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Gestures and Speech in L2 Learning/Teaching: An Intertwined Relationship in Creating Meaning

Dr Assia Baghdadi *

Mohamed Boudiaf University - M'sila, (Algeria)

Assia.baghdadi@univ-msila.dz

Abstract :

Although scholars have been fascinated by gesture since antiquity, identifying it is still a difficult undertaking. In the 1960s and 1970s, gesture was studied with other bodily behaviors like gaze, facial expressions, body position, and proximity behavior as a sort of nonverbal behavior.These studies are referred to as nonverbal communication research.In contrast, since the 1980s and onwards, a new line of research has emerged that focuses on how closely gesture and speech are intertwined in the creation of meaning, which is the concern of the current paper, in which we attempt to shed light on gesture identification, its types and phases, the

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gesture-culture relationship, and then review various research studies that reveal the pedagogical implications.Finally, we offer some pedagogical suggestions and recommendations	*theory* ✓ *pedagogy,*

1. *Introduction*

Acquisition is not necessarily an internal process hidden from the observation of researchers. This is because the mind and cognition are not restricted to an inside-the-head domain. Certainly the brain is a necessary component of thinking, but it is not exclusive site of thought. As others in linguistics and psychology, including Vygotsky nearly a century ago, have argued that cognition incorporates features of the human body as well as human artifacts (Lantolf, 2000).

We all know that nonverbal expression is a substantial aspect of face-to-face communication. Language, in this sense, is more than a system of grammatical rules, that it is embodied (McCafferty, 1998). Ray Bird Whistell (1971), a famous kinesiologist, argued more than three decades ago that excluding kinesthetic activities from the research of communication is to wrongly presume that this activity adds nothing to the production of meaning. And, within mainstream linguistics, traditional areas of morphosyntax, phonology, and the lexicon continue to be the focus of language theories (Lantolf, 2000). In the same vein, Poyatos (1980) cites kinesic, kinetic, vocal, chemical, thermal, and dermal ‘Body Communication Channels' for ‘emission' and visual, auditory, olfactory, dermal, and kinesthetic channels for ‘perception' in relation to communicative interaction. He goes on to say that these channels are interwoven with sociocultural aspects that work as communicative systems as a whole, and that studying any one system in isolation is utterly oblivious.

However, in recent years, at least two major approaches to language analysis, the integrational linguistics and the cognitive linguistics have recognized the importance of the human body in our ability to make

meaning and have incorporated this potential into their theoretical frameworks.From the perspective ofintegrational linguistics, its founder Harris (2003: 45) asserts that "linguistic communication is a continuum of interaction which can be manifested both verbally and non-verbally", and therefore includes phenomena either ignored or marginalized in general linguistics. These phenomena are silence, pauses, grunts, tone of voice, facial expressions, eye gaze, haptic behavior, gestures, and movements of their body….etc. Cognitive linguistics, on the other hand, recognizes the body's relevance in not only speaking but also in generating specific forms of metaphorical and metonymic concepts that influence our thinking (Lakoff and Johnson, 1980; Gibbs, 1994; and "our conceptual system is structured by image-schemas" predicated on our "embodied spatial experience" as Kovecses (2006: 212) argues.

From the Vygotskian viewpoint, speech and thought are regarded to become "intertwined" at a certain time in intellectual development. McNeill (1992) believes that speech and gesture are interwoven in ontogenesis, with the former providing the linguistic element of cognition and the latter giving the imagistic element. McNeill (1987: 89) directly links inner speech to gesture, suggesting that: " Inner speech is the smallest unit in which imagistic and syntactic thinking come together". Accordingly, there would seem to exist an interconnection between inner speech, gesture, culture, and conceptualization as all of these are integral to each other (McCafferty,1996).

For a long time, nonverbal aspects have been regarded crucial to L2 concerns. Due to the perspective of language as a disembodied set of linguistic rules retained from the study of formal linguistics, there has been minimal attention in learners' acquisition or appropriation of nonverbal forms (McCafferty, 1998). The current paper focuses on a new line of research that focuses on how closely gesture and speech are intertwined in the creation of meaning by shedding light on the theoretical underpinnings of the inner speech and gesture dialectical relationship, as well as gesture identification, types, and phases. Then, concentrating on the gesture-culture interaction, a review of several

research papers that highlight the pedagogical dimension of gestures, particularly in L2 teaching and learning, will be presented. Finally, we'll provide some suggestions and recommendations.

1- Theoretical underpinnings of Speech and gesture relationship

Psychological and linguistic processes form a dialectical unity of mutual and dynamic interaction (Lantolf, 2000). According to Vygotsky (1987), thinking and speaking constitute a dialectical unity, which results in the reshaping of thinking as it is externalized in (social or private speech) (or writing).i.e., Each process follows its own set of principles and limits, yet they all have an impact on one another during the communication process. Vygotsky (1987: 251) explains that " in the mind the thought is present as once, but in speech it has to be developed successively. As thought transition to speech, what is originally unpartitioned and synthetic meaning becomes partitioned and analytic". However, according to Vygostky (1987), the influence of speech on thought is not always one-way, since there are occasions when thinking influences language and reshapes it to meet the speaker's goals and objectives.

The contrast and interconnection between thinking and speech was the primary focus of the research that Vygostky(1987) and his colleagues conducted on private vs. social speech. The former is assumed to be the central element in the development of human intellectual capacity. According to him, when a child begins to use language for thinking reasons (private speech), he has moved to an intrapersonal psychological plane, where communication is now used to aid problem solving and other metacognitive tasks, as well as interpersonal functions. In this regard, Vygotsky (1986: 249) wrote:

> In inner speech words die as they bring forth thought. Inner speech is to large extent thinking in pure meanings. It is a dynamic, shifting, unstable thing, fluttering between word and thought, the two more or less stable, more or less firmly delineated components of verbal thought.

Inner speech has been attributed special linguistic properties. The first has to do with syntax. When compared to external speech, inner speech

is based on the process of ellipsis where the least important elements with regard to meaning are eliminated, leaving only those grammatical elements that are salient to the context (Vygotsky, 1986 as cited by McCafferty, 1998).

The second property has to do with semantics. In this area, three major semantic qualities can be distinguished. First of all, words (utterances) that are filled with *sense* where the meaning as recognized in outward usage is of much less importance than its many psychologicalassociations. Vygotsky (1986: 244) argues "The sense of a word….is the sum of all the psychological events aroused in our consciousness by the word". The second semantic feature is termed *agglutination* which is compared to the process found in synthetic languages which form word meaning in such a way that several words can be merged into one. Vygotsky(1986: 246) illustrates "the new word not only expresses a rather complex idea, but designates all the separate elements contained in that idea". The third semantic feature of inner speech relates to the notion of an 'influx of sense' into words in which as Vygotskyargues (1986: 247) "the sense of different words flow into one another-literally 'influence' on an other-so that the earlier ones are contained in, and modify, the latter ones"

When it comes to inner speech connection with the outside world and specifically with speaker body, it is worth noting that some psychological theories have long acknowledged that the human body is involved in the creation of meaning, and hence in the thinking process (Fogel, 1993). McNeill et al. (1992) have more recently recognized the dialectical unity established by gesture and speech during the thinking for speaking process. Vygotsky (1987) was intrigued by gesture as a way of mediating social ties between parents and children.

2- Gesture: definition, types, and stages

Gesture refers to a multitude of movements that people employ when talking, such as moving their hands and arms, adjusting their posture, touching themselves (e.g., caressing their hair), various (nervous) ticks, and other fidgeting actions (Kendon, 1996). Gesture researchers

distinguish between gestures that occur independently of speech and those that co-occur with, and partially depend upon, speech for their full meaning to emerge (Lantolf, 2000). According to McNeill's (1992) system, those gestures that are not dependent on words and include actions such as combining the tips of the thumb and index figures to form a circle to signify OK in English, are known as emblems . On the other hand, gestures that synchronize with speech depict some of the meaning but rely on speech to complete the meaning.

McNeill's (1992) has identified four types of gestures that co-occur with speech: iconics, metaphorics, beats, and deictics. ***Iconic gestures*** occur in conversations when a speakerdescribes an object or event, and they impart information encoded partially or not at all in speech (ibid). For instance, a speaker may say something like "the bird flew out of the nest," but show the direction of flight with hand movements in an upward or downward trajectory.

Metaphoric gestures are similar to iconicsexept that their referent is an abstract concept than a concrete object or event. For example, when a speaker says, "I feel entirely closed in," he or she places both hands out in front of the body, separated by approximately a foot and palms facing each other (ibid).

Beats, which mimic someone keeping time with music, involve hand movements that can be quite evident or very subtle, involving little more than a "flick of the hand or fingers up and down, or back and forth." (ibid. 15).Their importance stems from their "semiotic value" as indicators of the importance of the speech segments with which they synchronize, such as when a speaker introduces a new topic or character into a story (ibid).

The final category, ***deictics***, function, as the term implies, to point to an entity or event.The deictic 's object may or may not exist in time and space. As an example, a speaker might say "Here it comes" while pointing to a bus, or a speaker might point to a place or event being discussed that occurred in a faraway location at a period long removed from the time of speaking.

In addition to the gestures' types, McNeill (1992) segments gestures into four phases: rest, preparation, stroke, and retraction, or return to rest phase.Speakers prepare for the movement, or stroke, phase by positioning their hands (and often arms) from the rest position to the position where they prepare for the movement, or stroke. Speakers do the part of the gesture that conveys meaning during the stroke phase. The stroke is timed to coincide with a specific section or sequence of segments in speech that co-expresses or complements the meaning conveyed by gesture. The stroke may be held for a short time or instantly returned to the rest position once completed. The Growth Point is expressed by the stroke-speech synchronization (ibid).

David McNeill (2005) influenced by Vygotsky's theory on the integration of thinking and speech, has uncovered an important relationship between gesture and speech. According to McNeill hypothesis, gesture and speech form a dialectical unity that parallels the connection Vygotsky proposed between thinking and speech. McNeill (2000: 155) suggests that gestures are "material carriers of thinking" and therefore provide "an enhanced window on mental processes"(ibid: 144). According to McNeill (2005), speech, like Vygotsky's theory, not only a segment thought, but also represents it because it relies on signs to build meaning; gesture, on the other hand, preserves the synthetic nature of thought and does not represent, but depicts it because of its spatial medium and imagistic quality. Hence, gesture, as a representation of unpartitioned thought, and speech, as a representation of partitioned thought, produce a dialectical, which McNeill refers to as the "Growth Point," which is formed by the fusion of "two separate semiotic architectures," one verbal and the other imagistic (McNeill and Duncan, 2000: 144).Furthermore, gestures occur at high points of communicative dynamism, which McNeill, following Firbas (1971), defines as 'the extent to which the message at a given point is "pushing the communication forward"' (1992: 207). That is, if the speaker is at a point in his or her narration where there is a decision to be made about which element of the narration to focus on, this is a point of 'high'

communicative dynamism. According to McNeill (1992: 208), high communicative dynamism is tied to Vygotsky's consideration of the psychological predicate:

> Thus a gesture should occur exactly where the information conveyed is relatively unpredictable, inaccessible, and /or discontinuous……, where communicative dynamism is increasing and with what Vygotsky regarded as the psychological predicate.

Hence, it can be said that there is a strong relationship between forms of private speech and the use of gestures. In the sections below, we will review the various research studies that have been conducted on the relationship between L2 teaching and the use of gestures, as well as the impact of gestures on L2 learning. In the sections below we will provide a review on the different research studies that have been realized regarding the relationship between L2 teaching and the use of gestures as well as the impact of using gestures on L2 learning.

3- Gesture and culture

There are various incidental links between gesture (or other body behavior) and culture. It has been suggested, for example, that Japanese speakers learn not to gesticulate (von Raffler-Engel 1975). According to Chen (1990), the Chinese consider the employment of various motions disrespectful, whereas the Japanese ideal is the "inscrutable" controlled expressionless face (Argyle, 1975). Despite the absence of proof, such opinions appear to be prevalent both within and beyond the countries concerned. In Ghana, gesturing with the left hand is considered a taboo. Speakers suppress left-hand pointing, and as a result, right-hand pointing is produced even when speakers point leftward across their body (Kita &Essegbey 2001).

Similarly, there are common perceptions of European gestural behavior. The notion that southern Europeans gesticulate more frequently than northern Europeans is more likely to be accepted than rejected. One reason for the persistence of such notions is that they appeal to widely held cultural preconceptions. However, there hasn't

been much study that suggests gesture frequency is culturally determined. Despite the cultural preconception that northern Europeans are not overly expressive, Gullberg (1998) observed no difference in the frequency of gestures during tales generated by native speakers of Swedish and French.

4- Gestures in L2 Teaching

The majority of studies on L2 learners' gesture use focused on the relationship between L2 language proficiency and the number of gestures they used, as well as some possible relationships between proficiency level and the use of specific types of gestures.According to Goldin-Meadow (2003:280): ‘‘Gesture functions as both an instrument for communication for listeners and a tool for thought for speakers," Gestures aid memory retrieval and minimize cognitive load for speakers. They can help listeners understand a spoken message and communicate notions that aren't expressed in words (Goldin-Meadow, 2003).

In a study by Sime (2006), he looked at how students in an EFL class interpret teachers' gestures and other nonverbal behaviors. According to this study, one of the most important things that L2 learners acquire in a language classroom is how to interpret teachers' gestures in conjunction with their verbal information in order to learn well.Learners usually believed that gestures and other non-verbal behaviors played an important role in the language learning process. The study findings indicate that according to the students, gestures serve three different tasks in EFL classroom engagement: 1) Cognitive, i.e. gestures that aid learning; (2) Emotional, i.e. gestures that serve as dependable communicating devices for instructors' emotions and attitudes; and (3) Organizational, i.e. gestures that aid classroom management. These findings revealed that students perceive instructors' gestures in a functional way, and that they employ these and other nonverbal signs and cues in their learning and social interactions with the teacher (Sime, 2006).

Wang, Bernas, and Eberhard (2004) report on the influence of gesture-based instruction on learning in children with ADHD (Attention

Deficit/Hyperactivity Disorder) in another study. The children in this study, like those in the Goldin-Meadow study, were in elementary school (mean age = 7,5 years), but they had been diagnosed with one of three forms of ADHD: inattentive, hyperactive, or impulsive, or a combination of these. A large percentage of the children (76%) had been diagnosed with another condition (e.g. Conduct disorder, learning disability, etc). The students (N= 45) were divided into five groups, with one of five teachers assigned to each group. The goal was to have the gestures mix together. The results revealed that the children responded more frequently to the gesture-only and gesture-speech modalities than to the speech-only modality, and that instruction using the first two modalities resulted in a higher success rate in solving the puzzles, particularly when the gestures used were deictic or iconic.

The researchers suggest that gesture-linked modalities have a beneficial pedagogical effect because they capture and hold students' attention for longer periods of time, offering "more complete information" than voice alone could (ibid: 226). A combination of a deictic gesture (e.g., bringing the fists together) and a verbal message "provides more concrete, visual, dynamic, and easy-to-follow information for a child than the teacher's verbal message alone" when a teacher wants to tell the students that they need to bring two pieces together to solve a puzzle.

5- Gestures and L2 Learning

There have been attempts to investigate the comprehension of gestures by L2 learners; for instance, Mohan and Helmer (1988) discovered a positive impact on gesture comprehension in children who had a lot of exposure to the L2 in naturalistic conditions. However, little research has been done to date on whether learners not only understand but also adapt or acquire nonverbal aspects.

According to Nobe's research, adult foreign language learners use more gestures than native speakers, and situations of difficulty in expressing oneself are accompanied by an increase in the number and frequency of gestures (Nobe, 1993).

Lazaraton conducted a study on the use of gestures by two ESL instructors at a north American university, but she only mentions one of them in her published work (2004) – a Japanese MA ESL graduate student with six years of teaching experience (.i. e., five years in japan and 1 year in the US). Over the course of three lessons, the researcher looked at the use of gestures during unplanned vocabulary explanation. The majority of the gestures were used to define verbs (e.g. argue, swear, weave, etc). Although gestures were not used in some instances (quit, give up, and draw).Importantly, the gestures did not appear to have a compensatory function, according to lazaraton; rather, they appeared as a natural part of explanatory talk, adding to the depth and efficiency of communication.

This is exactly what McNeill (2005) means when he talks about the gesture-speech interface's co-expressivity.Lazarton, unfortunately, did not look into the effects of a teacher's gestures on student learning.

Jody and Elena (2005) investigated whether the role of deictic (i.e., point) and symbolic (i.e., imagistic) gestures in advanced Spanish-English second-language learners is consistent with that of intermediate second-language learners. The findings of this study support the hypothesis that different types of gestures may be associated to speech in different ways. When proficiency is low, deictic gestures may rise, indicating that participants utilized more deictic gestures in their second language.Symbolic gestures, in contrast to research with low or intermediate competence participants, did not appear to be associated to proficiency.

Tammy et al. (2009) also looked at the relationship between second language proficiency and the frequency and type of gestures (illustrators, compensatory illustrators, adaptors, emblems, regulators, and affect displays). Learners with higher levels of language proficiency are more likely than their less skilled counterparts to use gestures that improve the meaning of the spoken communication and contribute to better communicative competence. Furthermore, advanced learners made much more speech-related, meaning-enhancing gestures than beginning and

intermediate students, and participants made significantly more gestures in their native English than in the target language (Spanish) (Tammy et al., 2009)..

The ‘kinesic diversity in code switching' of bilingual children in Canada has been researched (von Raffler-Engel, 1976). Although the findings were "scant," they did show that in a retelling task, both Anglophone and Francophone children tended to accommodate their interlocutor nonverbally to some extent, using gestures that were different from those used when interacting with children of the same language/cultural background. Adult bilinguals, on the other hand, were not accommodated in the same way, according to Von Raffler –Engel.

Given the numerous types of gestures, the question of whether there is a link between them and linguistic skill arises naturally. According to one study, children in their weaker language used more conventional and deictic gestures without speaking, but symbolic gestures were not utilized as frequently in their stronger language (Nicoladis, 2002). The substantial link between symbolic gestures and linguistic proficiency, however, is not confined to children.

Gullberg(1998) reported that intermediate second language learners (5 with French as their first language and 5 with Swedish as their first language) used more symbolic gestures when retelling a story in their first language than in their second language. In contrast, the speakers used more deictic gestures in their second language. Gullberg (1998) found that this category of gesturing held a variety of very important functions. This gesture-type primarily co-occurred with grammatical, not lexical difficulties and used space to indicate temporal properties such that, by pointing to a certain spot, an idea of tense could be expressed (Gullberg, 1998). For example, with L2 production, participants occasionally had difficulty expressing past tense verbs. By pointing to the left of an invisible median axis running down the length of the speaker’s body, the implication of past tense was passed on to the listener, while the present tense was verbally expressed by the speaker. Participants, in fact, showed some difficulties expressing past tense verbs in L2 production, for example. The implication of past tense was

passed on to the listener by pointing to the left of an invisible median axis running down the length of the speaker's body, while the present tense was verbally articulated by the speaker.

6- Conclusion

As mentioned in this paper, gestures and other nonverbal behaviors are types of input to second language learners that must be recognized as a major aspect in research on second language acquisition. The use of gestures by instructors in the classroom has already been proved to have positive impacts, and gesture-based thinking by students has been shown to often suggest acceptable solutions to many language acquisition challenges.

However, no significant research has been conducted to determine whether the information provided in the gestural channel is taken into consideration by the learners. Additionally, whether gestures (other than "emblems") can be taught and if teaching gestures enhances language learning are pen concerns. Furthermore, more research into the relation between gesture use and proficiency is required. Andbecause language and cultural experience, as well as proficiency level, are crucial factors influencing the information value of gestures in a speech event, future research on speech and gesture should include more cultural components. Other nonverbal forms of communication should be incorporated to help L2 comprehension and raise L2 learners' awareness of them. Furthermore, the L2 instructors' gestural ability necessitates additional consideration.

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