ORIGINAL ARTICLE

CONCEPTUAL TRANSFER: LINGUISTIC RELATIVITY IN SECOND LANGUAGE LEARNING

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▪ ABSTRACT: The influence of a language on the learning of another, or language transfer, has been extensively investigated in the field of Second Language Acquisition. There are, however, studies on a kind of transfer that occurs at the level of conceptual categorizations and that supports the hypothesis of the influence of language on cognition, or Linguistic Relativity. This phenomenon, known as conceptual transfer (JARVIS; PAVLENKO, 2010), is the object of this theoretical literature review. First, we revisit the development of the research on cross-linguistic influence, from the earlier studies, which considered it something negative for second language learning, to the latest ones, which show various effects, including facilitation. We then approach Linguistic Relativity, also known as the Sapir-Whorf Hypothesis, recalling what was postulated by its classic authors and by more recent researchers, which have reformulated the hypothesis. Finally, we review the most preeminent models of representation of the bilingual mental lexicon up to Pavlenko's (2009), which explains conceptual transfer and brings Linguistic Relativity closer to Second Language Acquisition. The review ends with the claim that the research on bilingual cognition, through the investigation of conceptual transfer, may show how the languages we speak influence our cognition.

▪ KEYWORDS: Conceptual transfer. Cross-linguistic influence. Sapir-Whorf Hypothesis. Linguistic Relativity. L2 learning. Bilingualism.

Introduction

Anyone who has tried to learn a language after their mother tongue(s) (L1) has been in situations where one language seems to affect understanding or production in another. That "interference", which usually takes place without one's awareness, can both facilitate and hinder the learning or use of the other language (ODLIN, 2003). For example, it facilitates learning and is almost inevitable when learners find in the language

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they are learning (*i.e.* their target language) words which are cognate with words from another language they know (e.g. *guitar* in English and *guitarra* in Portuguese), but makes it difficult when the learners cannot get rid of a meaning present in only one of the words of a pair of cognates (e.g. *guitar* = acoustic or electric guitar; *guitarra* = only electric guitar), leading to the misuse of the other word of the pair.

This unstoppable influence of one's knowledge of a language on the understanding or use of another is well known to researchers of second language (L2)[1] teaching and learning, who have termed it *cross-linguistic influence* (KELLERMAN; SHARWOOD-SMITH, 1986) or *transfer* (ODLIN, 1989).[2] In fact, the term *interference*, used above in quotation marks to highlight the non-literalness of its meaning in that sentence, was also once used to name the phenomenon in question, at a time when this influence was seen as harmful to language learning (FRIES, 1945; LADO, 1957).

Since the 1970s, however, the concept of interlanguage, proposed in a homonymous article by American linguist Larry Selinker (SELINKER, 1972), has pushed the research on L2 learning in new directions and sparked interest in the investigation of transfer in various areas – firstly and mainly in semantics, syntax, morphology and phonology, and later also in the discursive, pragmatic and sociolinguistic domains.[3]

As most of the studies on cross-linguistic influence have been exploratory in nature, very little has been done to devise a theoretical model that could explain the phenomenon (JARVIS, 2000). But although there are still many questions to be answered about the nature of transfer at the various levels of the linguistic structure, the early years of the twenty-first century have seen the birth of yet another line of investigation: some researchers have begun to turn their attention to a type of cross-linguistic influence that seems to originate not from the structures of the source language[4], but from elements of a deeper level – that of concepts.

In the same period, but in other areas – namely, Experimental Psychology and Cognitive Linguistics –, new studies on human cognition have revived the interest of Science in a research area that had been very popular and controversial in the past, but which was now practically defunct in academia: the influence of the languages we speak on the way we think, or the Sapir-Whorf Hypothesis. The question had been academically discussed in the 1950s (WHORF, 1956), but the advent of the generative grammar theory and the lack of an investigation method that would provide firm evidence to support the Hypothesis ended up marginalizing it. In the 1990s, researchers worked to reformulate and refine Whorf's ideas (LUCY, 1992) and, since then, some

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1 In this article, we use second language (L2) to refer to any language learned after the L1(s), regardless of the order or context of acquisition.

2 In the present work, we use *cross-linguistic influence* and *transfer* as synonyms, as we understand that, unlike the term *interference*, none of them has a negative connotation.

3 For a detailed review of the development of research on cross-linguistic influence, see Jarvis and Pavlenko (2010).

4 The term *source language* refers to the language from which a particular item or structure is transferred. On its turn, the language to which an item or structure is transferred, or the language that is affected by cross-linguistic influence, is called *recipient language* (RINGBOM, 2007).

studies have preferred the term Linguistic Relativity to refer to the subject. However, that effort was not enough to bring the matter back into the mainstream of Science.

Nonetheless, new studies carried out in the first decade of the twenty-first century brought empirical data from psycholinguistic and neurolinguistic experiments, much more reliable than those from simple observation, such as the ones in Whorf's research. Studies such as the ones by Malt, Sloman and Gennari (2003) on object categorization and Boroditsky, Schmidt and Phillips (2003) on grammatical gender showed that the classes and categories present in one's language can influence one's attention or decision-making about certain aspects of experience, that is, language can influence thought.

In recent years, Linguistic Relativity has attracted the interest of researchers in the field of Bilingualism and Multilingualism, who are now investigating it in a subarea called Bilingual Cognition (PAVLENKO, 2014). In this subarea, researchers also investigate when and how the way of thinking that is influenced by a language can affect the learning of another language. For Jarvis and Pavlenko (2010), when this happens, there is a phenomenon of cross-linguistic influence at the conceptual level, that is, in how languages conceive and organize certain conceptual domains (e.g. gender, motion, color, time, emotions etc.). This phenomenon is called *conceptual transfer*.

The multifaceted nature of the research on cross-linguistic influence means that there are several areas in and out of Linguistics interested in exploring it, but which often do it almost isolatedly from each other. This makes it not always clear to establish what is actually being investigated. What, indeed, is conceptual transfer? What has already been found about it? How is it different from language transfer?

In the form of a theoretical literature review, the present study will revisit the most prominent research on the influence of languages on the L2 learner's cognition, seeking to establish a theoretical basis that defines *conceptual transfer* and takes it as the product of Linguistic Relativity in L2 learning.

Interference, language transfer or cross-linguistic influence

Conceptual transfer – the object of this theoretical review – is, in a way, one of the latest developments in the research on transfer. It is therefore necessary to dedicate part of the present work to better understand the context in which that concept has developed.

In broad terms, transfer can be defined as the influence of previous knowledge of one language on the knowledge or use of another (ODLIN, 1989; JARVIS; PAVLENKO, 2010). The various terms used for this phenomenon – interference, transfer or cross-linguistic influence – reflect the state of affairs of the research on L2 learning and the theoretical background used to address the matter.

Although most discoveries about transfer were made in and after the 1970s, with the emergence of the area of inquiry today known as Second Language Acquisition, the interest in the subject has been around for much longer. Scott Jarvis and Aneta Pavlenko,

in their book *Crosslinguistic Influence in Language and Cognition* (2010), an anthology of the research on transfer, trace the history of the subject and mention studies such as the one by Janse (2002) about bilingualism in the ancient Greek world. This author argues that the ancient Greeks used the term "barbarians" (in Greek, βάρβαροι) not only to refer to those who did not speak Greek, but also to foreigners who spoke "bad Greek" or, using today's terminology, foreigners who showed, in their production of L2-Greek, cross-linguistic influence of their previous linguistic knowledge, probably that of their L1s.

Even more recently, during the first half of the twentieth century, the phenomenon of transfer was still viewed from a negative perspective. In a time when behaviorist notions about learning were in vogue, linguists and psychologists called the phenomenon in question *interference* and argued that it was an obstacle to reasoning. In that context, the transfer in pronunciation, for example, was believed to be caused by "laziness, indolence, inertia, shirking, sloth, […] or whatever other beautiful synonyms have been invented for 'economy of effort' or 'following the line of least resistance'" (JESPERSEN, 1922, p. 263).

Languages in Contact, by Uriel Weinreich (1953), is considered to be the work that somehow initiated the academic research on transfer. In this study on language contact, the author presents in detail several types of transfer (which he calls interference) and discusses methods for their identification and quantification, as well as their relationship with other aspects of bilingualism. One of the important points of his work is the concept of interlingual identifications. As Odlin (1994) explains,

> [...] what Weinreich (1953) termed as an "interlingual identification" occurs anytime an individual judges structures (in the widest sense of the term) in two languages to be identical or at least similar. Such judgements may be conscious or unconscious, they may be accurate or inaccurate, and they may be made either by fully competent bilinguals or by learners still in the earlier stages of acquiring a new language. (ODLIN, 1994, p. 29).

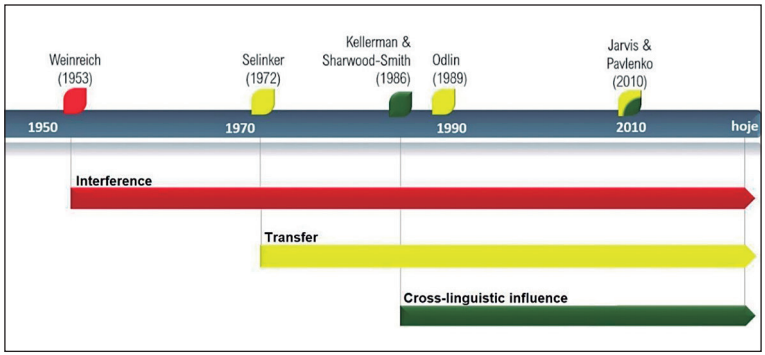
Selinker (1972) relied on Weinreich's idea of interlingual identifications to develop the concept of interlanguage, and the work of these two researchers influenced Kellerman (1977) in the formulation of the concept of psychotypology (the learner's perception of the similarities and differences between languages). From then on, the influence of interlinguistic knowledge on the L2 learner's comprehension and production came to be called *transfer*, as studies showed that it could lead not only to errors but also to the conventional use of L2, sometimes even facilitating or accelerating its acquisition (SCHACHTER; RUTHERFORD, 1979). They also found that the similarities and differences between the source language and the recipient language often manifest themselves not in errors, but in underproduction or overproduction of structures of the recipient language (RINGBOM, 1978), or even in the preference for certain structures over others, as shown in one study by Sjöholm (1995) about the acquisition of English

phrasal verbs by native speakers of Swedish and Finnish. This study showed that in situations where there is a choice between single verbs and *phrasal verbs*, native speakers of Swedish tend to use more *phrasal verbs* than native speakers of Finnish. That is because Swedish is much closer to English than Finnish, and it also has *phrasal verbs*. In other words, Swedish speakers transfer their previous linguistic knowledge, facilitating the acquisition and use of L2-English structures.

In the 1980s, Kellerman and Sharwood-Smith (1986) proposed the term *cross-linguistic influence*, as they understood that knowledge was not always transferred from one linguistic system to another, but that the mere presence of certain features in a language could facilitate or hinder comprehension or use of another, that is, previous linguistic knowledge would *influence* L2 learning.

Although the term *cross-linguistic influence* has become popular in the research about the phenomenon (see CENOZ *et al*., 2001; ARABSKI, 2006; JARVIS; PAVLENKO, 2010), it has not replaced the term *transfer*. Nowadays, both are used interchangeably. In addition, the term *interference* also continues to be used, particularly in studies that focus on the investigation of negative transfer, i.e. the cross-linguistic influence that hinders comprehension or production in L2 (Fig. 1).

Figure 1 – Emergence and use of the terms "interference", "transfer" and "cross-linguistic influence" in the last 60 years and in the most notable publications about the phenomenon.



Source: Authors' elaboration.

The Sapir-Whorf Hypothesis and/or Linguistic Relativity

Since the mid-twentieth century, the idea that the language we speak affects the way we think and make sense of our experience in the world has been studied, defended and criticized under the name of Sapir-Whorf Hypothesis. This is because the ideas in that hypothesis come from the work of Edward Sapir (SAPIR, 1921) and, mainly, from that of his pupil Benjamin Lee Whorf (WHORF, 1956). However, as we will see below,

the name "Sapir-Whorf Hypothesis" was neither created nor used by these researchers and, according to some authors, the Hypothesis as known and studied today has little to do with Sapir's and Whorf's original propositions.

Bibliographical and historiographical studies and reviews on Linguistic Relativity – another way of referring to the Sapir-Whorf Hypothesis, despite an opinion that these are different subjects –, point out that the first scientifically formulated arguments about the relationship between language and thought are in the work of Prussian diplomat, philosopher and philologist Wilhelm von Humboldt (PAVLENKO, 2014), who saw languages as systems that encode unique world views: "each language draws a circle around the people to whom it adheres" (HUMBOLDT, 1836 *apud* PAVLENKO, 2014, p. 2). Humboldt's ideas influenced the research of Franz Boas, who dedicated himself to investigating the different linguistic categories that seem to affect our cognition. Boas argued that we conceive and make sense of our experience under the influence of concepts that are arranged by our language, and we do it without being aware of such an effect:

> The categories of language compel us to see the world arranged in certain definite conceptual groups which, on account of our lack of knowledge of linguistic processes, are taken as objective categories, and which, therefore, impose themselves upon the form of our thoughts.[5] (BOAS, 1920, p. 289, our translation).

Edward Sapir, Boas' student at Columbia University, took these ideas further and claimed that the linguistic categories dominate our cognition "because of the tyrannical hold that linguistic form has upon our orientation in the world" (SAPIR, 1931, p. 28). Another excerpt from one of his publications is still considered a manifesto of linguistic determinism:

> 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, 1929, p. 162).

Benjamin Lee Whorf, who had been Sapir's student at Yale University, and who was also interested in the question of how far linguistic categories could affect cognition, studied, like Sapir, languages that at the time were considered "exotic", such as the American indigenous language Hopi, and the Inuit languages of Eskimo peoples. His observations and analyses of the nature of conceptual representations in such languages, in particular the argument that the Hopi language does not have a concept of time, at least

[5] Original: "*As categorias da língua nos obrigam a ver o mundo organizado em certos grupos conceituais definidos que, por conta da nossa falta de conhecimento dos processos linguísticos, são tomados como categorias objetivas, e que, portanto, se impõem sobre a forma dos nossos pensamentos*." (BOAS, 1920, p. 289).

not in the form of something that can be divided and subdivided, are still controversial. Perhaps the most cited of these considerations is the passage in which Whorf seems to claim that our cognition is necessarily controlled by the categories available in the language we speak:

> 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. [...] no individual is free to describe nature with absolute impartiality, but is constrained by certain modes of interpretation even when he thinks himself most free. (WHORF, 1956, p. 213-214)

In the 1950s, over 20 years after Sapir's death and over 10 years after Whorf's death, psychologists Roger Brown and Eric Lenneberg, among other researchers, sought to review Sapir's and Whorf's ideas and translate them into scientifically testable hypotheses. Hence what we know today as the Sapir-Whorf Hypothesis. A dichotomy was established in the form of two versions of the Hypothesis, a "strong" one and a "weak" one (BROWN; LENNEBERG, 1954).

The "strong" version, known as Linguistic Determinism, states that "variable categories of language essentially control the available categories of general cognition" (PEDERSON, 2007, p. 1012). In other words, the language we speak determines the way we think. Because of their propositions, Edward Sapir and Benjamin Lee Whorf are commonly associated with this deterministic and even somewhat radical view of the relationship between language and thought.

Linguistic Determinism ended up falling into disrepute within the scientific community. Even though there are conceptual differences across cultures because of their languages, this does not mean that the differences are so great that mutual understanding is impossible. In addition, the fact that a certain language lacks a particular word does not mean that its speakers cannot understand the concept behind it (CRYSTAL, 2010).

The "weak" version of the hypothesis, also called Linguistic Relativity, postulates that "the linguistic categories may influence the categories of thought but are not fundamentally restrictive" (PEDERSON, 2007, p. 1012-1013). This version is a milder interpretation of the whorfian argument, defended by research carried out since the 1980s (LAKOFF, 1987; LUCY, 1992; SLOBIN, 1996). According to Jarvis and Pavlenko (2010), these studies show that those who criticize the Sapir-Whorf Hypothesis have oversimplified and misinterpreted Sapir's and Whorf's original claims about how language influences thought, mistakenly assuming that they believed that language strictly determines thought.

Linguistic Relativity (i.e. the "weak" or soft version of the Sapir-Whorf Hypothesis) encompasses two main notions: (1) languages differ *significantly* from one another; (2) languages can *systematically influence* the way their speakers think (SWOYER, 2011; WOLFF; HOLMES, 2010). For Swoyer, the first notion is indisputable, because "even if all human languages share numerous abstract linguistic universals, there are often large differences in their syntactic structures and their lexicons, as anyone who has learned a second language can attest" (SWOYER, 2011, p. 25).

As for the second notion, for the author, although somewhat controversial, it is plausible. But for it to be testable, research on Linguistic Relativity must concentrate on more specific questions, such as: "1. *Which aspects* of language influence *which aspects* of thought in a systematic way? 2. What *form* does this influence take? 3. How *strong* is the influence?" (SWOYER, 2011, p. 25, italics by the author).

This is precisely what most studies on the matter have been doing. Researchers are investigating the effects of language on cognition in specific conceptual domains. Jarvis and Pavlenko (2010) list eight domains in which there is already research with important conclusions: objects, emotions, personhood, gender, number, time, space and motion. Below we mention one study for each of these domains:

a. *Objects:* The research by Malt, Sloman and Gennari (2003) and Malt *et al.* (1999) showed that the 16 objects called *bottle* in English are sorted out into seven linguistic categories in Spanish. This means that speakers of L1-English who are learners of Spanish need to form new conceptual categories with specific properties that are not covered by their L1, for instance, the distinction between bottles for liquids and bottles for dry materials.
b. *Emotions:* Pavlenko (2002) showed that although English and Russian express emotions with both verbs and adjectives, these languages differ as to which type of structure is dominant. In an experiment in which monolinguals in each language reported their impressions of the same short film, English speakers described emotions using more adjectives (and, therefore, perceiving them as states), while Russian speakers used more verbs to refer to the same emotions (perceiving them as processes).
c. *Personhood:* The way in which each language categorizes grammatically and lexically the concept of "personhood" can vary substantially. For example, Russian, French and German encode the relationship (of hierarchy, age difference, social status, degree of intimacy etc.) between interlocutors with different forms of the 2nd person singular pronoun (in German, *du* or *Sie*). In order to learn how to choose pronouns adequately in German, native speakers of languages that do not make this distinction will have to do much more than simply memorize pronouns: they will have to acquire new ways of conceiving their interlocutors (BARRON, 2006).
d. *Gender:* One experiment in the study by Boroditsky, Schmidt and Phillips (2003) showed that speakers of languages that mark gender grammatically

are influenced in their perceptions about inanimate nouns by the gender grammatically assigned to them. For example, when describing a key in L2-English[6], a feminine noun in Spanish (*la llave*) but masculine in German (*der Schlüssel*), L1-Spanish speakers used adjectives such as *little, lovely, shiny*, whereas speakers of L1-German described the object with adjectives such as *hard, heavy* and *metal*.

e. *Number:* Lucy (1992) showed that speakers of languages that mark number morphosyntactically (e.g., English) and those who speak languages that do not (e.g., Yucatec) can differ in their degree of attention to the number of objects when describing a situation.

f. *Time:* English tends to represent time duration over a linear distance (e.g., *a long time*), whereas Spanish views time as a quantity (e.g., *mucho tiempo*). This difference affects non-verbal cognition: English speakers and Spanish speakers differ significantly on time estimation tasks (CASASANTO *et al.,* 2004).

g. *Space:* Spatial relations that in English are linguistically encoded with the preposition *on*, in Dutch require three prepositions: *op, aan* and *om* (BOWERMAN, 1996). This difference represents a special difficulty for L1-English speakers learning L2-Dutch, as they will have to form three new categories in their interlanguage to handle the different ways in which Dutch conceptualizes space and which do not exist in their L1.

h. *Motion:* Berman and Slobin (1994) showed that narratives elicited by a picture book from speakers of *satellite-framed* languages such as English (which, to describe motion events, encodes *manner* in the verb and *path* in adverbs and prepositions – e.g., *they ran into the house*) were more detailed in terms of motor patterns, speed and quality of movement than the narratives made by speakers of *verb-framed* languages such as Spanish (which lexicalizes *path* in the main verb and, optionally, *manner* in an additional verb, in the gerund – e.g., *entraron corriendo a la casa*).

Much of the research on Linguistic Relativity in the twentieth century focused on investigating the grammatical and conceptual categories of monolingual speakers of distant languages. Between the 1950s and 1990s, because of the advent of Chomsky's generative agenda and the development of the research on linguistic universals, Linguistic Relativity ended up being set aside and disregarded in academia. However, the last 30 years have seen a revival of academic interest on the subject, mainly due to advances in the research in Cognition, Psycholinguistics and Neurolinguistics. The research on the influence of languages on thought, which for a long time had a monolingual bias, has now turned to bilinguals, as we will see in the next section.

[6] A language that does not mark gender grammatically.

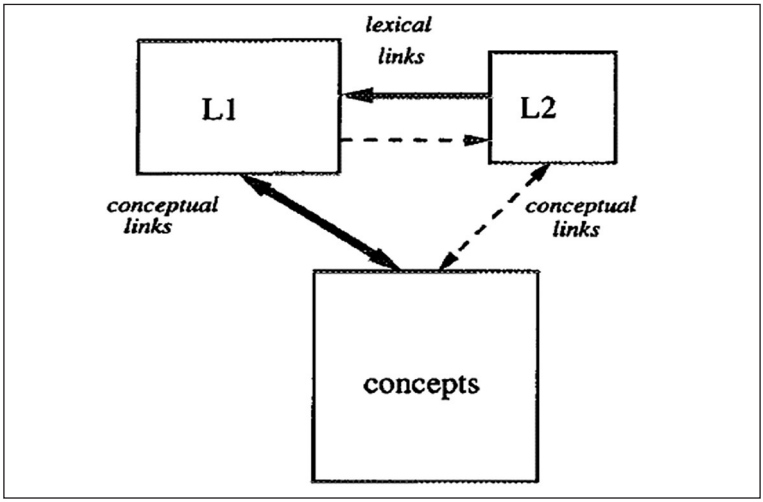
Conceptual transfer: the bilingual turn in the Linguistic Relativity research

As discussed in the second section of the present article, the research on transfer typically seeks to analyze and describe how comprehension or use of the target language can be influenced by previous knowledge of another language(s). In other words, it tries to account for this influence in terms of "similarities and differences between the structural properties of the source and the recipient languages" (JARVIS; PAVLENKO, 2010, p. 112). In the third section, we showed that the most recent research on Linguistic Relativity has revealed differences between languages also at the level of the organization of conceptual domains. However, most studies, like the ones mentioned in that section, establish such dissimilarities by comparing monolingual speakers of each language. Here, we must ask: how could Linguistic Relativity be related to L2 learning? Or, more specifically, could conceptual cross-linguistic differences also affect the L2 learners' performance in their target language?

Since the early research on bilingualism, with the work of Weinreich (1953), scholars have tried to explain the connection between the various structures and forms of a language and their conceptual representations in the bilingual mind. Many hypotheses have been put forward and, based on them, several models of mental representation of the lexicon have been proposed.

The first models were based on the assumption that conceptual representation is shared between languages, even though there may be several formal representations for a given concept. Thus, the English word *cat* and the Portuguese word *gato* would have exactly the same meaning, that is, they would be linked to the same concept – that of *a domestic animal that meows*. The Revised Hierarchical Model (KROLL; STEWARD, 1994) is probably the most famous model to represent this hypothesis (Fig. 2). According to this model, there are links between L1 and L2 forms and between those forms and shared conceptual representations. However, the link between L2 and L1 forms is stronger than the one between L2 and the concepts, and the link between L1 and the concepts is the strongest of all. L2 learners would therefore access most of the concepts in the L2 through their L1 (language transfer). Learning an L2 without the influence of the L1 would depend on strengthening the direct links between the L2 forms and conceptual representations already present in the learners' minds.

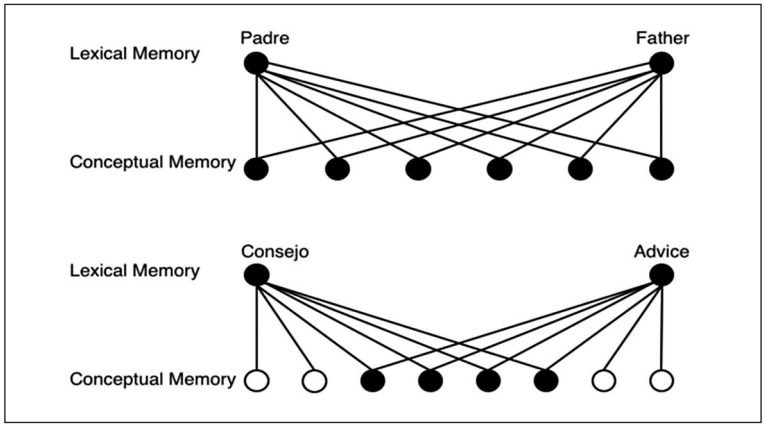
Figure 2 – The Revised Hierarchical Model.



Source: Kroll and Steward (1994, p.158).

The Revised Hierarchical Model does not account for cases in which word pairs do not share all the meanings, that is, where there is no total conceptual equivalence between the words (e.g., both *cat* and *gato* mean *domestic animal that meows*, but only *gato* also means *someone who is physically attractive* or *illegal extension of an electric power supply point*). To explain the specific meanings that many words have in one language but not in the other, De Groot (1993) proposed the Distributed Conceptual Feature Model. This model does not see concepts as single, separate units in the memory, but as *distributed* representations, in which each concept is, in fact, a set of more elementary conceptual attributes. According to this model (Fig. 3), between two languages, there are pairs of words that share more conceptual features and other pairs that share fewer.

Figure 3 – The Distributed Conceptual Feature Model.



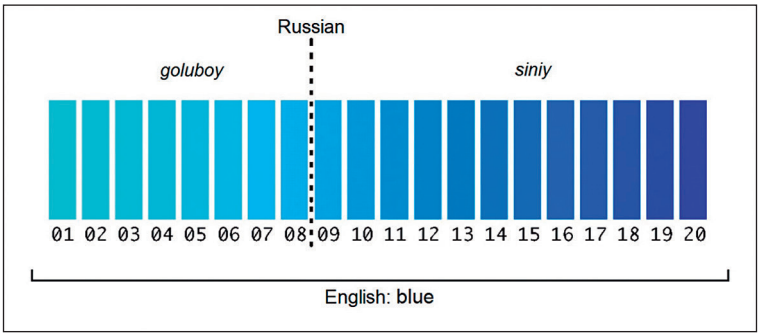
Source: Adapted from De Groot (1993).

The most recent studies on Linguistic Relativity suggest that there are concepts that exist in some languages, but not in others. For example, when comparing narratives produced by monolingual speakers of Russian and English, Pavlenko (2003) found that Russian not only lacks equivalents for the English word *privacy*, but it also does not have the very concept of privacy. The bilingual turn mentioned in the title of this section refers to the fact that investigations are no longer about analyzing the performance of the monolingual native speaker of language A as compared to that of the monolingual native speaker of language B, but about analyzing how bilingual speakers of languages A and B categorize and express their experience in the world when certain concepts of their languages are not equivalent. In the same study mentioned above, Pavlenko noted that when reporting in Russian a video clip showing a situation that could potentially be perceived as an invasion of privacy, bilingual L1-Russian/L2-English living in the United States used *code-switching* and lexical loans to express the concept in question, whereas L1-Russian/L2-English bilinguals who had never been to an English-speaking country never mentioned the spatial proximity between the characters in the clip, not even when they later reported the scene in English. The author concluded that because of a more intense and prolonged contact with the English language and the English-speaking culture, the bilinguals living in the USA eventually acquired the concept of privacy of the English language. The second group of bilinguals, with less contact with English and no real experience in an English-speaking culture, did not have the opportunity or the need to acquire the concept.

Other studies with bilinguals or L2/foreign language learners have shown that when there is a partial equivalence between the concepts of the languages in contact in their minds, bilinguals often develop their own conceptual representation, which differs from that of monolinguals of each language. An example of this would be the partial equivalence between English and Russian in certain items of the domain of colors. In

English, the category *blue* includes what in Russian are two categories: *goluboy* (light blue, approximately) and *siniy* (dark blue, approximately) (Fig. 4) (ANDREWS, 1994; WINAWER *et al.,* 2007).

Figure 4 – The two Russian colors for the English *blue.*

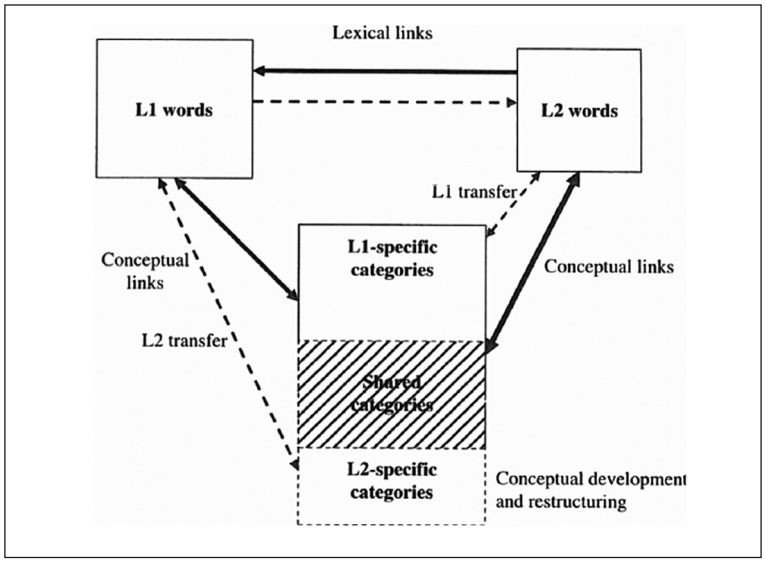


Source: Adapted from Winawer *et al*. (2007).

Andrews (1994) showed that L1-Russian/L2-English bilinguals who lived in the United States and had English as their dominant language were losing the distinction between *siniy* and *goluboy*, and started to use the word *goluboy*, when speaking Russian, in contexts where they would be expected to use *siniy*. This influence of the meaning that a word or structure has in one language on the comprehension or use of an equivalent word or structure in another language (which in that other language is linked to a different concept) is what researchers have termed *conceptual transfer*.

Based on the findings of studies with bilinguals such as those mentioned above, Pavlenko (2009) proposed a new model of representation of the bilingual lexicon, the Modified Hierarchical Model (Fig. 5). This model included three aspects not covered in previous models: (1) the existence of not only equivalent concepts and concepts that are (partially) shared between languages but also concepts that are language-specific; (2) the phenomenon of conceptual transfer, in which certain conceptual content exclusive to one language is attributed to a word in another language; and (3) the idea of foreign language learning as conceptual restructuring, that is, a gradual process in which learners reorganize their conceptual categorizations so that those categorizations come as close as possible to the conceptual representation of native speakers of the target language – a "cognitive-conceptual" and whorfian version of Selinker's (1972) interlanguage theory.

Figure 5 – The Modified Hierarchical Model.



Source: Pavlenko (2009, p.147).

The Modified Hierarchical Model was clearly developed on the design of the Revised Hierarchical Model but differs from it mainly in its lower section, which illustrates the structure of the conceptual representation in the bilingual mind. For Pavlenko (2009), there are three types of bilingual conceptual equivalence relationships.

In the first type, *conceptual equivalence*, lexical or grammatical elements of two languages share the same conceptual representation. The effect of this equivalence on L2 learning is that it facilitates positive transfer – learners will need to establish connections between L2 words and concepts already existing in their minds. In one of the studies showing this effect, Pavlenko (2008) asked monolingual speakers of English and Russian to watch a short film and then describe it. When referring to the feeling of fear of one of the characters, L1-Russian speakers used reflexive verbs such as *ispugat'sia* (to get scared) and *boiat'sia* (to be afraid), whereas L1-English speakers used adjectives or participles such as *afraid*, *frightened* and *terrified*. Even though the grammatical categories were different, both the Russian and English words referred to the same conceptual domain "fear". The conceptual equivalence was confirmed when the study turned to L1-English/L2-Russian and L1-Russian/L2-English bilinguals: the narratives produced by them, about the same short film, showed that their lexical choices in L2 were largely the same as those of the monolinguals.

In the second type of relationship, *partial equivalence*, there is an overlap of the limits of the conceptual representation of certain elements in each language, and only part of it is shared. In this type of relationship, there is what the author calls *nesting*, that is, when a category of a language is divided into two in the other language, or

when a category of a language absorbs (partially or completely) two or more categories of the other language. Here, the partial overlap facilitates learning (positive transfer), but it can also make it difficult when the learners assume full equivalence where it is not (negative transfer). This would be the case (between English and Portuguese) of the pairs *cat/gato* and *guitar/guitar*, mentioned before. Here, to succeed in learning a particular lexical or grammatical item, the learners will need to restructure their conceptual representations.

In the third type of relationship, that of *non-equivalence*, a conceptual category of a language has no direct correspondent in the other language. This makes learning difficult, as the learners will have to create new categories, but it can also facilitate it because of the absence of conflicting representations. Conceptual non-equivalence was demonstrated in the research about the concept of privacy made by Pavlenko (2002) and described above.

By including in her model these three types of conceptual equivalence relationships, Pavlenko not only explains how the development of interlanguage occurs at the level of concepts, but she also elucidates the findings of several studies on cross-linguistic influence, such as those mentioned in the previous sections of this article, corroborating the assumption that the languages we speak can, indeed, influence the way we categorize and make sense of our experience in the world.

Conclusion

With this theoretical review, we sought, albeit briefly, with the discussion of concepts and hypotheses of studies considered as references in the areas in question, to establish the intersections between the research on transfer, Linguistic Relativity and L2 Learning. Below, we recap the main points addressed.

Transfer, as proposed by Selinker (1972), is part of the development of interlanguage, that is, it is a phenomenon inseparable from L2 learning. During the second half of the twentieth century, research concentrated on what we can now call *language transfer*, i.e., the influence of formal aspects of a language on the comprehension and use of formal aspects of another, an influence that is manifested in the various domains of the language, such as syntax, morphology, phonology, semantics etc. (ODLIN, 1989). More recent studies, in the last 20 years, have shown that the phenomenon of transfer can also manifest itself in the form of cross-linguistic influences at the conceptual level, i.e., when comprehension or use of a language are affected by non-equivalent or partially equivalent concepts of another language – a phenomenon that researchers call *conceptual transfer* (PAVLENKO, 2009).

The findings on conceptual transfer come from studies about bilingual cognition, that is, about how bilinguals make sense of the world around them and how they express their experience in it in their different languages. This is an area of inquiry informed by several paradigms and theories, particularly the interlanguage theory (SELINKER,

1972), about how L2 knowledge develops in the learner's mind, and the Linguistic Relativity Hypothesis (LUCY, 1992), about the influence of the languages we speak on the way we think.

As was discussed in the third and fourth sections, the research on the influence of languages on cognition – or Linguistic Relativity –, which for a long time focused on comparing monolingual speakers of different languages, and which until the beginning of the twenty-first century was in disrepute in academia, gained a new wave of evidence in its favor when researchers of bilingualism began to unveil the nature of what we now call conceptual transfer (JARVIS; PAVLENKO, 2010). The existence of a phenomenon of cross-linguistic influence at the level of concepts, through which the L2 learner incorporates meanings and categorizations from one language into the use of another, which does not have such concepts or categorizes them differently, corroborates the central premise of Linguistic Relativity – that conceptual differences across languages could affect the way their speakers see the world.

However, the research on bilingual cognition has already gone beyond. It is already known, for example, that bilinguals can form their own conceptual categories, which differ from those of monolingual speakers of each language (PAVLENKO, 2014; DE GROOT, 2013). Learning an L2 would therefore involve not only establishing links between L2 forms, meanings and functions and the learners' previous linguistic knowledge, but also a restructuring of the conceptual representations in their minds. For Pavlenko (2009), conceptual transfer is evidence of this restructuring and, therefore, of the Linguistic Relativity Hypothesis.

Further research with bilinguals, both those with more than one L1 and those who are learning or have learned a language after their L1(s), may shed light on questions that still need to be answered, such as: How can conceptual transfer be predicted? What factors affect more or less the occurrence of conceptual transfer? What are the implications of the findings on bilingual cognition and Linguistic Relativity to second and foreign language teaching? Regardless of the approaches and directions that research may take in the future, these questions, as well as the entire history of the research on transfer, suggest that the study of bilingual cognition seems to be the key to understanding how the languages we speak influence the way we think.

FERREIRA, R. C.; MOZZILO, I. Transferência conceitual: o Relativismo Linguístico na aprendizagem de segunda língua. **Alfa**, São Paulo, v. 65, 2021.

- *RESUMO: A influência de uma língua na aprendizagem de outra, ou transferência linguística, é matéria bastante investigada na área de Aquisição de Segunda Língua. Entretanto, há estudos sobre um fenômeno de transferência que ocorre no nível das categorizações conceituais e que dá suporte à hipótese da influência das línguas sobre a cognição, ou Relativismo Linguístico. Esse fenômeno, chamado transferência conceitual (JARVIS e PAVLENKO, 2010), é o objeto deste artigo, que traz uma revisão teórica da literatura sobre a questão. Primeiramente,*

traçamos o percurso da pesquisa sobre a influência translinguística, dos estudos iniciais, que a tomavam como algo negativo na aprendizagem de L2, até os últimos, que mostram diversos efeitos, inclusive o de facilitação. Depois, abordamos o Relativismo Linguístico, ou Hipótese Sapir-Whorf, revisitando o que foi postulado por seus autores clássicos e por pesquisadores mais recentes, que reformularam a hipótese. Finalmente, revisamos os principais modelos de representação do léxico bilíngue até o de Pavlenko (2009), que explica a transferência conceitual e aproxima o Relativismo Linguístico da Aquisição de Segunda Língua. A revisão termina com a conclusão de que a pesquisa sobre a cognição bilíngue, através da investigação da transferência conceitual, poderá revelar como as línguas que falamos influenciam a nossa cognição.

- *PALAVRAS-CHAVE: Transferência conceitual. Influência Translinguística. Hipótese Sapir-Whorf. Relativismo Linguístico. Aprendizagem de L2. Bilinguismo.*

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Received on July 28, 2019

Approved on July 28, 2020