

## Speech in Cognition and Second Language Acquisition\*

Lee, Jina  
(Sangmyung University)

Lee, Jina. Speech in Cognition and Second Language Acquisition. *The New Studies of English Language & Literature* 69 (2018): 185-206. This article provides an exploration of the theories and studies of speech in communication and cognition in language learning. In Vygotskian perspectives of sociocultural theory, language is seen as a continuum of social speech (overt talk-in-interaction with others), private speech (talking to the self) and inner speech (covert speech for cognition) in relation to internalization. Embracing this aspect, this paper discusses core notions of sociocultural theory in language learning and then reviews recent SLA studies in private and inner speech, types and functions of the speech, relevance of L2 reading and private speech, and gesticulation. (Sangmyung University)

**Key words:** second language acquisition, intrapsychological speech, private speech, inner speech

### I. Opening Remarks

Recently, Vygotskian sociocultural theory has shown great progress in both first language(L1) and second language(L2) learning studies. Vygotsky saw language as the mediational tool of cognition. In Vygotsky's semiotic oriented account of psychological tools, he stated that "the following can serve as examples of psychological tools and their complex systems: language or speech; various systems for counting; mnemonic techniques; algebraic symbol systems; works of art; writing; schemes, diagrams, maps, and mechanical drawings; all sorts of conventional signs; and so on" (Vygotsky, 1981: 137).

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Vygotskian sociocultural approach, therefore, claims that all cognitive functions originates in social life and history, and that an essential key to understanding human psychological processes is the analysis of language or speech. The mental processes ‘within’ us – intrapersonal – are similar to the transactions we conduct ‘between’ us – interpersonal.

This thoughts about social and cognitive stream of language or speech brought me to have a closer look at developmental path of second language learning (SLA) as well as the speech forms that accompany; i.e., social speech, private speech, and inner speech. This article therefore reviews studies of speech from communication (social speech) to cognition (private/inner speech) in terms of Vygotskian influence on SLA studies.

## **II. Communication to Cognition**

### **2.1 Speech in Sociocultural Theory**

Sociocultural theory developed by Vygotsky and Vygotskians refers to several related traditions in psychology and education research to analyze human behavior in a social and cultural context. Vygotsky saw higher mental activity as the way in which people dynamically structure and realize higher mental functions such as voluntary attention, voluntary memory, intention, planning and the resulting physical behavior (Roebuck, 1995). The higher mental functions then have been seen in terms of regulation which is mediated by language. As Vygotsky (1986) argued, it is precisely in the context of self-regulation that thinking and speech converge.

Along with higher mental activity, the notion of speech or language and its dialogic aspect has great significance in sociocultural theory. Bakhtin’s notion of ‘dialogicity’ stresses both the mutual role of speaker

and hearer in the construction of utterances and the connectedness of human speech communication, not only in present interactions but also in past and future discourses. 'Utterance' is dialogic as an actual dialogue between interlocutors, and as inner dialogue among the voices in our heads. An intense interaction and struggle between one's own and another's word takes place in the utterance, a process in which they oppose or dialogically interanimate each other.

Vygotsky (1978) also emphasized on the social construction of learning. He claimed that children's mental process are constructed through relationships with others (often adults) and provides a basis for his interest in the social formation of individuals.

## **2.2 Social Speech and Talk-in-Interaction**

In general, social speech is external speech of interpersonal talk-in-interaction. In the widest sense of the word, "social", it means everything that is cultural. Culture is the product of social life and human social activity learned through interaction. That is why any investigation of the cultural development of behavior directly introduces the social plane of development (Vygotsky, 1981: 164). Social speech, therefore, is an important tool in terms of the process of cultural conveyance.

Vygotsky's position on the social aspects of signs can be seen in his comparison of the social and individual functions of speech. Vygotsky's distinction between the social and individual functions of speech is respectively a distinction between mediational means for interpsychological and intrapsychological functions. He considered this as the connection between notions of the communicative and the intellectual. From this discussion, the main difference is a shift from a general distinction between the social and individual use of language to the nature of the

semiotic process on the interpsychological and intrapsychological planes. Vygotsky made an essential point about this connection as follows:

The initial function of speech is the communicative function. Speech is first and foremost a means of social interaction, a means of pronouncement and understanding. This function of speech which is usually analyzed in terms of isolated units has been separated from the intellectual function of speech. Both functions are ascribed to speech as if they were, combined within itself both the function of social interaction and the function of thinking, but what the relationship is between these two functions, what brings about the presence of the two functions of speech, how they develop, and how they are structurally intertwined are questions that have remained uninvestigated. (Vygotsky, 1987: 63)

As seen above, communication plays an important role in Vygotsky's theory, and could involve the theory further through a wide range of investigations in human communication to the social processes involved in face-to-face talk. In continuum of social speech, psychological processes of speech—mainly concerned as intrapsychological processes—are a major focus and encompass perception, attention, memory, cognition, education, activity, language, internalization, and their countless interrelationships.

### 2.3 Internalization and Language Learning

With the previous argumentation about *speech* and *thought*, Vygotsky discussed the notion of zone of proximal development (ZPD). In his discussion of ZPD and internalization, Vygotsky (1978) proposed that higher psychological processes carried out by an individual are direct reflections of social processes in which the individual participated at an earlier stage of ontogenesis. Higher mental cognition is first carried out

on the interpsychological plane—interaction with others (social speech), and only later on the intrapsychological plane—dialogue with the self. The central concerns here are the social processes used by one party to control another in social interaction, and how these regulative processes are taken over by the individual child, allowing him/her to function as an independent cognitive agent. This process can be achieved through *internalization*. Vygotsky viewed internalization as a process whereby certain aspects of patterns of activity that had been performed on an external plane come to be executed on an internal plane (Wertsch, 1979).

Lantolf (2000) described Vygotsky's notion of internalization as reconstruction on the inner, psychological plane of socially mediated external forms in L2 learning. The process of internalization constructs a series of transformations: (1) an operation that initially represents an external activity is reconstructed and begins to occur internally, (2) an interpersonal process is transformed into an intrapersonal one—first, between people (interpsychological), and then inside the child (intrapsychological), (3) the transformation of an interpersonal process into a intrapersonal one is the result of a long series of developmental events. Thus, the process being transformed continues to exist and to change as an external form of activity for a long time before definitively turning inward. Wertsch (1985) summarized Vygotsky's accounts of internalization as: "(1) internalization is not a process of copying the external plane of reality; rather, it is a process wherein an internal plane of consciousness is formed, (2) the external reality at issue is a social interactional one, (3) the specific mechanism at issue is the mastery of external sign forms, and (4) the internal plane of consciousness takes on a "quasi-social" nature because of its origins." (pp. 66-67)

As a part of the process of internalization, intrapsychological planning is often externally vocalized in the forms of *private speech* (overtly produced), which is achieved through social interaction and evolves into

*inner speech* (completely mental) (Alderson-Day & Fernyhough, 2015; Centeno-Cortés, 2003). Private speech is defined in terms of its 'self-regulating function'. Self-regulation in private speech is through dialogue first with others—social origins—and then with the self, as Vygotsky and Wertsch indicated. As will be discussed in the next section, even though the conceptions of internalization, language use as a mediational tool (like, private speech), and other relevant notions by Vygotsky have focused on child development, many studies adapted Vygotskian perspective in adult L2 learning situation.

For example, in L2 classroom, Swain (2000) indicated the mediational functions of language, particularly collaborative interaction among peers and between teacher and students enters into the series of the process of internalization and the metaphoric notion of ZPD. Their collaborative dialogue is shown to be a key form of mediation. According to Swain, collaborative dialogue is “knowledge-building” dialogue, and for L2 learners it is dialogue that constructs L2 linguistic knowledge. During collaborative dialogue, speakers are engaged in problem solving, and consequently knowledge building. Therefore in L2 classrooms, psychological processes emerge first in collective behaviour in co-operation with peers and/or a teacher, and become internalized. This process is mediated by semiotic tools, and language(written or spoken) is one of the most important semiotic tools. Along with the above example, the use of private speech among adult—the externalization of cognitive processes—is not uncommon in adults as a tool (John-Steiner, 1992). Centeno-Cortés (2003) studied the use of adult private speech in the second language classroom and asserted its role in internalization and its link to social production (in social speech form). In terms of cognitive development, Rubin (1979) reviewed the developmental hierarchy in relation to regulatory functions of speech. In Rubin (1979), 'inward-directed speech' refers to the self-addressed and 'outward-directed

speech' refers to others than the self. This coexistence of inward and outward-addressed forms in private speech seems to highlight its dialogic aspects with social speech.

## 2.4 Private Speech, Inner Speech, and Cognition

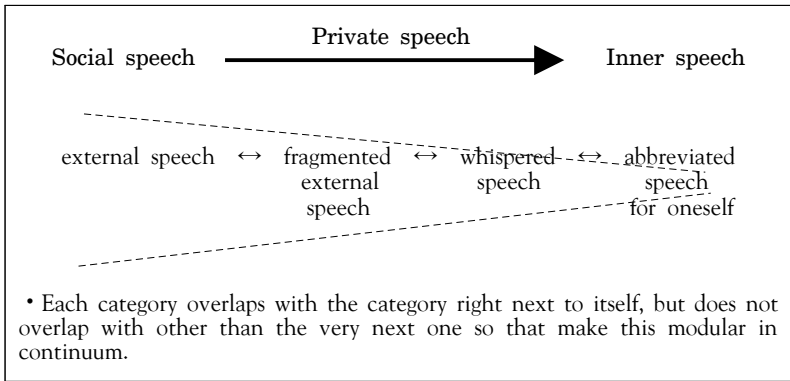
Private speech is different from social speech in that private speech is not intended by the other conversant to be communicative and is addressed to the self and not to others. Private speech is also not same as inner speech in that private speech is overtly vocalized utterance, while inner speech—the silent verbal thought—is only covertly produced inside one's head (Sokolov, 1972; Zivin, 1992).

Therefore, private speech is defined as external vocalization not for communicative interaction with others, but for dialogue with the self, which was originally called 'egocentric speech.' Frawley and Lantolf (1985, 1986) adopted the framework of self-regulation provided by Wertsch and applied the self-regulatory function to private speech taking self-directed dialogic forms, as in "Where? On what? and tell this? OK. But I don't know how. Oh! OK. Now I know" (Frawley and Lantolf, 1985: 28).

Vygotsky saw that the origin of private speech is social, and pointed out the resemblance between social speech and private speech in terms of Bakhtin's conception of "dialogicity" (Bakhtin, 1978), i.e., private speech as a dialogue with the self. In Vygotsky's model, linguistically mediated social exchanges are transformed into an internalized "conversation" with the self via a mechanism of internalization.

Putting private speech as a mediational tool, learners regulate their own thinking by establishing meanings to the self, memorizing, monitoring and planning their own activity, and expressing feelings that are related to the process of higher mental development. According to

Vygotsky, vocalized private speech will turn inwards and become inner speech (non-vocalized verbal thought), as shown in [Figure 1]. In this process internalization occurs. Inner speech is often referred to as verbal thinking, inner speaking, covert self-talk, and internal dialogue. Inner speech is, therefore, defined as ‘the act of *silently* talking to ourselves.’ With respect to the development of inner speech, the physical transformation of private speech provides empirically observable clues as to the nature of inner speech. Along with private speech, inner speech has also been proposed to have an important role in the self-regulation of cognition and behavior in both childhood and adulthood in self-regulation (Diaz & Berk, 1992; Fernyhough, 1996; Vygotsky, 1987).



[Figure 1] The dynamic process of inner speech development and the interrelationship among social, private, and inner speech (adopted from Ohta, 2001)

Little (2010) asserted that inner speech takes many different forms, from fragmentary to fully uttered. People use it for many different purposes: to access and shape memories, to plan utterances, to guide oneself through complex tasks, to regulate one’s behavior, and to solve problems (Little, 2010). As stated earlier, Vygotsky (1987) first insisted



that all our thinking is done through language and all the thought processes and ideas involves language use. Thereby, language acts as a mechanism for the acquisition of knowledge, not simply as a vehicle of communication with others. Sometimes we voice our thoughts to internalize through private speech and inner speech. The process of internalization or cognition involves the abbreviation of the syntax of internalized language; that is, it results in inner speech having a “note-form” quality compared with social speech.

Vygotsky (1987) also made the distinction between two opposing concepts of thought and word as expressed by *meaning* and *sense*, emphasizing that it is sense which is expressed by inner speech, while meaning is expressed by external speech. Despite its apparent importance for human cognition; inner speech has received relatively little attention from psychologists and linguists, partly due to methodological problems involved in its study. Many studies on inner speech have methodical use of diary or self-questionnaire that considered to has some problems.

### III. Intrapersonal Speech in SLA Studies

As noted in the previous sections, Vygotsky’s theory has been applied by many SLA scholars in that many aspects of language learning are related to both interactional and psychological. Vygotsky’s central idea on human development involves the process or internalization. The process of internalization is described by Vygotsky (1978) as an “... internal reconstruction of an external operation” (p. 56). Therefore, in the following sections, Vygotskian influence on SLA research is introduced beginning with the review of studies of intrapersonal speech – private speech as well as inner speech.

### 3.1 Private Speech and Inner Speech in L2 Learning

Private and inner speech phenomena give the evidence of language processing in language acquisition and any cognitive occasions. Vygotskian consideration of language then also provides a theoretical rationale for researching bilinguals' L1 and L2 private speech as a mechanism for cognitive process (Reynolds, 1991) as well as way of understanding code-switching phenomena in bilinguals' private speech (Stone-Kang, 2002). In terms of L2 learning, when L2 users confront difficulties in performing a task in their L2, they often try to overcome their difficulties through strategic behaviors that help them to guide and monitor their activities and actions in the task. If those efforts take the form of verbal expressions, these verbal expressions often take in form of private speech. Often the function of private speech has been described as self-regulatory in Vygotskian perspective.

As noted above, private speech and inner speech is utilized by L2 learners in addition to L1 learners. A study in its dimensions has beneficiary for SLA studies, because private speech is claimed to be a universal strategy for L1 learners. McCafferty (1998) stated that it seems to function in foreign language (FL) processing similarly to L1 language processing, which can be observed for instance in communicative tasks. As Frawley and Lantolf (1985, 1986) mentioned, private speech has been observed among L2 learners (Centeno-Cortés, 2003; Centeno-Cortés and Jiménez Jiménez, 2004; de Guerrero 2004; Lee, 2006, 2008; McCafferty, 1992, 1994, 1998, 2008; Ohta, 2001), as a tool that adults make use of in cognitively demanding situations (Fry, 1992; John-Steiner, 1992). Lantolf (2006) asserted that private speech is responsible for both regulating mental ability and facilitating internalization of mental ability in language learning.

According to McCafferty (2004), the study of private speech in L2

learning has encompassed a number of other dimensions including: cross-cultural differences in the use of private speech, an exploration of the degree to which internalization of a second language can occur, the importance of applying L1 forms of private speech in collaborative problem-solving activities, the forms and functions of private speech and private writing, and the gestures accompanying private speech.

### **3.2 Types and Functions**

Various types of private speech have been noticed by many researchers (Antón and DiCamilla, 1998; Berk and Garvin, 1984; de Guerrero, 2004; Kim, 2003; Kohlberg et al., 1968; Lee, 2006, 2008; McCafferty, 1998, 2008; Ohta, 2001; Stone-Kang, 2002), as briefly discussed earlier. Berk and Garvin (1984) reviewed the categories of private speech and inner speech. They discussed previous studies and redefined the categories as follows: (1) describing one's own activities and self-guiding comments due to the difficulties of the tasks, (2) affecting expression and fantasy play, as subclasses of the behaviors in (1). In addition to these, other common types of private speech include repetition and monologue during in class. Lee (2007) and Ohta (2001) also noted private speech in classrooms as: (1) repetition or self-search of words, phrases and sentences; (2) manipulation of L2 grammar; and (3) responses such as repair, collaborative completion, answers to a question that was addressed to another student.

Often the function of private speech has been described as self-regulatory by L2 researchers taking a Vygotskian perspective. In this way, private speech as well as inner speech provides a window into the learner's thought processes. Lantolf and Thorne (2006) asserted that language-focused private speech provides researchers with a glimpse of the learning process as it unfolds in real time. Frawley and Lantolf (1985)

and others suggest monitoring function as well as self-regulation function. That is, inner/private speech performs in L2 use seem to be fundamental on intentional language processing, that is mostly expressed in learner's rehearsal before performing it. This points to the similarity of private speech in L1 children and L2 adults. In L2 adults, it is observed that intrapersonal or intrapsychological speech performs the role of an instrument in gaining control over one's performance(self-direction).

As one of the major studies investigating inner speech in L2 contexts, de Guerrero (2004) shows a longitudinal research of the development of L2 inner speech. The study was conducted by means of the learner diaries. He concluded that "the capacity for inner speech develops in L2: first as an instrument of 'shadowing', next as an instrument of recalling, then as a support for speaking and writing, and finally as a medium of discursive thinking.

### 3.3 Self-regulatory Function

Self-regulation is one of the main functions of private and inner speech. It refers to control over the self. Vygotsky proposed that all developmental functions such as regulation arise first on the social or interpsychological plane, and then on the individual or intrapsychological plane. The social and dialogic origin of the self-regulation process has been amply developed by Wertsch and his colleagues. Wertsch (1979) suggested that child cognitive development is guided by the physical environment that attracts a child's attention. This process is termed *object-regulation* and is found in the early use of private speech during problem solving tasks because it is more concerned with describing and naming certain objects, actions, and the environment before planning. Prior to self-regulatory private speech, the child is affected by adults or other experts through social speech, which Wertsch termed *other-regulation*. At this level, the child

is responsive and depends on other people. Then, the child gradually becomes independent in problem-solving and be able to internalize thinking skills to resolve difficulties. This highest independent developmental level is termed the *self-regulation* stage. At this level of self-regulation, the child is now able to guide, plan, and monitor his/her own mental activity.

Applying these concepts to adult L2 learning situations, *self-regulation* can be seen when a skilled individual is capable of autonomous functioning. However, an unskilled individual learns by carrying out tasks and activities under the guidance of other more skilled individuals, initially through a process of other-regulation with help from a teacher, or other experts, which is typically mediated through language (DiCamilla & Antón, 2004; Frawley & Lantolf, 1985; Lantolf, DiCamilla & Ahmed, 1997; Ohta, 1998, 2001). Then, the unskilled individual begins to regulate him/herself at a certain stage. At this self-regulation stage, private speech often aids him/her to guide the self in order to achieve a certain activity. Therefore, here, private speech is used as external vocalization not for communicative interaction with others, but for dialogue with the self.

Frawley and Lantolf (1985, 1986) adopted the framework of self-regulation provided by Wertsch and applied the self-regulatory function to private speech taking self-directed dialogic forms, as in “Where? On what? and tell this? OK. But I don’t know how. Oh! OK. Now I know” (Frawley and Lantolf, 1985: 28). Following Frawley and Lantolf (1985, 1986), private speech has been observed among L2 learners (Centeno-Cortés, 2003; Centeno-Cortés and Jiménez Jiménez, 2004; Lee, 2006, 2008; McCafferty, 1992, 1994, 1998; Ohta, 2001; ), as a tool that adults make use of in cognitively demanding situations.

In McCafferty (1992), thirty nine Hispanic and Asian ESL university students were asked to tell a story based on pictures examined frame by

frame. They showed all three regulatory functions in Vygotskian aspects: object-regulation, other-regulation, and self-regulation: (1) object-regulation when they imposed a schema on the story, named characters, laughed, or commented on task performance; (2) other-regulation in questions addressed to the researcher (“Should I talk about this?”); and (3) self-regulation when comments like “Oh”, showing understanding, were followed by revised thinking. According to Swain & Lapkin (2002), externalization of the inner speech of their participant that occurred during interaction with another person clarified inconsistencies in the knowledge of a participant named Sue. Sue’s private speech dialogue between her own at-the-moment hypothesis and her previous knowledge enabled her to realize that she did not understand a certain linguistic form. Anton & DiCamilla (1998) reported that use of L1 helped adult English speakers’ self-regulation in learning Spanish. Subvocalized private speech in L1 took the form of self-answered questions to externalize options in inner speech, or of elliptical self-evaluation of participants’ own production.

### **3.4 Private Speech and L2 Reading**

The forms of private speech during L2 reading were observed: in forms of reading aloud, oral translation and interaction between code-switching and cognitive-functioning. These phenomena were also noticed in several studies (De Courcy, 1995; Lee, 2006; Roberts, 1979 and Stone-Kang, 2002).

Many studies discussed that the degrees of task difficulty affect the incidence of private speech (Behrend, Rosengren & Perlmutter, 1989, 1992; Kohlberg et al., 1968; Roberts, 1979; Vygotsky, 1987). They found the higher amount of private speech when they increased the task difficulty or when the participants had less familiarity in the task. Overt

private speech is more primitive process in a developmental sequence and emerges as the task gets harder. In this vein, reading-aloud is a type of private speech that can occur in conducting difficult tasks. In Vygotskiy's view that private speech serves a cognitive self-guidance function, the higher incidence of reading aloud occurs in more difficult tasks as an indicator of a disruption of a smooth chain of cognitive activity, and this private speech should facilitate participants' resolving difficult tasks.

Under this theoretical premise, Roberts (1979) observed children's private speech and the academic and reading-laden nature of the activity. However, his analysis of reading-aloud (a highly task-specific form of frequent and effective self-regulating speech during the studied activity) showed that the children who are more effective and successful on more difficult task read aloud more frequently. Therefore, emphasizing the relevancy between task specificity and the task-related private speech, he claimed that although the earlier discussion of reading aloud in Vygotskian perspective was introduced as a cue that facilitates problem-solving process, it is not always true. And he further pointed out that when the children faced more difficult task material, they repeated the text rather than read it aloud once. His finding does not support Vygotsky's view that private speech serves a cognitive self-guidance function. However, his consideration of task -specificity of task-related speech and the relevancy of reading-aloud to task-difficulty supported a mediational function of private speech. Oral translation was defined as one of the translation techniques, which is reading aloud to oneself: (1) translation for oneself, (2) translation with the inner voice, and (3) attention control.

In terms of the dialogic aspect of private speech, Lee (2006) reported that participants read aloud the text to the self and when they confronted difficulty in understanding the English text. Applying dialogic analogy,

the self was interacting with the text by playing the role of animator of the text (a speaker) as well as receiver of it (a listener).

In De Courcy's (1995, 2003), although she positioned in the middle of metacognitive perspective and Vygotskian perspective in language learning process—supporting the importance of input as well as internalization, she asserted the importance of a type of translation in private speech. The context of her studies was Australian French and Chinese immersion programs. She reported the students' tendency of a heavy reliance on translation of everything one hears or reads into their first language (English) as a receptive strategy when the text is hard to understand. He also found the tendency of code-switching and code-mixing and as a process of interlaization of L2, 'becoming bilingual' or 'being in another language' in his term. He, then, explained that internalized speech in the target language, both inside and outside in the immersion context, was one strategy used to make sense of the language.

Aligning with De Courcy's findings on private speech and code-switching behavior, Stone-Kang (2002) provides an implication of the interaction between code-switching and cognitive-functioning. All of these findings (De Courcy, 1995, 2003; Roberts, 1979; Stone-Kang, 2002) discussed above supported the evidence for the validity of the verbal mediational function of private speech, although there were slight different perspectives on self-regulatory functions of private speech.

### **3.5 Non-verbal Behavior and Gesticulation**

Inspired by Vygotsky's notion of private and inner speech, McCafferty (1998) and McNeill (2000) pointed out that speech and gesture are also closely related in intrapersonal speech behavior. Gesticulation is the form of non-verbal behavior or gesture accompanying with speech, including



forms of private speech (McCafferty, 1998). In studies of social speech (talk-in-interaction), various non-verbal gestures, such as nodding, eye contact, facial expressions, and various body movements, were found to help co-construct interactional discourse and to provide important communicative cues (Goodwin, 1986). Consequently, both the cognitive aspects and the communicative functions of gesticulation have newly been noted in interpersonal and intrapersonal communication in SLA.

Studies in SLA (Lee, 2008; McCafferty, 1998, 2004; etc.) found that gesture alongside with private speech has been noted as an interpersonal tool for language learning, regarding the fact that the interpersonal use of gesture is a very recent area of research in relation to second language learning.

Frawley (1997) argued that Vygotskian theory can play an important role in cognitive sciences. Taking these suggestions on board, the incorporation of Vygotskian private speech and inner speech perspectives into the L1 and L2 reading process can provide further insights into understanding L2 reading on a number of different levels and may be able to open the door for a new line of empirical investigation. McCafferty (1998) investigated the roles that gesticulation plays in L2 learners' speech. He was interested in how nonverbal forms of behavior, such as gazing, posture, and gesture, work as self-regulators in private speech. He found that both cultural and proficiency differences in the gesture with private speech are integrated with language speakers' efforts made at self-expression. According to Lee (2008), noticeable types and functions of gesticulations were observed in L2 learners' private speech. The observed types of gesticulation were nodding, beats, pointing, and other kinetic movements used to illustrate abstract concepts and processes in task of studying biology in English. Both oral production and written production—drawing and note-taking—of private speech were deployed, and the main function of gesticulation was mainly communication with

the self in the forms of self-monitoring, self-regulation, and self-teaching while drawing biological figures.

#### IV. Closing Remarks

So far we explored basic theory of language and speech in Vygotskian sociocultural theory and its application in the field of language learning. Dialogic aspect of speech and the characteristics of speech continuum – that is, originated from social speech in interaction to development of private and inner speech for internalization – was applied to the studies of the field of SLA.

By using private speech as a mediational tool, learners regulate their own thinking. They establish meanings to the self, memorize, monitor and plan their own activity. Moreover, they express feelings that are related to the process of higher mental development. The SLA studies identified the following categories: self-guiding, planning, and attention-focusing. The studies also noted mental rehearsal to aid memory, storage and retrieval of verbal data, self-teaching, correcting errors, evaluating knowledge, clarifying thought, acquiring self-confidence, reducing nervousness, organizing and experimenting with oral and written texts, and the like.

Looking at all these studies, we can find how verbal and non-verbal forms of intrapsychological speech both in L1 and L2 is utilized to help cognition, that is, a mediational tool of internalization. In addition, the SLA studies discussed contributes to the emergent research area focusing on the interactional dynamics of intrapsychological activities that is participants' private verbal activity by examining their use of private and inner speech appeared in various forms. In spite of the methodical problems, investigation of the private and inner speech is a significant contribution based on sociocultural theory to our understanding of

individual L2 learner's communication and learning process, and of young adult bilinguals' learning of literacy in an L2. In a similar vein, the issue of intrapsychological—private/inner—speech behavior in L2 classroom is considered as an important source of studying individual's learning process in more recent SLA studies.

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seajina@gmail.com

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