Modern English Education, Vol. 10, No 3, Winter 2009

Second Language Gesture: Both for Listeners and Speakers

Suyeon Kim
University of Wisconsin-Madison

Kim, Suyeon. (2009). Second language gesture: Both for listeners and speakers. *Modern English Education, 10*(3), 90-113.

Second language (L2) scholars agreed that L2 gesture is not separable from second language acquisition (SLA) and developed various perspectives on the functions of gesture, but little research has been done to synthesize theoretical approaches with a big-picture view. Hence, this paper summarized these diverse perspectives into two main categories (i.e., psycholinguistics and sociolinguistics), and compared limitations and contributions of each perspective from a critical point of view. In contrast to psycholinguists who focus extremely on the function of gesture for effective communication, socio-cultural scholars consider both social and cognitive functions within the Vygotskyan theoretical framework, whereby cognition occurs first at the interpersonal level and then, the intrapersonal level. Although the intrapersonal perspective has been explored from more balanced viewpoints, neither of the two perspectives has fully examined how L2 gesture functions in SLA yet because of the lack of studies. Therefore, this study provides suggestions for further studies in order to lead L2 scholars to perform theoretically/methodologically well-designed gesture study in the future. Eventually, these guidelines will be conductive to putting forward L2 gesture as a central issue in the field of SLA and suggest how gesture can be utilized for L2 learning and teaching.

[L2 gesture/cognitive function/social function/socio-culturaltheory/ communicative strategies/thinking-for-speaking patterns/제2언어 제스쳐/인지적 기능/사회적 기능/사회 문화 이론/의사소통전략/말하기를 위한 사고 유형]

I. INTRODUCTION

For several decades, studies on gesture have generated wide interest in the field of psychology, linguistics, and communication-related areas. This wide interest contributed to upgrading the status of gesture to at least that of linguistic features in human interactions. Kendon (2004) pointed out that gesture research has developed multiple perspectives to answer why human beings gesture when they talk. However, second language acquisition (SLA) researchers have paid little attention to gesture and nonverbal aspects. Rather, they have focused primarily on verbal aspects and linguistic competence. This tendency is closely tied with the perspective of the mainstream psycholinguists, who view SLA as individual cognitive processing. This limited view led to a critical debate between cognitive and socio-cultural understandings of how a new language is acquired. This debate reached a crescendo when Firth and Wagner (1997) strongly criticized that the cognitive approaches have ignored the social aspects of SLA, such as language use and interaction. Since then, as Ortega (2005) maintained, the cognitive SLA research has still been prevalent in this field. However, most recently, the socio-cultural camp has gained more influence by vocalizing the importance of research on social interactions and language use including gesture.

With respect to gesture, recently, some researchers in SLA have had growing interest in why second language (L2) learners gesture when they talk in their L2 and strongly agree that it is hard to say how L2 learners acquire their target language without considering gesture. McCafferty (2004) cited Vygotsky (1986) to emphasize that gesture is closely related to the ontogenetic development of language: "the word at first, is a conventional substitute for the gesture" (Vygotsky, qtd. in McCafferty, 2004, p. 149). In relation to L2, Gullberg (2006a) proposed one of the most crucial reasons for studying gestures in a second language context: that is, through L2 learners' gestures, we can understand how L2 learners solve their problems related to language and discourse and acquire their target language in social and cognitive domains. Similarly, Stam (2006) also provided a crucial reason as follows: "looking not only at learners' speech but also at their accompanying gestures gives us a clearer and more complete picture of their progress in learning another language than looking at speech alone" (p.

146). This understanding seems to be possible because "although learners' speech is ambiguous, their gestures are not" (Gullberg, 2006b, p. 162).

Although gesture scholars have developed different perspectives on the function of gesture, two main viewpoints have been proposed: interpersonal and intrapersonal functions. For example, some studies (e.g., Kendon, 2000, 2004) argued that gesture serves an interpersonal function for more effective communication among speakers and listeners. More specifically, in the field of SLA, Gullberg (2006a) emphasized the role of gesture as *communicative strategies* (*CSs*), which L2 learners employ to compensate for their lack of linguistic knowledge and to foster comprehension among native speakers (NSs) and non-native speakers (NNSs).

In contrast, other research has more vigorously examined the intrapersonal function of gesture for speakers themselves. For example, McNeill and Duncan (2000) argued that gesture functions as a window to see the inner mind of speakers. Other researchers (e.g., Alibali, Kita, & Young, 2000; Kita, 2000; Krauss, Chen, & Gottesman, 2000) emphasized the role of gesture as a facilitator of speakers' thinking or/and speaking processes. Also, in the field of SLA, L2 gesture scholars, who are strongly inspired by the Vygotskyan socio-cultural theory (SCT), have formulated the intrapersonal perspective into two sub-functions: (a) An expressive way to show the mind of L2 learners and (b) a manipulatory[1] role to facilitate thought/verbal processes of L2 speakers. For example, in relation to *inner speech* (termed by Vygotsky), some studies on L2 gesture (e.g., Negueruela, Lantolf, Jordan, & Gelabert, 2004; Sime, 2006, etc.) found that the gestures of L2 speakers play a role in revealing L2 production processes: L2 learner's thinking-for-speaking (TFS) patterns are situated in their L1 TFS'. On the other hand, other L2 gesture scholars found that, in addition to serving as a window into L2 learners' mental processes, gesture more actively plays a manipulatory role as a thought/speaking processing facilitator. One of the good examples is McCafferty's (1998, 2004, 2006) work, arguing that the main role of gesture, like speech, is to mediate thought and facilitate L2 verbal production. However, this intrapersonal viewpoint does not deny the interpersonal perspective because this perspective is based on the Vygotskyan viewpoint:

[1] The term 'manipulatory' was originally used by Kendon (2004).

Mediational tools, such as language and gesture are instrumental in transforming human cognition from the interpersonal into the intrapersonal plane.

As described above, different perspectives on L2 gesture have generated different results. While the interpersonal viewpoint has been limited by being extremely focused on the communicative purpose of L2 gesture, the intrapersonal perspective has developed more fruitful and multilateral viewpoints based on the idea that the two functions (inter-and intra-personal) are not mutually exclusive. This paper, therefore, addresses the following two objectives.

First, synthesizing the existing gesture studies, I will outline two perspectives (inter- and intra-personal) that the previous work has developed and contrast their contributions and limitations. Although a small number of L2 gesture studies have demonstrated the important role of gesture in L2 learners' interactions from several perspectives with different research purposes, few studies have been conducted to delineate clearly these diverse perspectives. As a result, due to few studies, there is little sense of consistent viewpoints on the function of L2 gesture, and the function is still controversial. To address this problem, this study will provide a broader view to promote deeper understanding of how L2 gesture functions in the social and cognitive aspects of SLA. Also, this expanded view will help L2 gesture scholars to reconceptualize their viewpoints.

Second, in light of these contributions and limitations of the two perspectives, this paper will suggest the directions for further studies and what tasks we need to explore more. Although the intrapersonal perspective has generated a more balanced viewpoint, neither of the two perspectives has been sufficiently examined yet so as to thoroughly explore how gesture interacts with SLA. Therefore, these guidelines will provide more desirable directions theoretically and methodologically for L2 gesture scholars from a more balanced perspective and further, suggest the well-balanced perspective research needs to be expanded to research on teachers' gesture in classroom settings.

II. LITERATURE REVIEW

1. Definition and Types of Gestures

The most influential definition of gesture is stated by McNeill (1992): "When people talk they can be seen making spontaneous movements called *gestures*. These are usually movements of the arms and hands and are closely synchronized with the flow of speech" (p. 11). In reference to types of gestures, the most widely accepted category is McNeill's (1992) two different types of gestures, which are not mutually exclusive: Representational gestures depicting concrete or metaphorical features, and beats moving up and down without describing any linguistic aspects.

By integrating gesture with speech, McNeill's (1992) early work has provided essential theoretical frameworks and developed the methodological system for gesture studies and has had a huge effect on systematic gesture research. In other words, the driving factor to lead the status of gesture to a significant level is the theoretical framework to see speech and gesture dialectically intertwined "the speaker appeared to be using various kinds of descriptive and pantomimic gestures to express content that was coordinate with the content with the associated speech" (p. 78). Therefore, the central tenet of the gesture studies in this paper is McNeill's idea of gesture defined as co-speech hand/arms movements.

2. How Does L2 Gesture Function in SLA?

1) Social Function of Gesture for Communicative Effectiveness

How gesture is related to human interactions is still controversial among gesture scholars: The main question is "Does gesture have a social function for interlocutors or an cognitive role for speakers themselves? "Two functions will be dealt with in the following sections in the order of the social function and the cognitive role.

With regard to the social perspective, Kendon has generated fruitful and seminal work by providing a pivotal ground for gesture studies; that is, gesture, as visible language, contributes to communication as effectively as language can by reducing ambiguity and providing more concrete/visible meaning. Kendon's perspective was supported and demonstrated by Melinger and Levelt (2004):

"supplement and complement their speech" (p. 135), and gesture is instrumental in conveying their intentional meaning. Another supportive evidence came from Özyürek's (2000, 2002) study in which speakers employ iconic and directional gestures adjusting to the location of listeners: e.g., when speakers say "out," the gestural direction is based on listeners' current place. The adjustment serves to make the directions more visible and accessible for listeners and enhance mutual understanding. Thus, gesture serves an interpersonal role to enhance collaboration between interlocutors and intersubjectivity.

(1) L2 Gesture as a Communication Strategy (CS)

The most prominent perspective in the SLA is that L2 gesture would be utilized as *communication strategies* (*CSs*). At the center of this perspective is Gullberg who did experimental studies to illustrate how L2 gesture critically contributes to communicative effectiveness and systematized gesture study as an independent area within the SLA theoretical framework. This attempt contrasts with the previous gesture studies in SLA (e.g., Faerch & Kasper, 1983; Chen, 1990), which considered that gesture belonged to a part of oral *CSs*. Gullberg (1998) found that L2 learners produced more gesture than L1 speakers to overcome their linguistic limitations. In some cases when L2 speakers encountered lexical retrieval difficulties, they utilized iconic gesture to deliver their core message in a visual way or elicit listeners' lexical help. In such cases, deictics and beats serve to sustain dynamic interaction by signaling that L2 speakers are highly in lexical retrieval processes. Thus, L2 gesture contributes to facilitating listeners' comprehension and collaboration between interlocutors. Gullberg concluded that L2 learners' gestural behaviors can be described as "the lower the proficiency, the greater the number of gestures" (p. 79).

(2) Contributions and Limitations of the Social Perspective of L2 Gesture

As illustrated above, socially-oriented gesture research has very vital meanings on several grounds. However, a fair number of drawbacks have been raised. Hence, in this part, I will discuss the contributions and limitations of this perspective in detail. First, some gesture studies (e.g., Kendon, 2000, 2004, etc.) significantly demonstrated that gesture plays an essential role for communicative

effectiveness between addressers and addressees. However, this interpersonal perspective has been criticized by gesture scholars on a fair number of grounds. For example, Krauss et al. (2000) claimed that the evidence to show gesture is used for communicative purposes is not clear enough to explain why people produced gestures when they could not see listeners, i.e., phone talks. Also, in the field of SLA, the interpersonal perspective has been criticized despite its contributions. McCafferty and Ahmed (2000) pointed out that the interpersonal perspective does not consider how L2 gesture is intertwined with speaking and thinking processes.

Another criticism is related to the dichotomy of native speakers (NSs) and non-native speakers (NNSs). *CS*-based studies were derived from the biased identities of NSs and NNSs: while NSs were described as evaluators of L2 speakers' gestural behaviors, NNSs were identified as testees (Gullberg, 1998). As a result, these *CS*-based studies are problematic in the sense that they primarily considered how NNSs use gestures for enhancing NSs' comprehension or eliciting their help, rather than how participants negotiate meaning through gestures for mutual understanding, regardless of their status (Belhiah, 2005).

Likewise, because it is extremely focused on the role of L2 gesture for communicative comprehension and down-played how gesture is intertwined with speakers' thought/speaking, this perspective did not provide full theoretical lenses. Further, this perspective in SLA has not sufficiently examined yet, so we still have a lot of knowledge not clearly known.

2) Cognitive Function for Speakers Themselves: Gesture, Speech, and Thought

The social perspective that gesture is only for communicative purposes has been broadened into the cognitive perspective by intrapersonally-oriented gesture scholars. Within the Vygotskyan theoretical frameworks, the intrapersonal perspective has examined more robustly and numerously how gesture interacts with human interactions in both social and cognitive domains. Within this cognitive community, a majority of gesture scholars (e.g., Alibali, Heath, & Myers, 2001; Goldin-Meadow, 1999; McNeill, 1992, etc.) do not ignore the

communicative role of gestures although they viewed the intrapersonal function as fundamental.

Also, in the field of SLA, Vygotsky has provided the underlying frameworks and inspired L2 gesture scholars into pursuing how L2 gesture contributes to L2 learners' cognition from the interpersonal to the intrapersonal plane. More specifically, although during 1990s, L2 gesture studies were extremely inclined to the interpersonal side, more recently, within the framework of Vygotsky's SCT, some researchers (e.g., McCafferty, 1998, 2002, 2004; Negueruela et al., 2004) have expanded the limited scope of the interpersonal view to the intrapersonal view. Not ignoring interpersonal aspects of gesture, this intrapersonal view has been developed into two sub-functions: (1) gesture as an expressive way to see *inner speech* Vygotsky (1978) argued that by internalizing social interaction, human cognition occurs as a type of *inner speech* at the intrapsycholgoical level. In short, *inner speech* is an ontogenetical product of interpersonal social activities. Therefore, in this paper, I argue that gesture to show *inner speech* is originally formed from social speech at the interpersonal level, so the expressive role of gesture can not be explicitly excluded from the interpersonal function of L2 learners and (2) gesture as a manipulatory role to facilitate thought/speaking processes of L2 learners.

(1) Expressive Role of Gesture: Inner Speech, Thinking-for-speaking, and Gesture

On the basis of the Vygotsky's frames, McNeill (1992) argued that gesture is a window to show inner mind, or 'psychological predicate' (originally termed by Vygotsky). The idea was developed to McNeill's *growth point* (GP), or the dialectical association of speech and gesture. Consequently, "the speakers' minimal idea unit that can develop into a full utterance together with a gesture" (McNeill, 1992, p. 220), and speech, gesture, and thought are intertwined.

In this vein, a number of gesture scholars examined how gesture is associated with speech and thought, based on Slobin's (1996) thinking-for-speaking (TFS) hypothesis proposing that human thinking is filtered through language. TFS patterns embedded in speech and gesture of different language speakers were examined through Talmy's (1985) language typologies in motion events: (a) In satellite-framed language (S-language: e.g., English and Chinese), path of motion

is encoded in satellites (e.g., adverbs or particles), but manner is expressed with main verbs, and (b) in verb-framed language (V-language), path is encoded in a path verb (e.g., in Korean) or separate linguistic categories (e.g., in Spanish), but manner information is missing or expressed with a gerund.

One of the seminar works is McNeill and Duncan's (2000) research in which gesture revealed different TFS patterns of English and Spanish NSs. English (S-language) NSs synchronized manner gestures with manner verbs and path gestures with satellites. In contrast, Spanish (V-language) NS expressed manner information only gesturally, not verbally (i.e., manner fog) and focused path gestures on verbs. Thus, gestures serve an essential role to display different TFS patterns of speakers under different language typologies.

① Gesture to Reveal L2 Speakers' TFS Patterns through Inner Speech

Studies on L1 TFS patterns inspired L2 gesture scholars to explore whether TFS patterns of bilingual speakers involve their L1 or L2. Stam (2001) replicated McNeill and Duncan's (2000) study with the same task depicting the Tweety Bird cartoon. The main purpose of his study is to see the TFS patterns that intermediate and advanced levels of ESL learners (L1 Spanish) employ in their L2 production. The finding shows that the expressive way of motion events depends on the components (i.e., path or manner). First, in the case of path, some participants are slightly moving toward English (S-language) TFS pattern, verbally/gesturally focusing on path of motion through satellites, such as adverbs. This change contrasts with their L1 Spanish (V-language), in which path is encoded in the motion verb itself. However, in relation to manner, both levels of ESL learners were gesturally situated in their L1 TFS manner even when linguistic forms are absent. Through the small amount of shift from L1 to L2 TFS designs, we can observe how L1 and/or L2 affect(s) L2 learners' inner mind during the process of language transfer.

Also, in his most recent study, Stam (2006) more specifically explored how path is expressed linguistically/gesturally in Spanish native speakers'L2 (English) speaking and what type of TFS patterns L2 learners' gestures employ. Consider the following example in which an advanced Spanish ESL speaker describes the scene 'Sylvester comes out of the drain pipe.' The ESL speaker did not

synchronize the path gesture. Rather, the stroke of the path gesture (i.e., the downward trajectory) co-occurred with the verb "go." Thus, the ESL speaker still retained L1 Spanish TFS patterns for path.

Similarly, Negueruela and his colleagues (2004) also explored the interconnection of gesture-speech in the path and manner expressions of English and Spanish speakers. Their study assessed the ‘gesture and speech’of Spanish and English bilingual speakers as well as English and Spanish monolingual speakers. In the case of Spanish and English monolingual speakers, the finding of Negueuela and his colleagues supported McNeill and Duncan’s (2000) study in that while Spanish NSs revealed their own V-language TFS pattern by encoding path gestures in verbs and showing manner fog, English NSs are grounded in their own S-language TFS type by encoding path gestures in satellites and manner gestures in manner verbs. However, Negueruela et al. found different results from Spanish ESL speakers. Consider the following two examples to compare different TFS patterns of English L1 and L2 (L1 Spanish) speakers in encoding of path of motion.

English NSs synchronized the path gesture with the satellite "back." This typical L1 English pattern was in contrast to TFS patterns of Spanish ESL speakers who encoded the path gesture in the verb "fall’ as Spanish NSs typically did. In encoding of manner. English NSs synchronized a manner gesture with the manner verb "tumbling." However, Spanish ESL speaker expressed manner information with gestures in absence of verbal manner.

Consequently, regardless of L2 proficiency levels, Spanish ESL speakers had a strong tendency to maintain L1 TFS patterns by following typical L1 patterns of encoding of path and manner. This result suggests that speakers have not fully acquired a second language yet and are at immature L2 developmental stage.

In this domain, Choi and Lantolf (2008) demonstrated TFS patterns of Korean-English bilinguals. They found that Korean ESL speakers followed English NS’s pattern by synchronizing the path-only gesture with the satellite "through." However, in encoding of manner information, the speakers encoded the manner-only gesture in the unfilled pause. This is not similar with the typical pattern of English NSs who express manner gestures with manner verbs. This result implies that Korean ESL speakers were more likely to shift to L2 TFS

patterns in encoding of path, but they were more likely to retain L1 TFS patterns for manner. As described above, L2 speakers are still at the transitory phase from L1 and L2. Negueruela and his associates highlighted that this phenomenon implies that L2 learners' TFS patterns need to be instructed since L2 learners cannot acquire L2 TFS system with the increase of their proficiency.

Through this section, L2 gesture as a window of *inner speech* indicates that L1 TFS patterns essentially influence the processes of L2 gestural behaviors, and at least two languages (L1 and L2) affect the inner mind of L2 speakers. This finding contributes to deepening our understanding of what factors affect L2 gesturing and thinking patterns during the processing of L2 production. Through this finding, we can infer that the expressive gesture to show *inner speech* is ontogenetically formulated by cultural and social activities and consequently, is implicitly inter-connected with the interpersonal level. However, each study showed slightly different results, and some studies did not explicitly report how L2 proficiency is related with TFS patterns. Hence, longitudinal studies seem to be necessary to clarify how L2 learners' TFS patterns changes as their proficiency increases.

② Manipulatory Function of Gesture for Facilitating Thought/Speaking Processes

In addition to this expressive role to show *inner speech* ontogenetically formed, gesture serves to facilitate L2 speakers' thinking/speaking processes. Some gesture studies argued that gesture is significantly associated with speaking production. Rauscher, Krauss, and Chen (1996) investigated the role of gesture through an experimental study, in which gesture was prohibited, and found that gesture prohibition resulted in verbal dis-fluency about spatial information. This finding aligns with Krauss and his associates' (2000) claim that gesture serves to manipulate lexical production by enhancing lexical access. If so, how does gesture facilitate the lexical access? The Lexical Retrieval Hypothesis by Krauss et al. can be the answer: "The lexical gesture provides input to the phonological encoder via the kinesic monitor. The input consists of features of the source concept represented in motoric or kinesic form…These features, represented in motoric form, facilitate retrieval of the word form by a process of cross-modal priming" (p. 269). Consequently, iconic gestures activate syntactic and semantic

access to the brain dictionary by providing visual clues and eventually result in more active lexical retrieval.

Going further from the Lexical Retrieval Hypothesis, other gesture scholars expanded the role of gesture as a speaking production activator to thinking and speaking facilitator. Alibali, Kita, and Young (2000) suggested that gesture highly involves in the spatial conceptualization and verbalization. In this study, two tasks were given to the participants: (1) an explanation task- judging/reasoning whether two containers (i.e., a glass and a bowl) have the same/different amount of sand when the same amount was poured into each container and (2) a description task- depicting how different the two containers look. This study found that different tasks generated different gestures: While pointing gesture were used for the description task, substantive gestures, depicting some dimensions of any object (e.g., the width), appear in the more challenging explanation task. Consequently, the authors suggest the Information Packaging Hypothesis (Kita, 2000), "the action of gesturing helps speakers to organize spatial information for verbalization, and in this way, gesture plays a role in conceptualizing the message to be verbalized" (p. 610).

③ L2 Gesture as an Operator of Speech and Thought

Especially in the field of SLA, McCafferty pioneered the exploration of the manipulatory role of gesture to promote L2 thinking/speaking from the theoretical lens of Vygotsky's SCT: Gesture, like speech, serves as a mediational tool to regulate our cognitive activities which start from the interpersonal and are transformed to the intrapersonal level (Vygotsky, 1978). To show how the SCT inspired L2 gesture studies, the current study introduces McCafferty's four studies.

The first study of McCafferty (1998) was designed to address how gesture in private speech serves as a meditational tool for self-regulation. His findings are summarized into three regulational work related to lexical retrieval processes.

First, object-regulation co-occurred predominantly with deictics. For instance, pointing gestures were used to trace objects in a cohesive way on the gestural space: "While saying '*one monkey in each basket play with the hat, the other two monkeys, they took their hats,"*used her finger to trace lines back and forth

between the monkey and the hats in the baskets during the second mention of the monkeys" (p. 86, Italics from the original).

Second, other-regulation was related to someone else. For instance, when speakers encountered lexical retrieval difficulty, they tried to elicit lexical help from the researcher through eye contact. Another example is that iconic gestures offered visual clues for problem-solving when speakers faced a lexical retrieval problem: "In describing the fruit picker's activity looked at the researcher, said "*picking?*," the L2 speaker brought her arm up and performed a fruit-picking motion with her hand as she spoke. She then repeated '*picking*' and added "*many pears?*"simultaneously creating a box with her fingers, as if containing this proposition" (p. 88, Italics from the original).

Finally, in case of self-regulation, non-verbal expressions appeared in absence of verbal production: e.g., tilting his head and/or gaze shifts. For instance, with upward gazes L2 speakers came up with self-correction implying self-understanding. In other cases, gesture occurred without private speech. For example, L2 learners used beats with other types of gestures, such as iconics, in order to offer an imagery feature for lexical searching, especially in the case of having difficulties accessing lexical items. In contrast, in most cases, gesture comes slightly ahead of private speech: e.g., before speaking to themselves, speakers nodded or shook their heads. In these instances, gesture indicates that speakers are at the intrapsychological level of *inner speech* before verbalizing their thinking.

In a similar vein, McCafferty (2004) explored how gesture functions for SLA and found that L2 gesture is associated deeply with social and cognitive aspects of ESL students. At the cognitive level, L2 speakers activated the internalization of L2 prosody in accordance with L2 syllabic rhythms of beat gestures. Similarly, deictic gestures provided spatio-motoric information for L2 speakers and functioned as meditational tools to activate the mapping of the spatio-motoric channel. For instance, a Chinese learner of English utilized deictics for mental mapping by assigning a gestural space to each neighboring country (i.e., China, Korea, and Japan). This mapping system contributed to organizing the speaker's mental maps and transforming them into verbal expressions.

McCafferty proposed that these intrapersonally-oriented gestures cannot be separated from the interpersonal function. For example, a speaker's iconic gesture to depict the Japanese garment originally involved the communicative purpose for eliciting lexical help from the recipient, who provided the correct lexical term *kimono* with an iconic to represent the garment in the next turn. However, when in the subsequent turn, the speaker exactly imitated the recipient's gesture with the verbal repetition of the word *kimono*, the iconic "re-emerged as a form of mediation in connection to learning the new language" (McCafferty, 2004, p. 162). This imitation also appears as a "transformational process (internalization)" in the other study of McCafferty (2002): "that is, enactment of the social or interpersonal plane leads to development on the psychological or intrapersonal plane" (p. 199). Likewise, these gestures initially play an interpersonal role for effective communication, but eventually play mediatonal tools for L2 speakers' cognition.

Most recently, McCafferty (2006) narrowed down his research focus to beat gestures and examined more specifically how these gestures of ESL speakers function when L2 learners talk in their target language. In this regard, McCafferty found that beats serve to regulate speaker's cognition as a physical tool by physcializing L2prosody, and this finding aligns with the Gal'perin's notion of *materialization,* grounded in the Vygotskyan theoretical framework: Physicalization is essential for internalizing meditational objects, which leads to human cognitive developments. Beat gestures visually function as a physical material to promote internal mental processing, which is directly linked to gaining self-regulation. In other sense, McCafferty maintained that these beat gestures, at the same time, are utilized for communicative purposes with interlocutors. Thus, beats function for visualizing/internalizing L2 prosody and activating L2 production.

As described above, within the framework of Vygotsky's SCT, McCafferty pioneered to explore how L2 gesture, like speech, plays a manipulatory role in promoting thinking and speaking processes. Although the primary focus is on the intrapersonal role, he did not ignore the interpersonal perspective because human cognition is eventually transformed from the interpersonal to intrapersonal level. However, there has been little gesture research in SLA to examine the

mediational role of L2 gesture because this perspective is still at the starting stage. Hence, this function needs to be explored further in the future.

④ Contributions and Limitations of Intrapersonally-oriented L2 Gesture

For the last several decades, the intrapersonal perspective has produced more vigorous and numerous gesture research and has provided multiple/balanced theoretical lenses. A small number of gesture scholars severely criticized the interpersonal perspective, but a substantial number of researchers do not deny the interpersonal viewpoint. For example, Krauss et al., (2000) strongly argued that it is hard to say that gesture is used for enhancing effective communication due to lack of studies to show if speakers' gestural meaning is correctly conveyed to listeners. However, a majority of gesture scholars (e.g., Alibali, Heath, & Myers, 2001; Goldin-Meadow, 1999; McNeill, 1992, etc.) do not deny the communicative function of gesture, but put the primary focus on the intrapersonal function. Under this view, gesture studies have had a huge impact on the gesture community by illuminating how gesture is interconnected with speakers' speech and thought.

Also, in the field of SLA, more recently, some L2 gesture researchers have explored how L2 gesture is intertwined with thought and speech, within the framework of Vygotsky's SCT. This new L2 gesture research trend contributed to broadening the limited focus of interpersonally-oriented studies to the intrapersonal scope. This intrapersonal camp has attempted to fully provide the answers for the questions arising from L2 gesture, not only from the interpersonal viewpoint but also from the intrapersonal perspective.

Nonetheless, there are not enough studies regarding the benefit of gesture to the L2 speakers and their TFS patterns. Just only a few descriptive studies of McCafferty recently demonstrated that L2 gesture serves for mediational tools for L2 cognition, but this attempt is at the starting point without further supporting evidence from other L2 researchers. For this reason, it is likely to need further examination to fully clarify how L2 gesture facilitates L2 speech and thought. In addition, there is little consensus on L2 speakers' patterns of TFS. That is, some researchers (e.g., Neguerela et al., 2004) argued that L2 speakers maintained their own L1 TFS patterns, but others (e.g., Stam, 2006) found that some advanced L2

learners are slightly shifting to L2 TFS patterns. However, Kellerman and van Hoof's (2003) finding reveals that L2 learners' TFS patterns are too varied to be generalized as one or two type(s).

Likewise, by not denying the interpersonal function of L2 gesture for communicative purposes, the intrapersonal side has provided more balanced and productive theoretical lenses for exploring the relationship between gesture and SLA. However, just only a few studies have been done, and hence, there still remain a lot of tasks that have not been explored and solved yet.

III. SUMMARY AND SUGGESTIONS

As described in this paper, gesture has an inseparable relationship with SLA in social and cognitive realms. First, this study delineated the two main perspectives on L2 gesture, contrasted the contributions and limitations, and provided more balanced theoretical lenses. It is true that we have developed diverse perspectives, but little L2 gesture research has been done to synthesize shared theoretical approaches with a big-picture view. However, this paper summarized these diverse perspectives into two main categories. On one hand, the interpersonal perspective contributed to illuminating how L2 gesture has been used for effective communication but has been criticized by a number of L2 researchers mainly due to imbalanced/ limited viewpoints. On the other hand, in a broader sense, by expanding these limited viewpoints, the intrapersonal perspective has developed more balanced viewpoints by demonstrating how L2 gesture is interconnected with the social and cognitive aspects of SLA. Although the primary focus is on the intrapersonal role, this perspective also considers the interpersonal perspective within the Vygotskyan theoretical framework, whereby interpersonal and intrapersonal functions are "present at once" and thus, they are not "dualistic" (McCafferty, 2004, p. 162). Likewise, this study supports McNeill's (2005) claim that the dichotomous distinction of the inter- and intra-personal functions seems to be false. In this vein, this study leads L2 scholars to get well-designed theoretical lenses, to be aware of the fact that a skewed perspective results in problematic undertakings and to re-conceptualize their distorted viewpoints.

Second, although the intrapersonal perspective has developed a more balanced viewpoint, neither of the two perspectives has sufficiently examined how gesture functions in SLA. In fact, the amount of research is merely the tip of the iceberg. Hence, the function of L2 gesture for SLA is still controversial. In this sense, the most urgent task is to clarify how L2 gesture interacts with SLA through further studies as Gullberg (2006a) pointed out. Therefore, in consideration of the contributions and limitations of each perspective on L2 gesture, in this section, I propose five theoretical/methodological suggestions for further studies: The first to the fourth suggestion is related to theoretical issues, but the last one is a methodological suggestion.

First, it is necessary that interpersonally-oriented gesture studies, especially situated in the *CS* framework, recognize their own skewed perspectives, such as the dichotomy of NSs and NNSs and gestural *CSs* only for overcoming linguistic deficiencies. One of the alternative viewpoints is that cognition is socially negotiated/distributed between speakers and listeners, not flowing from NSs'to NNSs' brains. As a result, gesture scholars need to acknowledge that gesture functions in promoting mutual understanding through negotiation among interlocutors regardless of NSs or NNSs status. Also, they need to expand their limited view into the intrapersonal perspective, considering Valsiner's (2001) claim, cited by Negueruela et al. (2004), that "every world [sic] a person utters for others (*hetero*regulation) is simultaneously an act of regulation of oneself (*auto*regulation)" (p. 87).

My second argument is that L2 gesture facilitates listeners' comprehension and speakers' speaking/thinking process. With regard to benefits for listeners, however, these gestural effects are still controversial among gesture scholars. For example, whereas some researchers (e.g., Kelly & Church, 1997) maintained that gesture provides considerable information for listeners, other scholars (e.g., Krauss et al., 2000) strongly claimed that there is not enough evidence to prove that gesture benefits listeners. In the case of the relationship between gesture and speaking/thinking, some gesture scholars (e.g., Rauscher et al., 1996) explored the relationship between non-gesture and speaking to manifest how gesture influences speaking. Their finding that non-gesture results in slow-rate and disfluent speaking was good enough to show that gesture facilitates speaking. However, L2 gesture

scholars have not sufficiently explored how L2 gesture affects speaking/thinking. Therefore, it is necessary for L2 gesture scholars to more specifically explore how L2 recipients attend to speakers' gesture, how L2 gesture benefits listeners, and how L2 gesture influences thought and speech.

Third, I suggest that L2 gesture scholars need to more investigate the developmental patterns of L2 gesture. In this regard, Gullberg (1998) stressed that it is not clear how L2 proficiency influences L2 gestural patterns because in most studies, "the relevant proficiency is seldom indicated" (p. 78). Moreover, the presented results were varied depending on researchers. For instance, Gullberg (1998) asserted that two studies showed different results: While in Taranger and Coupier's (1984) study, L2 learners follow L1 gestural developmental patterns, such as fewer beats and more representational gestures at the beginning stage of L2 learning, Gullberg shows that representational gestures are the least used by beginners. Also, L2 learners' TFS patterns are not consistent with their proficiency level: Negueruela et al. (2004) found that L2 proficiency does not affect L2 speakers' TFS, but other researchers (Stam, 2001, 2006; Kellerman & van Hoof, 2003) argued that L2 proficiency is slightly related to their TFS patterns. Due to these inconsistent findings, we do not know clearly yet how L2 gesture is related to L2 proficiency. Accordingly, L2 gesture scholars need to conduct (longitudinal) studies to investigate how L2 gesture develops as L2 proficiency increases.

Fourth, studies on L2 gesture have demonstrated that gesture plays an important role in L2 speakers' cognition in the face-to-face interaction. However, only a few studies have examined how instructors' gestures affect L2 students' learning in the L2 instructional settings. In other fields, a number of researchers (e.g., Alibali & Nathan, in press; Cook & Goldin-Meadow, 2006, etc.) found that teachers' gesture serves as scaffolding for students' mathematical conceptualization and eventually leads to their learning. In contrast, just a few studies (e.g., Lazaraton, 2004; McCafferty, 2002; Sime, 2006) have been done in SLA and there is a substantial amount of unknown knowledge related to L2 gesture and learning. Also, it is still unknown whether instruction of L2 gesture could change L1 TFS of L2 speakers into L2 TFS patterns. Hence, more investigation is required to deeply examine the role of gesture in the instructional settings: e.g.,

whether or not teachers' gesture has an effect on L2 learning, if so whether gesture is teachable or learnable, how learners perceive teachers' gesture, etc. Also, pedagogical implications need to be systematically constructed for L2 educators.

Finally, with respect to the methodological issue, a majority of gesture studies did not report methodological tools to describe/transcribe gestural behaviors of L2 learners. As Belhiah (2005) pointed out, this methodological issue is not fully developed yet although the Conversation Analysis as an analytic tool for social interactions (e.g., Markee, 2000; Seedhouse, 2004) has been introduced to SLA. To point out this problem, Lazaraton (2004) claimed that "there has been so little empirical work done on gesture in applied linguistics that there is really no 'standard'available for transcription, and each researcher is left to herself to develop or employ a system that suits her purpose" (p. 93). This lack of clear coding schemes might negatively affect reliability and validity, and might result in inconsistent findings. Therefore, we need to clarify a systematic analytic way and to increase emic (i.e., a participant's perspective) sensitivity.

As a result, many research areas on L2 gesture are to be explored more in the future. Reflecting on the strengths and weaknesses of the existing L2 gesture study, I suggest five guidelines for further studies. Through them, we can gain more balanced perspectives. Also, we can learn how to refrain ourselves from running our thought into a distorted way, and eventually, more fruitful studies on L2 gesture will be generated in the future. As Gullberg (2006a) pointed out, we examine L2 gesture "because gestures are everywhere and affect all human interactions" (p. 116). Without considering gesture, we can see only a surface level of the L2 acquisition process that verbal expressions alone reveal. This means that we can never reach a real understanding of how L2 learners use or acquire a new language. In short, without gesturing, L2 learners are not able to think and speak fluently in their L2.

REFERENCES

Alibali, M. W., Heath, D. C., & Myers, H. J. (2001). Effects of visibility between speakers and listeners on gesture production: Some gestures are meant to be seen. *Journal of Memory & Language*, *44,* 169-188.

Alibali, M. W., Kita, S., & Young, A. J. (2000). Gestures and the process of speech production: We think, therefore we gesture. *Language and Cognitive Processes, 15*(6), 593-613.

Alibali, M. W., & Nathan, M. J. (in press). Teachers' gestures as a means of scaffolding students' understanding: Evidence from an early algebra lesson. In R. Goldman, R. Pea, B. Barron, & S. J. Derry (Eds.), *Video Research in the Learning Sciences* (pp. 349-365). Mahwah, NJ: Erlbaum.

Belhiah, H. (2005). *The partnership between vocal and nonvocal aspects of language in ESL tutorials: A conversation analytical approach*. Unpublished doctoral dissertation. University of Wisconsin, Madison.

Cook, S. W., & Goldin-Meadwo, S. (2006). The role of gesture in learning: Do children use their hands to change their minds*? Journal of Cognition and Development, 7*, 211-232.

Chen, S.-Q. (1990). A study of communication strategies in interlanguage production by Chinese EFL learners. *Language Learning, 40*(2), 155-187.

Choi, S., & Lantolf, J. P. (2008). Representation and embodiment of meaning in L2 communication: Motion events in the speech and gesture of advanced L2 Korean and L2 English speakers. *Studies in Second Language Acquisition, 30*, 191-224.

Faerch, C., & Kasper, G. (1983). *Strategies in interlanguage communication*. New York: Longman.

Firth, A., & Wagner, J. (1997). On discourse, communication, and (some) fundamental concepts in SLA research. *The Modern Language Journal, 81*(3), 285-300.

Goldin-Meadow, S. (1999). The role of gestures in communication and thinking, *Trends in Cognitive Sciences, 3*(11), 419- 429.

Gullberg, M. (1998). *Gestures as a communication strategy in second language discourse: A study of learners of French and Swedish*. Lund: Lund University Press.

Gullberg, M. (2006a). Some reasons for studying gesture and second language acquisition (hommage à Adam Kendon). *International Review of Applied Linguistics, 44*(2), 103-124.

Gullberg, M. (2006b). Handling discourse: Gestures, reference tracking, and communication strategies in early L2. *Language Learning, 56*(1), 155-196.

Kellerman, E., & van Hoof, V. (2003). Manual accents. *International Review of Applied Linguistics, 41*(3), 251-269.

Kelly, S. D., & Church, R. B. (1997). Children's ability to detect nonverbal behaviors from other children. *Cognition and Instruction, 15*(1), 107-134.

Kendon, A. (2000). Language and gestures: Unity or duality? In D. McNeill (Ed.), *Language and gestures* (pp. 47-63). UK: Cambridge University Press.

Kendon, A. (2004). *Gestures: Visible action as utterance*. Cambridge UK: Cambridge University Press.

Kita, S. (2000). How representational gestures help speaking. In D. McNeill (Ed.), *Language and gestures* (pp. 162-185). UK: Cambridge University Press.

Krauss, R. M., Chen, Y., & Gottesman, R. F. (2000). Lexical gestures and lexical acess: A process model. In D. McNeill (Ed.), *Language and gestures* (pp. 261-283). UK: Cambridge University Press.

Lazaraton, A. (2004). Gestures and speech in the vocabulary explanations of one ESL teacher: A microanalytic inquiry. *Language Learning, 54*(1), 79-117.

Markee, N. P. (2000). *Conversation Analysis*. Mahwah, NJ: Lawrence Erlbaum.

McCafferty, S. G. (1998). Nonverbal expression and second language private speech. *Applied Linguistics, 19*(1), 73-96.

McCafferty, S. G. (2002). Gestures and creating zones of proximal development for second language learning. *The Modern Language Journal, 86*(2), 192-203.

McCafferty, S. G. (2004). Space for cognition: Gestures and second language learning. *International Journal of Applied Linguistics, 14*(1), 148-165.

McCafferty, S. G. (2006). Gestures and the materialization of second language prosody. *International Review of Applied Linguistics in Language Teaching*, *44*(2), 197-209.

McCafferty, S. G., & Ahmed, M. (2000). The appropriation of gestures of the abstract by second language learners. In J. P. Lantolf (Ed.), *Sociocultural theory and second language learning* (pp. 199-218). New York: Oxford University Press.

McNeill, D. (1992). *Hand and mind: What gestures reveal about thought*. Chicago: Chicago University Press.

McNeil, D. (2005). *Gesture and thought*. Chicago: University of Chicago Press.

McNeill, D., & Duncan, S. D. (2000). Growth points in thinking-for-speaking. In D. McNeill (Ed.), *Language and gestures* (pp. 141-161). Cambridge, UK: Cambridge University Press.

Melinger, A., & Levelt, J. M. (2004). Gestures and the communicative intention of the speaker. *Gestures, 4*(2), 119-141.

Negueruela, E., Lantolf, J. P., Jordan, S. R., & Gelabert, J. (2004). The "private function" of gestures in second language speaking activity: A study of motion verbs and gesturing in English and Spanish. *International Journal of Applied Linguistics, 14*(1), 113-147.

Ortega, L. (2005). Methodology, epistemology, and ethics in instructed SLA research: An introduction. *The Modern Language Journal, 89*(3), 317-327.

Özyürek, A. (2000). The influence of addressee location on spatial language and representational gestures of direction. In D. McNeill (Ed.), *Language and gestures* (pp. 64-83). Cambridge, UK: Cambridge University Press.

Özyürek, A. (2002). Do speakers design their co-speech gestures for their addressees? The effects of addressee location on representational gestures. *Journal of Memory and Language, 46*, 688-704.

Rauscher, F. H., Krauss, R. M., & Chen, Y. (1996). Gestures, speech, and lexical access: The role of lexical movements in speech production. *Psychological Science, 7*, 226-231.

Seedhouse, P. (2004). *The interactional architecture of the language classroom: A conversation analysis perspective*. Oxford: Blackwell.

Sime, D. (2006) What do learners make of teachers' gestures in the language classroom? *International Review of Applied Linguistics in Language Teaching*, *44*(2), 211-230.

Slobin, D. I. (1996). From "thought and language" to "thinking for speaking". In J. J. Gumperz, & S. C. Levinson (Eds.), *Rethinking linguistic relativity* (pp. 70-96). Cambridge: Cambridge University Press.

Stam, G. (2001). Lexical failure and gesture in second language development. In C. Cavé, I. Guaïtella, & S. Santi (Eds.), *Oralité at gestualité: Interactions et comportements multimodaux dans la communication* (pp. 271-275). Paris: L'Harmattan.

Stam, G. (2006). Thinking for speaking about motion: L1 and L2 speech and gestures. *International Review of Applied Linguistics in Language Teaching*, *44*(2), 145-171.

Talmy, L. (1985). Lexicalization patterns: Semantic structure in lexical forms. In T. Shoepen (Ed.), *Language typology and lexical description: Grammatical categories and the lexicon* (pp. 36-149). Cambridge: Cambridge University Press.

Taranger, M. –C., & Coupier, C. (1984). Recherche sur l'acquisition des langues secondes: Approche du gestuel. In A. Giacomi, & D. Véronique (Eds.), *Acquisition d'une langue étrangère. Perspectives et recherches* (tom. 1). (pp. 167-183) Aix-en-Provence, FR: Publications de l'Université de Provence.

Valsiner, J. (2001). Process structure of semiotic mediation in human development. *Human Development, 44*, 84-97.

Vygotsky, L. S. (1978). *Mind in society*. Cambridge, MA: Harvard University Press.

Vygotsky, L. S. (1986). *Thought and language*. Cambridge, MA: MIT Press.

Suyeon Kim
Second Language Acquisition
University of Wisconsin-Madison
222 Randolph Dr. 203A
Madison, WI, 53717, U.S.A
E-mail: kim14@wisc.edu

Received 25 September 2009
Reviewed 2 November 2009
Revised version received 7 December 2009