is a misunderstanding of Whorf promulgated by Stuart Chase, whom Whorf considered "utterly incompetent by training and background to handle such a subject." (Penny Lee, 1996) In the 1960' s, the idea of linguistic relativity fell out of favour among linguists because of the study of the universal nature of human language and cognition. Harry Hoijer, another students of Sapir's, introduced the term "Sapir - Whorf hypothesis" (Hoijer, 1954). A study in 1969 by Brent Berlin and Paul Kay discredited the Sapir - Whorf hypothesis, claiming to demonstrate that color terminology is subject to universal semantic constraints.

But the idea that language and thought are intertwined goes back to the classical civilizations. Famously Plato argued against sophist thinkers such as Gorgias of Leontini, who held the physical world cannot be experienced except through language, this meant that for

Gorgias the question of truth was dependent on aesthetic preferences or functional consequences. Contrary to this idea Plato held that the world consisted in pre-given eternal ideas and that language in order to be true should strive to reflect these ideas as accurately as possible. (McComiskey, Bruce 2001) Following Plato, St. Augustine, for example, held the view that language was merely labels applied to already existing concepts, and this view remained prevalent throughout the middle ages. (Gumperz & Levinson, 1997) Others held the opinion that language was but a veil covering up the eternal truths hiding them from real human experience. For Immanuel Kant, language was but one of several tools used by humans to experience the world.

German Romantic philosophers

In the late 18th and early 19th century the idea of the existence of different national characters, or "Volksgeister", of different ethnic groups was the moving force behind the German school of national romanticism and the beginning ideologies of ethnic nationalism.

In 1820, Wilhelm von Humboldt connected the study of language to the national romanticist program by proposing the view that language is the very fabric of thought. That is, thoughts are produced as a kind of inner dialog using the same grammar as the thinker's native language. (Trabant, Jürgen, 2000). This view was part of a larger picture in which the world view of an ethnic nation, their "Weltanschauung", was seen as being faithfully reflected in the grammar of their language. Von Humboldt argued that languages with an inflectional morphological type, such as German, English and the other Indo-European languages were the most perfect languages and that accordingly this explained the dominance of their speakers over the speakers of less perfect languages. Wilhelm von Humboldt declared in 1820:

The diversity of languages is not a diversity of signs and sounds but a diversity of views of

the world.

Boas and Sapir

In the early 20th century, The idea that some languages were naturally advanced to others and that the use of primitive languages maintained their speakers in intellectual poverty was widespread. Take the the American linguist William Dwight Whitney for example, who actively strove to eradicate the Native American languages arguing that their speakers were savages and would be better off abandoning their languages and learning English and adopting a civilized way of life.(Seuren, 1998) Franz Boas, who was educated in Germany in the late 19th century where he received his doctorate in physics,was the first anthropologist and linguist to challenge this view .(Seuren, 1998)In contrast to von Humboldt, Boas always insist that all language were capable of expressing the similar live and feelings by highly diversities means.He denys the concept of "primitive language",and stressed the equal worth of all cultures and languages. Boas saw language as an inseparable part of culture and he was among the first to require of ethnographers to learn the native language of the culture being studied, and to document verbal culture such as myths and legends in the original language.

According to Franz Boas:

It does not seem likely [...] that there is any direct relation between the culture of a tribe and the language they speak, except in so far as the form of the language will be moulded by the state of the culture, but not in so far as a certain state of the culture is conditioned by the morphological traits of the language."(Boas, Franz (1911))

Boas' student Edward Sapir follow the Humboldtian idea that languages contained the key to understanding the differing world views of peoples. In his writings he express the idea that no two languages were ever similar enough to allow to perfect translation between them, because of

the surprising differences between the grammar of different languages . Sapir also thought because language represented reality differently, the speakers of different languages should perceive reality differently. According to Edward Sapir:

No two languages are ever sufficiently similar to be considered as representing the same social reality. The worlds in which different societies live are distinct worlds, not merely the same world with different labels attached.(Sapir, Edward ,1929)

On the other hand, Sapir explicitly rejected strong linguistic determinism by stating, "It would be naïve to imagine that any analysis of experience is dependent on pattern expressed in language."(Edward Sapir & Morris Swadesh,1946)

Sapir argue that if the connections between language and culture really existed ,he thought that they were neither thoroughgoing nor particularly deep,:

It is easy to show that language and culture are not intrinsically associated. Totally unrelated languages share in one culture; closely related languages--even a single language--belong to distinct culture spheres. There are many excellent examples in Aboriginal America. The Athabaskan languages form as clearly unified, as structurally specialized, a group as any that I know of. The speakers of these languages belong to four distinct culture areas... The cultural adaptability of the Athabaskan-speaking peoples is in the strangest contrast to the inaccessibility to foreign influences of the languages themselves.(Sapir ,1921)

Sapir offers similar observations about speakers of so-called "world" or "modern" languages.He point out that "possession of a common language is still and will continue to be a smoother of the way to a mutual understanding between England and America, but it is very clear that other factors, some of them rapidly cumulative, are working powerfully to counteract this leveling influence. A common language cannot indefinitely set the seal on a common culture

when the geographical, physical, and economics determinants of the culture are no longer the same throughout the area."(Sapir ,1921)

While Sapir never made a point of studying directly how languages affected the thought processes of their speakers, some notion of (probably "weak") linguistic relativity lay inherent in his basic understanding of language, and would be taken up by his student Benjamin Lee Whorf.

Benjamin Lee Whorf

Benjamin Lee Whorf has become associated with "the principle of linguistic relativity" more than any other linguist. Benjamin Lee Whorf does not merely assuming that language influences the thought and behavior of its speakers, but also account for the way their speakers perceived the world.

Whorf has been criticized his 'amateur' status, they suggest that he was unqualified because he does not have a degree in linguistics. For example Eric Lenneberg, Noam Chomsky and Steven Pinker have criticized him for not being fully clear in his formulation, nor could he provide actual proof of his assumptions.

However John A. Lucy once wrote "despite his 'amateur' status, Whorf's work in linguistics was and still is recognized as being of superb professional quality by linguists".

Other scholar even considered Whorf to be the best man available to take over Sapir's graduate seminar in Native American linguistics.

Most of his arguments were in the form of examples that were anecdotal or speculative in nature. Whorf's argues:

We dissect nature along lines laid down by our native language. The categories and types

that we isolate from the world of phenomena we do not find there because they stare every observer in the face; on the contrary, the world is presented in a kaleidoscope flux of impressions which has to be organized by our minds—and this means largely by the linguistic systems of our minds. We cut nature up, organize it into concepts, and ascribe significances as we do, largely because we are parties to an agreement to organize it in this way—an agreement that holds throughout our speech community and is codified in the patterns of our language [...] all observers are not led by the same physical evidence to the same picture of the universe, unless their linguistic backgrounds are similar, or can in some way be calibrated(Whorf , 1956)

Among Whorf's has some well known examples of linguistic relativity where an indigenous language has several terms for a concept that is only described with one word in English and other European languages. One of examples was the supposedly many words for 'snow' in the Inuit language, which has later been shown to be a misrepresentation (Pullum,1991), but also for example how the Hopi language describes water with two different words for drinking water in a container versus a natural body of water. These examples showed that indigenous languages sometimes made more fine grained semantic distinctions than European languages. It also indicate that direct translation between two languages is not always possible.

Whorf has another example of attempting to show that language use affects behavior. When he was inspecting a chemical plant in a insurance company(he worked as a fire inspector), he once observed a plant which had two storage rooms for gasoline barrels, one for the full barrels and one for the empty ones. He noticed that no employees smoked cigarettes in the room for full barrels but they do not seem to mind smoking in the room with empty barrels, But they were probably aware of fact that it was much more dangerous due to the highly flammable

vapors that still existed in the barrels. He concluded that the use of the word empty in connection to the barrels had led the workers to unconsciously regard them as harmless despite of their awareness.

This example was criticized by some linguistic. Lenneberg argue that it did not demonstrated the causality between the use of the word empty and the action of smoking. Moreover, Steven Pinker ridiculed this example by claiming that this was a failing of human insight rather than language.

Whorf's most elaborate argument for the existence of linguistic relativity :

He thinks that the Hopi language does not treat the flow of time as a sequence of distinct, countable instances but rather as a single process and consequentially. It does not have nouns referring to units of time. He proposed that this view of time was fundamental in all aspects of Hopi culture.

Whorf died in 1941 at the age of 44, left a number of unpublished papers. His line of thought was continued by linguists and anthropologists such as Harry Hoijer and Dorothy D. Lee. They continued the investigations into the effect of language on habitual thought. The most important event of Whorf's ideas was the publication of his topic of linguistic relativity in the book "Language, Thought and Reality" edited by J. B. Carroll, in 1956.

The universalist period

The universalist theory of language argues that all languages share the same underlying structure. Lenneberg began the development of the this theory as one of the first cognitive scientists, and it was finally formulated by Noam Chomsky in the form of Universal Grammar. It is believed by The Chomskyan school that linguistic structures are largely innate. They also think that what are perceived as differences between specific languages do not have much thing

to do with cognitive processes, which are universal to all human beings. After the 1980s, the notion of linguistic relativity fell out of favor and became even the object of ridicule. The universalist theory of language argues became the dominant paradigm in American linguistics from then on. (Gumperz & Levinson, 1997)

The studies by Brent Berlin and Paul Kay had great influence on the universalist theory in the 1960s. It continued Lenneberg's research in color terminology, and showed clear universal trends in color naming. John A. Lucy objected to these studies, he argued that Berlin and Kay's conclusions were skewed by their insistence that color terms should encode only color information. (Berlin & Kay, 1969) This made them blind to the instances in which color terms provided other information that might be considered examples of linguistic relativity. There were other universalist researchers such as Ekkehart Malotki, dedicated themselves attacking specific points Whorf. (Gumperz & Levinson, 1997) Whose monumental study of time expressions in Hopi presented many examples that challenged Whorf's interpretation of Hopi language and culture as being "timeless". (Pinker, 1994)

Steven Pinker, who is a follower of the universalist school of thought, still oppose the idea of linguistic relativity. He argues that thought is independent of language, that language is itself meaningless in any fundamental way to human thought in his book *The Language Instinct* Pinker called it "Whorf's radical position" He argues that "the more you examine Whorf's arguments, the less sense they make." (Casasanto 2008, Lucy 1992a, Lakoff 1987)

Empirical research

John Lucy has identified three main strands of research into linguistic relativity. (Lucy, 1997) The first is what he calls the "structure centered" approach. This

approach starts with observing a structural peculiarity in a language and goes on to examine its possible ramifications for thought and behavior. The first example of this kind of research is Whorf's observation of discrepancies between the grammar of time expressions in Hopi and English. More recent research in this vein is the research made by John Lucy describing how usage of the categories of grammatical number and of numeral classifiers in the Mayan language Yucatec result in Mayan speakers classifying objects according to material rather than to shape as preferred by speakers of English.(Lucy, 1992)

The second strand of research is the "domain centered" approach, in which a semantic domain is chosen and compared across linguistic and cultural groups for correlations between linguistic encoding and behavior. The main strand of domain centered research has been the research on color terminology, although this domain according to Lucy and admitted by color terminology researchers, is not ideal for studying linguistic relativity, because color perception, unlike other semantic domains, is known to be hard wired into the neural system and as such subject to more universal restrictions than other semantic domains. Since the tradition of research on color terminology is by far the largest area of research into linguistic relativity it is described below in its own section. Another semantic domain which has proven fruitful for studies of linguistic relativity is the domain of space(Lucy ,1997) Spatial categories vary greatly between languages and recent research has shown that speakers rely on the linguistic conceptualization of space in performing many quotidian tasks. Research carried out by Stephen C. Levinson and other cognitive scientists from the Max Planck Institute for Psycholinguistics has reported three basic kinds of spatial categorization and while many languages use combinations of them some languages exhibit only one kind of spatial categorization and corresponding differences in behavior. For example the Australian language Guugu Yimithirr only uses absolute directions

when describing spatial relations — the position of everything is described by using the cardinal directions. A speaker of Guugu yimithirr will define a person as being "north of the house", while a speaker of English may say that he is "in front of the house" or "to the left of the house" depending on the speaker's point of view. This difference makes Guugu yimithirr speakers better at performing some kinds of tasks, such as finding and describing locations in open terrain, whereas English speakers perform better in tasks regarding the positioning of objects relative to the speaker (for example telling someone to set a round table putting forks to the right of the plate and knives to the left would be extremely difficult in Guugu yimithirr).(Levinson ,1996)

The third strand of research is the "behavior centered" approach which starts by observing different behavior between linguistic groups and then proceeds to search for possible causes for that behavior in the linguistic system. This kind of approach was used by Whorf when he attributed the occurrence of fires at a chemical plant to the workers' use of the word 'empty' to describe the barrels containing only explosive vapors. One study in this line of research has been conducted by Bloom who noticed that speakers of Chinese had unexpected difficulties answering counter-factual questions posed to them in a questionnaire. After a study he concluded that this was related to the way in which counter-factuality is marked grammatically in the Chinese language. Another line of study by Frode Strømnes examined why Finnish factories had a higher occurrence of work related accidents than similar Swedish ones. He concluded that cognitive differences between the grammatical usage of Swedish prepositions and Finnish cases could have caused Swedish factories to pay more attention to the work process where Finnish factory organizers paid more attention to the individual worker.(Lucy,1997)

Color terminology research

There are two formal sides to the color debate, the universalist and the relativist. The universalist side claims that our biology is one and the same and so the development of color terminology has absolute universal constraints, while the relativist side claims that the variability of color terms cross-linguistically points to more culture-specific phenomena. Because color exhibits both biological and linguistic aspects, it has become a largely studied domain that addresses the linguistic relativity question between language and thought.(Seidner, Stanley S. 1982)

The color debate was made popular in large part due to Brent Berlin and Paul Kay' s famous 1969 study and their subsequent publishing of Basic Color Terms: Their Universality and Evolution.(Berlin, Brent & Kay, Paul ,1969)Although most of the work on color terminology has been done since Berlin & Kay' s famous study, other research are earlier than it, including the mid-nineteenth century work of William Ewart Gladstone and Lazarus Geiger which are also in front of the Sapir - Whorf hypothesis, as well as the work of Eric Lenneberg & Roger Brown in 1950s and 1960s.

The universalist theory that color cognition is an innate, physiological process rather than a cultural one was started in 1969 by Brent Berlin andPaul Kay in the study detailed in their book Basic Color Terms: Their Universality and Evolution(Berlin, Brent & Kay, Paul ,1969) The study was intended to challenge formerly prevailing theory of linguistic relativity set forth by chief linguistic figures Edward Sapir and Benjamin Lee Whorf in the Sapir - Whorf Hypothesis. They found that there are universal restrictions on the number of basic color terms that a language can have and the ways in which the language can employ these terms. The study included data collected from speakers of twenty different languages from a number of different language families. Berlin and Kay identified eleven possible basic color categories: white, black,

red, green, yellow, blue, brown, purple, pink, orange, and grey.

Berlin and Kay also found that, in languages with less than the maximum eleven color categories, the colors found in these languages followed a specific evolutionary pattern. This pattern is as follows:

- 1 All languages contain terms for black and white.
- 2 If a language contains three terms, then it contains a term for red.
- 3 If a language contains four terms, then it contains a term for either green or yellow (but not both).
- 4 If a language contains five terms, then it contains terms for both green and yellow.
- 5 If a language contains six terms, then it contains a term for blue.
- 6 If a language contains seven terms, then it contains a term for brown.
- 7 If a language contains eight or more terms, then it contains a term for purple, pink, orange, and/or grey.

In addition to following this evolutionary pattern absolutely, each of the languages studied also selected virtually identical focal hues for each color category present. For example, the term for "red" in each of the languages corresponded to roughly the same shade in the Munsell color system. Consequently, they posited that the cognition, or perception, of each color category is also universal. (Berlin, Brent & Kay, Paul, 1969)

A later study supporting this universal, physiological theory was done by Kessen, Bornstein, and Weiskopf. In this study, sixteen four-month-old infants were presented with lights of different frequencies corresponding to different colors. The lengths of habituation were measured and found to be longer when the infant was presented with successive hues surrounding a certain focal color than with successive focal colors. Kessen, Bornstein and

Weiskopf therefore claim that the ability to perceive the same distinct focal colors is present even in small children.(Bornstein, M.; Kessen, W.; Weiskopf, S. 1976)

Barbara Saunders and John A. Lucy are two scholars who are prominent advocates of the opposing relativist position.

Barbara Saunders believes that Berlin and Kay's theory of basic color terminology contains several unspoken assumptions and significant flaws in research methodology. Included in these assumptions is an ethnocentric bias based on traditions of Western scientific and philosophical thought. She regards the evolutionary component of Berlin and Kay's theory as "an endorsement of the idea of progress" and references Smart's belief that it is "a Eurocentric narrative that filters everything through the West and its values and exemplifies a universal evolutionary process of modernization."

With regards to Berlin and Kay's research, Saunders criticizes the translation methods used for the color terms they gathered from the 78 languages they had not studied directly. Like many others, she also questions the effectiveness of using the Munsell color system in the elicitation of color terminology and identification of focal hues. She feels that "use of this chart exemplifies one of the mistakes commonly made by the social sciences: that of taking data-sets as defining a (laboratory) phenomenon which supposedly represents the real world", and entails "taking a picture of the world for the word and then claiming that that picture is the concept". Finally, she takes issue with the anomalous cases of color term use that she believes Berlin, Kay and Merrifield disregarded in their work on the World Color Survey for the purpose of purifying their results.(Saunders, B. 1995)

John A. Lucy's criticisms of Berlin and Kay's theory are similar to those of Saunders and other relativists, primarily focusing on shortcomings in research methodologies and the

assumptions that underlie them.

Lucy believes that there are problems with how linguistic analysis has been used to characterize the meanings of color terms across languages. Referential range (what a color term can refer to) and grammatical distribution (how the term can be used) are two dimensions Lucy believes are critical to defining the meaning of a term, both of which "are routinely ignored in research on color terms which focuses primarily on denotational overlap across languages without any consideration of the typical use of the terms or their formal status". He also feels that any attempt to contrast color term systems requires understanding of each individual language and the systems it uses to structure reference.

Lucy also believes that there is significant bias present in the design of Berlin and Kay's research, due to their English-speaking and Western points of view. He thinks the use of the Munsell color system demonstrates their adherence to the ideas that "speech is about labeling accuracy" and that "meaning is really about accurate denotation" which he believes "both derive directly from the folk understandings of English speakers about how their language works". He refers to Conklin's study of Hanunóo(Conklin, H.C. 1955) as a demonstration of what a study might reveal about a language's color term system when such bias is not present. He demonstrates that "an 'adequate knowledge' of the system would never have been produced by restricting the stimuli to color chips and the task of labeling". (original emphasis).

In summation, he feels that the approach universalists have taken in researching color term universals "sets up a procedure which guarantees both their discovery and their form" and that "it does not really even matter whether the researchers involved are open-minded and consciously willing to recognize relativism as a possible outcome – because the universalist conclusion is guaranteed by their methodological assumptions".(Lucy, J. A. 1997)

Recently, there are also a series of researches standing by the relativist position. Davies and Paul T. Sowden report a cross-cultural study of speakers of Setswana and of English carried out as a test of the linguistic relativity hypothesis. These languages differ in their number of 'basic' colour terms--English has eleven and Setswana has five--and in the position of some colour category boundaries. Speakers of the two languages did a 'triads' task in which they chose which of three colours was least like the other two. There were two types of triad: 'controls', for which any linguistic influences should lead to the same choices, and 'experimental', for which any linguistic influences should lead to different choices by the two groups.

Thus the universalist position predicts that the choices of the two samples should be essentially the same for all triads, whereas the relativist position predicts that choice should be the same for the control triads, but differ for the experimental triads.

The most striking feature of the results was that the choices made by the two samples were very similar for both kinds of triads, thus supporting universalism. But, there were also small but reliable differences associated with the linguistic differences, thus supporting Whorfianism. Overall, it appears that there is a strong universal influence on colour choice but this universal influence can be moderated by cultural influences such as language, a position consistent with 'weak Whorfianism'. (R. L. Davies, Paul T. Sowden, 1998) And this experiment had been repeated by other researches then.

Other empirical research

Besides the traditional theories of studying SWH such as color terminology, some other work that turned out to support the linguistic relativity had been done, by which those researches find some new and instructive proof.

Elise D. Prins reports a case from Africa. South Africa is a country of many languages and

cultures. Education is mostly in English which implies that about 80% of all secondary school students are second language learners. They found that many mathematical problems are posed in real-life contexts. Prins believe that it not only introduces more language in mathematics texts, but also more issues related to culture. The study was therefore guided by research questions such as: what linguistic and cultural factors in the ordinary language of mathematics texts influence readability? Protocol analysis was used with students aged 17 ± 18 years to establish readability problems. Linguistic as well as cultural factors were identified and the hypothesis that improved readability of mathematics assignments improves achievement was confirmed in a number of cases. Prins came to a conclusion that writers of mathematics texts should therefore consider linguistic as well as cultural factors when writing for different reading audiences. (Prins, 1998)

The study of cognitive development also comes to some very heuristic conclusions. The Sapir-Whorf hypothesis fascinates scholars and laics alike: Does the language we speak influence how we think? Evidentiality provides a new and exciting arena for examining this hypothesis. Existing research suggests that the understanding of nonlinguistic information sources develops earlier than the comprehension of evidentials, which indicates the possibility that the comprehension of evidentials maps onto an existing conceptual framework, not vice versa (Papafragou et al., 2007). Yet research begins to suggest strong correlations between the semantic and pragmatic understanding of evidentials and several aspects of cognition, such as source memory and inferential reasoning. For example, in their paper Aksu-Koç, Ögel-Balaban, and Alp demonstrate that Turkish-speaking children are better able to retain nonlinguistic source information than are same age English-speaking children. Aydin and Ceci indicate that Turkish-speaking children may also be less susceptible to the influence of conflicting testimony in court (Tomoko Matsui, Stanka A. Fitneva, 2009). Drawing on these correlational data, one can

envisage the possibility that the thinking of a person who habitually uses and hears evidentials differs in some important ways from the thinking of a person who rarely uses or hears source information in language.

The third one is come from Neuroscience. John X. Zhang this punished a paper about centro-parietal N200. The centro-parietal N200 is a new brain wave we first observed three years ago. It is a negative deflection in event-related potentials (ERP) elicited by two-character Chinese words around 200 milliseconds after their presentation, most salient in central and parietal brain regions. Evidence shows that the N200 is sensitive to orthographic but not semantic, or phonological manipulations and can also be demonstrated for single characters as basic units in written Chinese. Coding the visual form at the radical and character levels, as well as the word level, the N200 is argued to be a neural marker that distinguishes word recognition in Chinese and alphabetic scripts, a marker that researchers on reading have been looking for in the past three decades. (John X. Zhang, 2012) Although this is not a research on SWH, it is still a proof that language could influence our brain.

The features of written Chinese

Chinese characters are logograms used in the writing of Chinese (where they may be called hanzi 汉字/漢字 "Han character") Chinese characters constitute the oldest continuously used system of writing in the world (Victor H., 1991; Shen, 2006) By nature of widespread use in China and Japan, Chinese characters are among the most widely adopted writing systems in the world.

Various current Chinese characters have been traced back to the late Shang Dynasty about 1200 – 1050 BC, (Boltz, 1986) but the process of creating characters is thought to have begun some centuries earlier. (Norman, 1988) After a period of variation and evolution, Chinese

characters were standardized under the Qin Dynasty (221 – 206 BC).(Norman,1988) Over the millennia, these characters have evolved into well-developed styles of Chinese calligraphy.

Written Chinese is a kind of meaning-spelling language.

Chinese characters do not constitute an alphabet or a compact syllabary. Rather, the writing system is roughly logosyllabic; that is, a character generally represents one syllable of spoken Chinese and may be a word on its own or a part of a polysyllabic word. The characters themselves are often composed of parts that may represent physical objects, abstract notions, or pronunciation(Wieger ,1915).Chinese characters are glyphs whose components may depict objects or represent abstract notions. Sometimes a character consists of only one component; more commonly two or more components are combined to form more complex characters, using a variety of different principles.

According to the Shuowen Jiezi, Chinese characters are developed on six basic principles(Wang ,1981)(These principles, though popularized by the Shuowen Jiezi, were developed earlier; the oldest known mention of them is in the Rites of Zhou, a text from about 150 BC.) The first two principles produce simple characters, known as 文 wén:(Wang,1981)

象形 xiàngxíng: Pictographs, in which the character is a graphical depiction of the object it denotes. Examples: 人 rén "person", 日 rì "sun", 木 mù "tree/wood".

指事 zhǐshì: Indicatives, or ideographs, in which the character represents an abstract notion. Examples: 上 shàng "up", 下 xià "down", 三 sān "three".

The remaining four principles produce complex characters historically called 字 zì (although this term is now generally used to refer to all characters, whether simple or complex).

Of these four, two construct characters from simpler parts:(Wang, 1981)

會意/会意 huìyì: Logical aggregates, in which two or more parts are used for their

meaning. This yields a composite meaning, which is then applied to the new character. Example: 東/东 dōng "east", which represents a sun rising in the trees.

形聲/形声 xíngshēng: Phonetic complexes, in which one part—often called the radical—indicates the general semantic category of the character (such as water-related or eye-related), and the other part is another character, used for its phonetic value. Example: 晴 qíng "clear/fair (weather)", which is composed of 日 rì "sun", and 青 qīng "blue/green", which is used for its pronunciation.

In Chinese orthography, the characters are largely morphosyllabic, each corresponding to a spoken syllable with a distinct meaning.(Jerry Norman ,1988) However, the majority of Chinese words today consist of two or more characters.(Simon Ager ,2007) About 10% of native words have two syllables without separate meanings, but they are nonetheless written with two characters. Some characters, generally ligatures, represent polysyllabic words or even phrases, though this is the exception and is generally informal(Ramsey ,1987)

The production of a two-character word is not random, but abide by the rule of semantic neural network (SNN).Semantic neural network (SNN) is based on John von Neumann's neural network (Neumann, 1966)and Nikolai Amosov M-Network.Every neuron should have a unique identifier that would provide a direct access to another neuron. Of course, neurons interacting by axons-dendrites should have each others identifiers. An absolute readdressing can be modulated by using neuron specificity as it was realized for biological neural networks.Hence, the compound words made by such network can' t be random, but based on meaning and other identifiers, which means those words are spelling by meaning.Take “马车” (carriage) as an example, “马” means “horse”, and “车” means “sedan”.When they spell together , people can easily get the meaning of the new word if they know the meaning of each character.It makes

it much easier to product new words.

We can know from above that in written Chinese,the new word production is supported by meaning.This is the so-called “meaning-spelling theory” (Zhang, 2012).It says 1, Chinese is not pute hieroglyphic,but a more complicated meaning system which contained a number of abstract information; 2, Compare with other alphabetic written language, morpheme of written Chinese is the single character with meaning but not syllable

Written Chinese is a kind of visual language

For over two thousand years, the prevailing written standard was a vocabulary and syntax rooted in Chinese as spoken around the time of Confucius (about 500 BC), called Classical Chinese, or 文言文 wényánwén. Over the centuries, Classical Chinese gradually acquired some of its grammar and character senses from the various dialects. This accretion was generally slow and minor; however, by the 20th century, Classical Chinese was distinctly different from any contemporary dialect, and had to be learned separately.(Qiú,2000) Once learned, it was a common medium for communication between people speaking different dialects, many of which were mutually unintelligible by the end of the first millennium CE.(Qiú 2000) A Mandarin speaker might say yī, a Cantonese jat1, and a Hokkien chit, but all three will understand the character 一 "one".(Yu,1973)

Chinese dialects vary by not only pronunciation, but also, to a lesser extent, vocabulary and grammar.(Qiú 2000) Modern written Chinese, which replaced Classical Chinese as the written standard as an indirect result of the May Fourth Movement of 1919, is not technically bound to any single dialect; however, it most nearly represents the vocabulary and syntax of Mandarin, by far the most widespread Chinese dialect in terms of both geographical area and number of speakers This version of written Chinese is called Vernacular Chinese, or 白話/白话

báihuà (literally, "plain speech").(Qiú 2000) Despite its ties to the dominant Mandarin dialect, Vernacular Chinese also permits some communication between people of different dialects, limited by the fact that Vernacular Chinese expressions are often ungrammatical or unidiomatic in non-Mandarin dialects. This role may not differ substantially from the role of other lingue franche, such as Latin: For those trained in written Chinese, it serves as a common medium; for those untrained in it, the graphic nature of the characters is in general no aid to common understanding (characters such as "one" notwithstanding).

And the experiment which mentioned before(Zhang, 2012) has also demonstrate that visual area has participation the process of encoding written Chinese.

The features of English

English is a West Germanic language that was first spoken in early medieval England and is now the most widely used language in the world(Mydans,2011) It is spoken as a first language by the majority populations of several sovereign states, including the United Kingdom, the United States, Canada, Australia, Ireland, New Zealand and a number of Caribbean nations. It is the third-most-common native language in the world, after Mandarin Chinese and Spanish(Herbert S,2004) It is widely learned as a second language and is an official language of the European Union, many Commonwealth countries and the United Nations, as well as in many world organisations.

English is a kind of aural language.

When an alphabet is adopted or developed for use in representing a given language, an orthography generally comes into being, providing rules for the spelling of words in that language. In accordance with the principle on which alphabets are based, these rules will generally map letters of the alphabet to the phonemes (significant sounds) of the spoken

language. In a perfectly phonemic orthography there would be a consistent one-to-one correspondence between the letters and the phonemes, so that a writer could predict the spelling of a word given its pronunciation, and a speaker could predict the pronunciation of a word given its spelling(Harald,2004).Owing to the assimilation of words from many other languages throughout history, English is not a perfectly phonemic orthography,but it is still an aural language.

The difficulties which Chinese students meet when they learning English according to SWH and the features of Chinese and English

Chinese students are always feeling meaningless when they learn English words

Because written Chinese is constructed by meaning, the English vocabulary are somehow “meaningless” to them.Chinese are used to remember the words by understanding the relationship between the object and word, while in English the word is forming by sound and has nothing to do with the object.So it is always being a big challenge to Chinese students to remember English words. Since vocabulary is an essential part of English, once one fail to gain enough vocabulary, it will be very hard for him continue.

Chinese students use to regards spoken-English and written-English as two separate part

Written Chinese and spoken-Chinese are relatively independent.So it is nature to Chinese learners to learn English separately,but can’ t realize the compact relationship between them in a long time.This always cause an inefficiency learning. Most of Chinese students can’ t listen or speak English after years of learning, while although they can read, they can’ t read fast enough and can’ t write fluently.This maybe in China we used to spend most of time in reading, just like how we learn our mother tongue.We used to think the visual part of language is more important,

or the core of a language. But English is different. As an aural language, it is very important and helpful to speak it, listen to it or even read it aloud when learn it. While most of Chinese are still learning English in silent.

The Countermeasure

Tell the students about the difference of Chinese and English from at the very beginning.

If the students are old enough to understand abstract rules, it will be efficient to teach student about the features of two different languages. The students can arrange their studying more appropriate once they know those difference and be aware when they meet difficulties.

Starting the teaching with listening

Put listening in a prior position, but not reading. Actually it is hard, because Chinese need visual material to understand, and always give up listening once they can read. Thus, speaking maybe a good idea. Spoken-language is instant, always easy to understand, and have no material to read. Practice spoken-English can make it more useful, on the hand, it can make learners more familiar with the sound of English. The training should observe those principles: 1, avoid too much visual information. The goal of training spoken-English is to establish the learners' ability of processing information by hearing, so too much visual information will be a disturbance. For example, when talking about some new words, teacher should teach it by repeating it but not writing it down. 2, Insure that every body have chance to practice and practice enough. By "enough" it means enough time and variation, it will be useless if someone speak just a few minutes and repeat the simple sentences such as "what' s your name?"

Establish the connection between spoken and written English

Emphasizing the phonetics features of vocabulary, although English is not that ideal in

orthography. Root and affix are the key of this method. By teaching root, student can have a better understanding of the word, and by teaching affix, students can have a better understanding of spelling. Try to teach students to spell the words when they write or remember them, but not mechanically remember the order of the letters.

CHAPTER 3

CONCLUSIONS AND RECOMMENDATIONS

Current researchers believe that language influences thought, but in more limited ways than the broadest early claims. Exploring these parameters has sparked novel research that increases both scope and precision of prior examinations. Today, scholars merely use the phrase

Sapir – Whorf hypothesis, but "linguistic relativity" more often. Current studies of linguistic relativity are neither marked by the naive approach to exotic linguistic structures and their often merely presumed effect on thought that marked the early period, nor are they ridiculed and discouraged as in the universalist period. Instead of proving or disproving a theory, researchers in linguistic relativity now examine the interface between thought (or cognition), language and culture, and describe the degree and kind of interrelatedness or influence. Following the tradition of Lenneberg, they use experimental data to back up their conclusions. These psycholinguistic studies have since gone far beyond color perception (although that is still studied), having explored motion perception, emotion perception, object representation, and memory. The gold standard of psycholinguistic studies on linguistic relativity is now finding cognitive differences in speakers of different language when no language is involved in an experimental task (thus rendering inapplicable Pinker's claim that linguistic relativity is absurd because it is "circular").

As a part of, or a proof of top-down processing, which is against the bottom-up processing, the study of SWH is meaningful. The study of The centro-parietal N200 is a powerful evidence of the visuality of Chinese. Comparing with the feature of English, we can find some special difficulties which Chinese meet when we learn English. Hence, we can also come up with some countermeasures.

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