

## **The role of Construal, Gesture and Encyclopaedic Knowledge in linking language with cognition**

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**Abstract:** The aim of this paper is to briefly discuss the relationship between language and cognition and provide some examples of three aspects: construal, gesture, and encyclopaedic knowledge with reference to the effects of social factors. It is important to understand the relationship between language and cognition and to know which of them is dominant on the other and also the role of social factors in regard to this relationship.

**Key words:** *Construal, Gesture, Encyclopaedic Knowledge, language and cognition, Cultural aspects*

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### **I. INTRODUCTION**

Language and cognition are mental facilities. Language is 'the method of human communication, either spoken or written, consisting of the use of words in a structured and conventional way' (Oxford dictionary of English, 2005) and cognition is 'the mental action or process of acquiring knowledge and understanding through thought, experience, and senses' (Oxford dictionary of English, 2005). From these general definitions, one may imply that there is a relation between them. Language and cognition might be intently linked, though linguists have controversial disagreement about the nature of that relationship. There are three significant viewpoints considering this relationship: language is independent from cognition and develops separately, cognition has an influence on both language and its developments, and language controls and has prominent influence on the development of thought (cognition). The first view is that of Noam Chomsky and his fellow who claim that language abilities are related to a mental organ and separated from other cognition processes in the human brain. He argued that children are born with 'language acquisition device' (universal grammar) (Harris, 2003). However, cognitive linguists pointed out that language abilities are not separated from other cognition processes because they found that there is a relation between language and cognition and the 'autonomous' position of language in the brain is not existed (Littlemore, 2009). There is an important controversy among psycholinguists and linguists in regard to the other view of the language cognition relationship; their debate is whether the ability to speak controls the ability to think or vice versa. According to Sapir's hypothesis, the ability to speak controls the ability to think as in their famous example 'snow' i.e. languages happen to show people see the world. Other cognitive linguists may think that it is the cognition which controls the language, for instance: Lakoff and Langacker have indicated that without referring to 'nonlinguistic concepts' one might not understand whether a sentence is syntactically right or wrong and also they have focused on the incorporation of human cognition processes into linguistics (Harris, 2003). In other words, language is controlled by cognition and language is a 'usage based' (Littlemore, 2009), so, in contrast to Chomsky's view, both views emphasized that language is based on function and this function is linked to cognitive processes. It is important to understand the relationship between language and cognition and to know which of them is dominant on the other and also the role of social factors in regard to this relationship. This essay will briefly discuss the relationship between language and cognition and provides some examples of three aspects: construal, gesture, and encyclopaedic knowledge with reference to the effects of social factors.

### **II. CONSTRUAL**

Cognitive linguists point out, that there are a number of ways in which a specific situation can be 'construed', and this number depends on different conceptualizations, therefore, if a situation is encoded in two different ways, it may be interpreted in different ways either. In contrast to Chomsky's generative grammar, which considers this case of encoding as a difference in the 'form' of the situation (sentence) and not the 'substance', cognitive linguists would argue that the change of encoding is of form as well as substance (meaning) (Lee 2001). Although certain situations can be encoded in different ways, there are situations that may not be encoded in different ways but only a specific way of encoding would be appropriate, therefore this is a sign that the change is not only in the form, but also in the meaning (Ibid, 2001). According to Piaget (1952 cited in Lee, 2001), children at first stages start to understand the world through 'sensorimotor knowledge' of space i.e. at the first stages of their cognition development, they tend to make a spatial relationship with the surrounding before the actual use of words. As for language relation to space, it is rather complex and this complexity is a significant evidence of the relationship between language and cognition. The concentration of this aspect will be on space construals. Lee (2001) and Taylor (2002) showed the effect of locative prepositions in construing meaning and the relationship between 'trajectory' and 'landmark'. Human cognition processes, through the logic of the world, make an individual construe mean

ing beyond the meaning of the actual situation, for example: Herkowitz (1986 cited in Lee, 2001) 'the crack/the flowers/the water in the vase' although they have the same landmark, the relationships between the trajectory and landmark are completely different. The crack (trajectory) might be an existing specific part of the vase (landmark) surface. For the flowers, only a part of them are actually in the landmark (the root and may be part of the blade) in contrary to the water which must be fully contained in the landmark 'three dimensional' otherwise it will be fallen. If one could imagine that the capacity of the container is less than the amount of water, the water drops on the second landmark (table or floor) which is also the landmark of the first landmark (vase), so the water in this context has two landmarks, but, cognitively, it may be hardly accepted (second landmark (table/floor) needs drying). As for the vase, according to the water, it is a landmark but according to the second landmark (table/floor) it is a trajectory. The relationship between trajectory and landmark is not random; pragmatically, landmark is a landmark because of its function as well as the trajectory, and this function is an integral part in understanding which is which (Lee, 2001), it is so much similar to the relationship between background and foreground. In "elaborative hierarchies" (Langacker, 2008:56) it is the situation which considers the focus of the construal, i.e. the situation would recall background knowledge (depending on physical world experience) which is the base of understanding this situation, therefore the background knowledge and the foreground (situation) frame the construed background. In addition, the link between foreground and background is called "compositional path" (because this link composes the meaning) and the implied meaning is not construed by only the background knowledge but with its correlation to compositional path (Ibid, 2008:61). Although the foreground would activate non-specified background knowledge, there are a number of limitations in considering the background. Langacker (2008) and Kovecses, (2006) indicated that there are two scopes in regard to the background: 'maximal scope' and 'immediate scope' for instance: the word *knuckle*, its scope of mental construal is *finger*, which is the immediate scope, that activates *hand* which in turn activates *arm* and it activates *body*, (which is the maximal scope); it is a hierarchical relation so, it is hardly accepted to drop one from this chain: *arm-finger-or-hand-knuckle*. There is always 'primary focus' (trajectory) and 'secondary focus' (landmark), and as mentioned above considered by their function, however, Langacker answers the question *where is the table? With the table is below the lamp*, according to the context, this answer would not be accepted if the lamp is on the table, because according to the function, the table is the supported (container) and it would be the landmark, but if the lamp is on the wall/ceiling, the table then would be the trajectory (Langacker, 2008; Kovecses, 2006; Ungerer and Schmid, 2006). As for the culture role, the relationship between language use and culture practice is shown in Slobin's 'thinking for speaking' theory "we encounter the contents of the mind in a special way when the year is being accessed for use" (Gentner and Goldin-Meadow, 2003:158). His studies showed the influence of the mind in language use and this influence would differ according to the language, he divided languages into 'satellite-framed and verb-framed languages' (Gentner and Goldin-Meadow, 2003; Niemeier and Dirven, 2000). This classification is according to how language is used and its exposure to verbs of motion as well as its cultural aspects. Pinker (1994 cited in Gentner and Goldin-Meadow, 2003) claimed that Sapir's hypothesis 'wrong' and languages do not shape people's thinking, however, numerous studies have shown that there is a strong relationship between language and thoughts and they argue that in any utterance the receiver would obtain a number of characteristics and then form them according to the context, background and cultural knowledge (Gentner and Goldin-Meadow, 2003; Littlemore, 2009; Niemeier and Dirven, 2000). Therefore, thoughts strongly appear to be shaped by language use; it is demonstrated that satellite-framed languages have more frequent mental access to verbs of motion than verb-framed languages and also the habitual attention to manner in satellite-framed languages is more obvious (Goldin-Meadow, 2003; Littlemore, 2009). It is worth saying that culture plays a significant role in regarding language use because through cultural aspects, for instance: satellite-framed language children are learning to identify significant nuances of manner and verb-framed language children are learning broad types of manner language can be developed and this development would lead to a stronger relation with thoughts, so the access to mental conceptualisation would be widened.

### III. Gesture

Another aspect of the relationship between language and cognition in communication is the use of gesture. As McNeill (1992 cited in Littlemore, 2009; Sueyoshi, and Hardison, 2005) points out, there are four functions of gestures: 'iconic', 'metaphoric', 'beat' and 'deictic' another significant function was provided: "to provide evidence of, and a way of unpacking conceptual blending" (Parril, and Sweetser, 2004 cited in Littlemore, 2009:136). Gesture is a connector of language to thought, it would be beneficial for second language (L2) learning and interaction because gesture is 'coexpressive' with speech, i.e. gesture and speech probably work together to obtain the same target (Littlemore 2009). Therefore, L2 learners tend to use more gestures while speaking their L2 than when speaking in their first languages (L1) (Ibid, 2009; Gullberg, 2008). It might be more advantageous to have two inputs than only one while learning L2, i.e. simultaneous inputs are accessed by L2 learners: hearing the teachers' speech (listening input) as the first input combined with the teachers' gestural movements (visual input) may serve better understanding than if one input (listening input) is involved. Sime (2008 cited in Littlemore, 2009) showed that learners prefer teachers whose more gesture; 'excellent' teachers are the ones who are more likely to use gestures than others. In addition, psychologically and cognitively, teachers (speakers generally) could also benefit from their own gesture. Their gestural movements: seem to play a significant role in "conceptualizing and planning" (Littlemore, 2009:134), so, their gestures appear to have a considerable increase according to the complexity of the message; although gesture and speech are "synchronous", gesture tends to arrange the message for the speaker and the listener as well (Kendon, 2004 cited in Littlemore, 2009:134), and may provide to some extent self-esteem and confidence due to, culturally, the fact that people judgement is somehow positive toward the 'more gesture users' As the role of gesture towards L2 learning mentioned

ed above, Goldin Meadow (1999 cited in Sueyoshi, and Hardison, 2005:662) described gesture as a “tool” for communication and also for “thinking for speaking”. On the one hand this tool may extend the scope of (learners’/viewers’) understanding beyond the actual speech for instance: a gesture used to describe certain information, learners (viewers), may activate a pragmatic meaning or even activate an out of context reference that help understanding that information. On the other hand, it may abbreviate that scope or in some cases there is no scope at all (Sueyoshi, and Hardison, 2005). The understanding scope of that tool might not depend on the tool (gesture) itself, but on its viewer (perceiver), neglecting the role that the performer of that gesture plays, there are a number of factors that influence the perceivers’ understanding of gesture: “proficiency level” “linguistic and cultural experience”, language exposure, and also the type of the perceivers’ language i.e. Slobin’s satellite/verb framed language categorisations (Ibid, 2005:689). A research has taken English L2 learners (children) whose L1 is Spanish in comparison with English natives speaking children as an example of demonstrating the factor that influence gesture understanding (Mohan, and Helmer, 1988 cited in Sueyoshi, and Hardison, 2005) This research has shown that the Spanish children have less gestural understanding than the English ones, because their level of proficiency is inadequate. Proficiency level would be influenced by linguistic and cultural experience, language exposure as well as the point that Spanish is a verb-framed language and English is a satellite-framed one, so English would have more access to verbs of motion which privileged the understanding of gesture. Sueyoshi, and Hardison, (2005) pointed out the importance of gesture in L2 learning, considering it as an integral part of L2 learners’ comprehension development.

There are a number of theories that identify the role gesture plays to assist speakers in their speech. A number of theories show that gesture is an “auxiliary system to speech” (Kendon 2004 cited in Gullberg, 2008:280). Other theories suggest that gesture and speech are equal co-workers and gesture carries a significant importance in speech (Gullberg, 2008). However, it is possible that as speech is performed without any gesture and fully understood; although gesture is an auxiliary system to both speakers and perceivers, the speakers, even if they are competent enough while speaking and do not need gestural assistance, appear to use more gesture if their perceivers are incompetent. Gullberg (2008:280) claimed that “[g]estures only occur when a speaker experiences a word finding problem to help activate lexical entries”. However, speakers tend to use more gesture consciously not to support their speech but to help their listeners (perceivers) understand the information. Therefore, they seem to concretise the abstract i.e. use gestures with speech. Cognitively, children start to communicate with movements before their actual speech, so they use and understand gestures before utterances, then when they use utterances, certain gestures would activate the understanding of certain utterances because of the evoking of “sensorimotor experience”, even more, listeners (perceivers) may understand what speakers want to say, from simultaneous gesture and speech, before actual utterance (Littlemore, 2009; Gullberg, 2008:291) Social factors (culture) play a significant role regarding gesture. McNeill (1992 cited in Littlemore, 2009) found out that there are a number of differences between languages regarding the types of gestures used. The relationship between gesture and speech is not the same in all languages, for instance: Italian speakers’ use of gesture is to focus on “referential content” compared with Yiddish language gestures which focus on “logical structure” (Efron, 1972 cited in Littlemore, 2009:138). Therefore, understanding a certain gesture would be influenced by individual’s cultural and social class differences (Pennycook, 1985 cited in Sueyoshi, and Hardison, 2005). Tellier (2006 cited in Gullberg, 2008) argued that using iconic gestures with (English) speech would make the speech understandable (for French children) even if that speech is in a different unknown language. If English and French are using typically the same gestures for the same situation, then it is possible for French children to understand the story from its gesture. However, it might not be possible because difference in groups, classes and culture would significantly affect the production of gestures; nevertheless, a number of gestures are generally used. In addition, Ekman andriesen (1969 cited in Allen, 1995) definition of emblematic gesture implied that this gesture is verbally understood if it is “well known” by the groups, and their class and culture. However, while learning a language, not all types of emblematic gestures are useful, as Allen (1995:527) suggested, “the inclusion of gestures in the encoding environment provide an elaborated context, thus causing a greater depth of processing and a more durable mental representation”. It is possible to suggest that, if the gesture used is accessed previously by the learner, otherwise it would affect the information understanding (Littlemore, 2009).

#### **IV. ENCYCLOPAEDIC KNOWLEDGE**

The final aspect of the relationship between language and cognition in this essay is the encyclopaedic Knowledge. It means the information that exists in people’s minds which establishes “a large inventory of structured knowledge” (Evans and Green, 2006 cited in Littlemore, 2009:71). Specific sets of this stored information would be activated by specific words and word combinations to create a type of linkage and this linkage tends to expand the ‘denotative’ meaning to include all the stored ‘connotative’ information correlating with that words and word combinations (Littlemore, 2009). The relations between words/word combinations and stored information would strongly connect ‘linguistic knowledge’ to ‘world knowledge’ and ‘semantic knowledge’ to ‘pragmatic knowledge’ (Evans and Green, 2006 Littlemore, 2009). This connection would extend the lexical meaning to include all the possible related meanings in specific situation and that would be different from person to person according to their experience or exposure to the language. As they pointed out, it is difficult or complicated to measure all the related meanings to a specific word, Meara and Wolter (2004) argued that concentrating on L2 learners’ ‘network knowledge’, which is the words relations construed in learners’ minds, would be more beneficial for teachers and researchers in studying these relations. A number of linguistic studies have supported the idea of network knowledge and how it is construed, for instance: Haastrup and Henrikson (2000) point out that “[v]iewing and studying L2 vocabulary knowledge as an integrated network is much more realistic than viewing and studying it as a list of unrelated words

(Littlemore 2009:72) Langacker's theory of domain matrix has shown that the meaning of a certain word is depending on the conceptualisation knowledge of this word in a certain context (Taylor 2002; Evans and Green, 2006). He argued that the 'domain based knowledge' plays a significant role in how words are used. When using a word in a specific context, although the domain or central knowledge of that word is needed, this domain could be considered as an 'objectified' meaning, because individuals are different regarding their knowledge and considering what is specifically the central meaning; a number of domains are conceptually intrinsic (semantic domains), whereas others, which are more complex, are conceptually extrinsic (pragmatic or only understood in the context) (Taylor, 2002). Langacker divided the encyclopaedic network into four types: 'the generic to specific', 'the intrinsic to extrinsic', 'the conventional to non-conventional' and 'the characteristic to non-characteristic' (Evans and Green, 2006; Littlemore, 2009). These types of network create flexibility in regard to the semantic meaning of the domain; so, the activation of different domain meanings depends on the different uses of words, for example: *the young man played the piano/the young man lifted the piano*, the domain of the word *piano* is different in these sentences, the first one means a 'musical instrument' while the other means an 'object' and Taylor associates the word *heavy* with it (Greenspan, 1986 cited in Taylor, 2002:443). The association of the word *heavy* might be different according to the context. i.e. if the *piano* is alone, then it is very heavy for one person to lift, but if that piano was a toy or may be a small model or even if it is a small real piano, it would be not heavy. The point is, certain context will make access to certain meaning of a word and describe it. However, that flexibility in selecting the domain meaning would have, to certain extent, its limits; a number of conceptual domains are not possible in specific contexts as in: *tell me a story/\*a book*, it is possible in the first but it is hardly accepted in the second, because, logically, book is long, cannot be memorized (*tell* would be associated with memorization and imagination) and also it takes a really long time (Taylor, 2002:446) The role of the domain meaning does not seem to exclude or ignore the semantic (lexical) meaning of a word as claimed below: fully specified preassembled word meanings do not exist, but are selected and formed from encyclopaedic knowledge (...) Cognitive linguists do not uphold a meaningful distinction between semantics and pragmatics, because word meanings always a function of context (pragmatic meaning) (Evans and Green, 2006:221) However, the lexical meaning appears to be an integral part in deciding the contextual meaning. Figuratively, it is the gate by which the domain accesses through; the domain (network, encyclopaedic, and contextual knowledge) would be based on the semantic (lexical) meaning, so, 'fully specified preassembled' semantic meanings 'do exist', but the re-employment of factors that change the focus from these semantic meaning towards another meaning (domain), which associates with the semantic in one way or another, to create a network of knowledge. In addition, cognitive linguists advocate the distinction between semantics and pragmatics, but, the focus in the recent studies tend to be on the relationship between them, because the study of language is usage based (functional) (Littlemore, 2009) In L2 learning, encyclopaedic knowledge plays a significant role, because it helps the learners: developing their vocabulary and word associations, developing their mental linguistic relations, accessing the implied (pragmatic) meaning, promoting their network of knowledge, expanding their framing system thoroughly, and evolving their exposure to the L2 and by that they will also be developed culturally. A first stage of L2 learning, the L2 encyclopaedic knowledge tends to depend mostly on the L1 encyclopaedic knowledge "parasitical relationship", but the two would be separated after the improvement of proficiency level (Ibid, 2009:87). In addition, network knowledge helps understanding the meaning of word combinations for instance: 'adjective noun combination' *the blue penis is not blue*, this has two meanings, either the colour of the penis is blue and the outside is not or the other way around, that would be decided through the context (Taylor, 2002). Another extrinsic knowledge example (which is personal) the first interlocutor received a message from the second and it tells "I'm in the green room" this combination does not activate only the adjective noun relation, but, the first interlocutor understood that the second is studying in the 'main library', which has coloured rooms, third floor, section B' and probably other things would also be activated as, the second interlocutor had chosen this section because it contains his/her books and if it is not, then the first interlocutor would think that maybe because all seats are taken in his/her section and soon. The activator of the whole situation is the adjective green; it is part of the semantic (lexical) meaning which is the 'library section' and it is understood because there is a mutual cultural and contextual understanding between interlocutors. Therefore, culture, especially in extrinsic knowledge, is a very significant aspect in considering the domain of the network and the flexibility and dynamicity of the encyclopaedic knowledge (Littlemore, 2009).

## V. CONCLUSION

In conclusion, cognitive linguistics has shown that there are strong relations between language and cognition, and there are numerous studies to evidence that. The aspects discussed above are indications of the language cognition relationship, and the cultural role in this relation. It appears to be obvious that cognition is the dominant and the controller of the language understanding. In construal, human mind activates a number of related thoughts from a certain situation (utterance), then the mind forms the suitable representation of that utterance according to the context and cultural knowledge, as if the mind is like a binocular that focuses at the most important (functional) part. Whereas in gesture, the relation is different, the mind forms (consciously/subconsciously) gestural movements with speech to help both the speaker and the perceiver. Finally, the encyclopaedic knowledge expands the mental scope and helps improving the construal aspect. In all of these aspects, and generally, in language-cognition relationship, there is a considerable influence by cultural aspects.

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