Transcending the Symphony:

An Analysis

of the

Cognitive and Affective Differences

That Influence

First and Second Language Acquisition

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1. Introduction

Language has traditionally been viewed by linguistics as a complex communication system involving phonology, syntax, morphology, semantics, lexis, pragmatics and discourse (Mitchell and Myles, 2001: 14). It is a system that is used to communicate and negotiate meaning. However, in order to be a participant of this system, learners both in and out of a classroom must first recognize that a word is a word (Lightbrown and Spada, 2006: 97). With this initial step learners become part of a process that will shape not only their language, but their perceptions of being as well. Theories of language acquisition have yet to clearly define the exact process by which humans acquire first or second languages, however a number of current theories are available that approach the characteristics involved from two expansive perspectives of innateness and function (Brown: 2007). To better understand the processes of language development, this paper will discuss the most salient differences that influence first language acquisition and second language acquisition within a classroom.

2. Language acquisition

Through the experience of first language development an individual not only acquires their native language, but the formation of their identity within language as well. Shaped within this first language are cultural frameworks that will determine an individual's perceptions of reality as encoded by the semantic representations of meaning within words. Language can be described as a rule-governed system that enables users to "create an infinite number of utterances from a finite set of resources (Chomsky: 1972 cited in

Willis, 1997: 68)." This description of language, while articulate, limits the depiction of language to only one dimension of the human experience. To understand the full scope of language acquisition, linguists are now connecting features of language that have previously been outside the scope of linguistic theory. Brown (2007: 69) states:

> …linguistic theory is now asking the deepest possible questions about human language, with some applied linguists examining the inner being of the person to discover if, in the affective side of human behavior, there lies an explanation to the mysteries of language acquisition.

In order to understand how the processes of learning shape the acquisition of language, we must also understand how the cognitive and affective domains each influence the developing mind of a child experiencing the world and that of a fully developed adult experiencing the world.

3. Cognitive differences within first and second language learning

The notion of an innate predisposition to language is now generally accepted by child language specialists as being one factor in the development and acquisition of language (Mitchell and Myles, 2001: 16). It is this innate predisposition to language along with an individual's environmental interaction that seems to facilitate the process of first language acquisition. However, while all normal children given a normal upbringing will successfully acquire their first language naturally, without specific instruction in their environment, this is not true for second language learners within a classroom (Lightbrown and Spada, 2001: 28).

3.1 How thought affects first language acquisition

In first language acquisition, children seem to apprehend language as part of a holistic process. That is, situations are not broken down and neither are the verbal expressions that accompany them (Bollinger, 1976: 100 cited in Carter, 1998: 177). Children appear to be generally unaware that they are acquiring language or of how societal values and attitudes within one language or another are encoded within their words (Brown, 2007: 66). It is likely that such constraints aid in shaping the perceptual information that develops within a child's semantic representation of words. Clark (1973 cited in Carter, 1998: 147) describes each word as possessing a set of semantic features and that children assign meaning based on what they encode to be a words most prominent perceptual characteristics. Through these encodings of language children not only learn representations of meaning, but they learn how to perceive the world around them as expressed and experienced through a gradual build-up of meaning within language.

The functional perspective of first language acquisition sees such representational development as originating from the interplay between the innate learning of children and the environment where learning takes place (Lightbrown and Spada, 2006: 19). Under this theory, language functions are the meaningful, interactive purposes accomplished within a social context via language forms (Brown, 2007: 33). An early proponent of such cognitive processes was Jean Piaget who believed that language was one part of a symbolic system of representation developed throughout childhood (Lightbrown and Spada, 2006: 20). Through this system, language is used to illustrate knowledge that has been gained as children physically interact with their surroundings. However, a limitation

within this theory is that language development is viewed as being similar to other types of cognitive skills that children develop and not independent of these cognitive processes. Vygotsky (1978 cited in Brown, 2007: 34) has claimed that this form of learning is too unidirectional. Additionally, Gleitman and Wanner (1982: 13 cited in Brown, 2007: 34) state that children appear to approach language learning already equipped with conceptual interpretive abilities for arranging ideas about the world.

3.2 How thought affects second language acquisition

Unlike learners of a first language, second language learners within a classroom do not simply acquire the language to which they are exposed no matter how carefully the exposure may be orchestrated by the teacher. Second language learning in a classroom is, unfortunately, exemplified by incomplete success (Mitchell and Myles, 2001: 20). Ellis states that teachers are primarily concerned with the effective use of language and its propagation (2001: 65). Language fabricated for learning purposes within classrooms tends to focus on specific areas, such as clause structures and verb groups, leaving other areas of use and meaning untouched (Willis, 1997: 38). Because of this, the conditions for structured learning that take place within a classroom are inherently different from the holistic processes that exist within a natural learning environment for a child.

Second language learning within a classroom is heavily dependent upon instruction. Classroom learning requires focused attention to the different types of forms available for the expressions of various functions within language. Because language contains surface-

structure, such as phonological features, and deep-structure, such as semantic features (Holzman, 1998: 49 cited in Brown, 2007: 43) learners must be able to recognize and imitate sounds, as well as understand meaning. For children acquiring a first language though, conscious focus on specific elements of language is not necessary. Noticing that second language learners cannot begin to acquire language features until they have become aware of the input, Richard Schmidt (2007, 2001 cited in Lightbrown and Spada, 2006: 44) developed the noticing hypothesis to explain such circumstances. Brown (citing Robinson, 2003; Ellis, 1997; Leow, 2000 in 2007: 292) states that for learners to convert input to intake they must be focally attentive to linguistic elements. However, unlike first language learners, second language learners are able to use the language they experience in the classroom to consciously create inferences, hypotheses and generalizations about the language system as a whole (Skehan, 1996: 18). Brown (2007: 213) states:

> The act of learning to think in another language may require a considerable degree of mastery of that language, but a second language learner does not have to learn to think, in general, all over again. As in every other human learning experience, the second language learner can make positive use of prior experiences to facilitate the process of learning by retaining that which is valid and valuable for second culture learning and second language learning.

3.3 How language affects thought within a first language

Because of the young age at which first language acquisition begins, children are unable to describe the language rules they have internalized, nor are they able to identify the inner mechanisms that facilitate the process of storing and retrieving their selected pieces

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of language (Mitchell and Myles, 2001: 12). Lewis (1996: 12) states that language is always social and always acquired from outside. The word order of any language reflects the world of the language that children hear. The combined words possess a meaning relationship making them more than simply a list of words (Lightbrown and Spada, 2006: 2). To explain the presence of such underlying rules for meaning within language development, Noam Chomsky hypothesized that all children were born with an innate template that contained the universal principles inherent within all human languages that he titled Universal Grammar (UG). The presence of such a template within the human mind would require children to utilize these principles to comprehend the rules or parameters within the language they are acquiring. Shortall (1996: 34) states that UG sees language as a collection of universal principles and a set of parameters that children are born with and must be switched one way or another by the language of the child's environment. UG has yet to be proven, nonetheless it offers critical insight to how the mind may orchestrate variations in acquiring different grammatical features of language.

3.4 How language affects thought within a second language

The theory of UG hypothesizes that the principles for language are universal not only for acquisition of a first language, but also for that of a second language (Lightbrown and Spada, 2006: 35). Research on UG seems to have identified some of these universal properties and principles (Brown, 2007: 255). Additionally, second language learners, not having their parameters switched on, may require specific information about what is grammatically acceptable in the new language (White: 1991 cited in Lightbrown and Spada, 2006: 36).

3.5 The interaction of thought and language in first language acquisition

Exposure to language is necessary for the facilitation of acquiring language. However, evidence shows that there are maturational constraints on language acquisition (Lightbrown and Spada, 2006: 73). Through research it has become clear that language functioning extends beyond cognitive thought and the structures of memory (Brown, 2007:34). The Critical Period Hypothesis (CPH) asserts that humans are genetically programmed to acquire specific types of knowledge and skill sets within specific time periods of biological development (Lightbrown and Spada, 2006: 19). According to CPH children who are not exposed to language during the primary years would be unable to acquire language abilities as adults. However, it is somewhat problematic to compare the implicit conditions that allow language to arise in children to the explicit learning conditions for adults. Children in informal learning situations have time and energy to devote to learning language as well as more opportunities to use language in the environments that are free of pressure to speak fluently and accurately from the outset (Lightbrown and Spada, 2001: 36). Regardless of such assertions, research seems to indicate that the maturation process of the brain eventually extricates the ability required for implicitly acquiring abstract patterns underlying human language (DeKeyser, 2000: 518 cited in Brown, 2007: 67).

3.6 The interaction of thought and language in second language acquisition

For second language learners the single most important factor for progress may be the quality and quantity of input to which learners are exposed (Lewis, 1996:16). Carter (1998: 155) states that, "Learning vocabulary effectively is closely bound up with a

teacher's understanding of, and a learner's perception of, the difficulties of words."
Additionally, Willis (1997:38) describes the necessity for learners to have the opportunity
to assemble and rehearse prefabricated chunks and routines that language use is
dependent upon. Stephen Krashen (1977 cited in Brown, 2007: 124) suggests that
language learning for adults entails monitoring or learning strategies involving conscious
attention to forms, while for children the process involves utilizing strategies of
acquisition that involve subconscious attention to functions. The Monitor Model is a
functional hypothesis devised by Krashen to explain how learners acquire and assemble
language (Lightbrown and *Spada*, 2006: 36). It consists of five hypotheses. In the first
hypothesis of *acquisition learning* individuals acquire what they are exposed to without
conscious intention. However, through conscious effort individuals learn form and rules
of language. Next, within the *monitor hypothesis* the language system itself begins to act
as an editor or monitor of the utterances being produced. In the hypothesis of *natural*
order second language acquisition develops along predicable sequences. In the *input*
hypothesis acquisition occurs after exposure to a level of language that is beyond the
current level of the learner. This is expressed through i+1. i represents the current level of
language ability with +1 representing new words, grammar or pronunciation. Finally, in
the *affective filter hypothesis* the lack of language acquisition for some individuals is
explained. Learners who have negative attitudes or emotions may filter out input that
would otherwise be available for acquisition. A criticism of this theory though is that it is
too dependent upon varying contexts that shape each individual learner. It is more likely
that individuals have general inclinations for learning and that given certain contexts they
can exercise varying control over the necessary style they feel is appropriate to invoke

(Brown, 2007: 124). If this is the case, then teachers are responsible for understanding each student's learning style and adjusting the quality and quantity of input to which learners are exposed. Breen (2001: 124) states that:

> …teacher[s] must facilitate comprehension through the provision of linguistic input sensitive to individual learner inclinations, or the teacher should endeavour to shape individual learning behaviour so that each learner may attain a repertoire of efficient processing strategies.

4. Affective differences within first and second language learning

Research has shown that there is not only tremendous cognitive contrast between children acquiring a first language and adults acquiring a second one, but also tremendous affective contrast between each of these two groups (Brown, 2007: 24). Language is responsible not only for developing the means to communicate, but the means through which identity is shaped. This is an identity that is subject to the egocentricity of human development and the inhibitions associated with self-awareness. An early proponent of such an identity being accountable to language was Alexander Guiora (Guiora et al., 1972b cited in Brown, 2007: 69). Guiora called this identity the language ego and proposed that it may account for the difficulties adults have in learning a second language. Interacting within a new language necessitates learners to not only manipulate the new forms within the language, but to also develop the appropriate attitudes toward how they experience new representations of culture and self that shape those forms as well. Learning a second language calls upon the language ego to literally see the world in a different way (Cook, 1991 cited in Willis, 1997: 138). Because of this, individuals

learning a new language are required to adopt or reject some of the identity markers of a different cultural group in ways that first language learners are not (Lightbrown and Spada, 2001: 33). Such transitions in language ego are not only elusive within the processes of language acquisition, but also instrumental in impacting prerequisite affective factors for learning.

4.1 Affective factors that shape language learning and identity

For first language learners, the unconscious internalization of language features and social codes is generally acquired unencumbered by individual learning styles or affective factors. Because of the age of acquisition, first language learners do not have the same emotional stake in learning language that second language learners do. While first and second language learners may not always be conscious of their individual learning styles virtually all adult second language learners will be certain to have strong beliefs and opinions about how their instruction should be delivered inside a classroom (Lightbrown and Spada, 2001: 35). Although the variables within the affective domain are problematic to describe scientifically, Brown (2007: 154-174) states seven affective factors for consideration that can significantly influence the development of both identity or language ego and instructional learning: self-esteem, willingness to communicate, inhibition, risk taking, anxiety, empathy and extroversion.

4.1.1 Self-esteem

Universal for all human beings is the need for interactions between one's self and others. Malinowski (1923 cited in Brown, 2007: 154) described this phatic communion as

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"defining oneself and finding acceptance in expressing that self in relation to valued others." Because people derive their sense of self-esteem by assessing their accomplishments from the accumulation of experiences between themselves and the others around them, the judgements individuals make about accomplishments within a language classroom can have significant impacts on their attitudes towards continued learning (Brown: 2007: 154-155).

4.1.2 Willingness to communicate

Willingness to communicate (WTC) can be described as the choice to initiate communication (MacIntyre et al., 2001: 369 cited in Brown, 2007: 157). However, high levels of communicative ability do not necessarily correspond with a high WTC. Factors of self-confidence and self-esteem can determine a learner's willingness to communicate. An unwillingness to communicate on the part of the learner can limit the intake of new vocabulary and ideas, as well as the reinforcement of how to use vocabulary and other grammatical structures within communicative settings. Additionally, a learner with a high willingness to communicate would find such communicative settings of learning not only enjoyable, but motivating as well.

4.1.3 Inhibition

All human beings not only have a sense of self, but a sense of self that is distinct from others and should be protected from emotional harm. From childhood, individuals construct sets of defences to protect the ego by inhibiting behaviour that may have illicit negative emotional reactions from others. Adaptive language egos that allow learners to

lower some inhibitions may enable greater success in second language acquisition (Brown, 2007: 158). Because learning a second language necessitates the making of mistakes, many learners will have inhibitions towards doing so in front of others, unlike children learning a first language who have not yet developed the same level of inhibitions.

4.1.4 Risk taking

Risk taking enables learners to implement intelligent guesses about language. While first language learners are able to do this unconsciously, second language learners often need to be provided with an affective framework within a class setting that encourages risk taking. Second language learners need to be able to test out hypotheses about language even if they turn out to be wrong. Additionally, the affective framework provided by teachers within a class should stimulate self-confidence and encourage participants to experiment with language without fear of embarrassment (Dufeu, 1994: 89-90 cited in Brown, 2007: 160).

4.1.5 Anxiety

Anxiety (Scovel, 1978: 134 cited in Brown, 2007: 161) can be described as feelings of uneasiness, frustration, self-doubt, apprehension and worry. Additionally, language anxiety distinguishes itself from other types of anxiety by arising from the situational nature of second language learning (MacIntyre and Gardner, 1991: 112). Language anxiety has been identified as being comprised of three components: communication apprehension, fear of negative social evaluation and apprehension over academic

evaluation or test anxiety (Horwitz, Horwitz and Cope, 1986; MacIntyre and Gardner, 1989, 1991c cited in Brown, 2007: 162). See Figure 1 below. Each of the components that comprise language anxiety can have negative influences on second language learner's attitudes towards learning.

Language anxiety
Communication apprehension: arises from learners' in ability to adequately express negative thoughts and ideas   **Fear of negative social evaluation**: arises from a learner's need to make a positive social impression on others   **Test anxiety:** apprehension over academic evaluation

Figure 1: Language anxiety (Brown, 2007: 162).

4.1.6 Empathy

Empathy can be described as the ability to perceive what another individual feels. In order to effectively communicate, a sophisticated amount of empathy is required to understand cognitive and affective states in others (Brown, 2007: 165). Because language is the primary tool by which humans make transactions between self and others, empathy can have a significant impact on how learners engage others in a second language setting when deprived of certain cognitive and cultural feedback within language.

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4.1.7 Extroversion

Extroversion, the ingrained need for a person to receive ego enhancement from other people, and introversion, the ingrained need for a person to receive that affirmation from within oneself, are potentially important factors within second language learning (Brown, 2007: 166-167). However it is not clear to what extent either of these factors helps or hinders the process of second language learning (Brown, 2007: 167). Because cross-cultural norms vary widely in regards to what is an acceptable amount of extroversion or introversions, teachers need to be considerate of the extent to which learners are comfortable engaging in activities that may be outside their personal or cultural boundaries.

4.2 Motivation

Motivation is another important affective variable within language acquisition. Lightbrown and Spada (2001: 33) describe motivation within second language learning as a complex phenomenon that can be defined in regards to learner's communicative needs and their attitudes towards the second language community. While motivation can play a factor in the development of language skills for children, such as aiding to improve reading skills, it does not have the same influence upon identity construction and language learning that it does for adult second language learners. Because not all adult learners may aim to achieve mastery in a second language, motivation for language acquisition can play a significant role in determining how learners pursue the development of their own skills, perceive shifts in cultural values and participate in communicative contexts for learning within a class.

Theories of motivation have been proposed from perspectives of behavioristic, cognitive and constructivist views (Brown, 2007: 170). Behaviorist views see motivation as the anticipation of reward. Cognitive perspectives see motivation as being centered on the emphasis of choice. Constructivist views see motivation as being the interaction of social contexts and personal choices. See Figure 2 below. Learner attitudes towards motivation can be characterized as having either instrumental or integrative orientations. Learners with instrumental orientations see language as a means of attaining goals such as furthering a career, while learners with integrative orientation seek to integrate into the culture of the second language and have social interchange with members of that group (Brown, 2007: 170).

Behavioristic	Cognitive	Constructivist
- Anticipation of reward - Desire to receive positive reinforcement - External, individual forces in control	- Driven by basic human needs (exploration, manipulation, etc.) - Degree of effort expended - Internal, individual forces in control	- Social context - Community - Social status - Security of group - Internal, interactive forces in control

Figure 2: Three views of motivation (Brown, 2007: 170).

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However, the most significant feature of motivation is the degree to which learner motivation can be described as being either intrinsic or extrinsic. For learners with intrinsic motivation, feelings of competence and self-determination may be the ultimate goals within language learning. For learners with extrinsic motivation the anticipation of rewards from outside the self may fuel reasons for learning (Brown, 2007: 172). See Figure 3 below. In either instance, attitudes towards learning and acquisition of new cultural parameters and meanings of representation can be significantly influenced by the degree of motivation.

	Intrinsic	**Extrinsic**
Integrative	• L2 learner wishes to integrate with the L2 culture (e.g. for immigration or marriage)	• Someone else wishes the L2 learner to know the L2 for integrative reasons (e.g. Japanese parents send kids to Japanese language school)
Instrumental	• L2 learner wishes to achieve goals utilizing L2 (e.g. for a career)	• External power wants L2 learner to learn L2 (e.g. corporation sends Japanese businessman to U.S. for language training)

Figure 3: Motivational dichotomies (Brown, 2007: 175).

5. Conclusion

The symphony of the human mind is an interconnection of cognitive and affective features that is able to make available the processes necessary for first and second language acquisition. While aspects of this symphony continue to play beyond the primary years, processes that once facilitated first language learning cease to interact in precisely the same manner for adults engaged in second language learning. Because of changes in both the mind and external learning environments, there are salient differences in the language learning processes for a first language and for that of a second language within the classroom.

For first language learners, language acquisition seems to primarily be the outcome of unconscious development within situations of implicit language learning. The ability to acquire language through strategies of subconscious attention to function and form appears to be an innate trait within all human beings. Children experience language in coordination with the development of their ego and their occurring cultural contexts. Whether through Universal Grammar or another means, children are able to understand and acquire the word order and representations of meaning within any language they are given significant exposure to while maturing. In children, first language learning is clearly more of an unconscious cognitive endeavour in which internal processes are triggered by stimulation and interaction from outside language sources.

For second language learners within a classroom though, mastery can be varied, as language learning seems to primarily be the result of conscious attention to situations of

explicit instruction within affective frameworks. Individuals learning a second language within a classroom seem to require significant attention from teachers in regards to the atmosphere made available for learning through affective frameworks. Explicit instruction is necessary for learners to consciously monitor internal processes of memorization for the acquisition of form and function. However, beyond the necessity of memorizing new words and word forms are the affective factors connected with language ego that shape second language learning. Adults are able to internalize new parameters for grammar and encode new representations of cultural meaning, although unlike children this process seems to require specific attention on their part and is not implemented through an unconscious process. Second language learning entails focused attention to instruction that not only presents learners with opportunities to practice the new target language, but also provides them with a high quantity of quality input that incorporates prefabricated chunks and routines into the material. In second language learning within a class, language learning is clearly more of an unconscious affective endeavour in which internal cognitive processes are consciously focused on stimulation from interaction with outside sources of language. To what extent internal cognitive processes are focused on learning language is dependent upon the affective factors influencing second language learners and their contexts of explicit instruction and intrinsic or extrinsic motivation.

Understanding how the cognitive and affective domains each influence the developing mind of a child experiencing the world and that of a fully developed adult experiencing the world can aid our understanding of the different processes of learning that shape

language acquisition. While the symphony of the human mind may employ the cognitive and affective processes in different ways to facilitate the acquisition of first and second languages, the communicative purposes for which we all strive to acquire language remain the same.

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