

Child Second Language Acquisition and Age Factor

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This paper discusses the background of the research on child language acquisition and the age factor in second language acquisition (SLA) from neurological, cognitive, and affective and social perspectives in order to understand the universal nature of second language development.

Lateralization seems to have some influence on the critical period for language acquisition. Although the left hemisphere is mainly involved in language skills, the right hemisphere plays an important role, especially for children. Exposure to a second language (L2) in childhood reactivates their right hemisphere in learning an L2 at a later stage. The linguistic relationship between a first language (L1) and an L2 may influence child second language acquisition. As children grow, the less predominant universal grammar (UG) becomes, and the more influential cognitive development becomes. Generally, in affective and social terms, children seem to have an advantage over adults in learning an L2. However, affective and social factors are influenced by the context which learners are surrounded by. The distinction between L2 and English as a foreign language (EFL) learning contexts should be paid attention to.

It is not possible to accept the view that children are in all aspects superior to adults or vice versa. Child second language acquisition, depending on various factors, is complicated.

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Introduction

Globalization is advancing so rapidly in various areas that international understanding and cooperation are becoming ever more important, as is the perspective of living as a member of international society. There are numerous children who live abroad because of their parents' work, and a number of foreign children whose parents work in Japan. The number of married couples with different language backgrounds is growing. Therefore, linguistic situations around children are becoming more and more complicated in Japan.

At some elementary schools in Japan, lessons in English conversation activities have been carried out as a part of "education for international understanding" during the "period for integrated study" (Ministry of Education, Culture, Sports, Science, and Technology [MEXT], 2001). English conversation activities were done at about 50% of all the public elementary schools in Japan in 2002, when the new Courses of Study were fully implemented (MEXT, 2003b). Several pilot schools have started teaching English as a subject on their own class schedules for research purposes (MEXT, 2003a). Therefore, many people have started to discuss English lessons in Japanese elementary schools.

Before introducing English as a formal subject, numerous studies on child second language acquisition, cognitive development, and affective and social factors should be done in Japan in order to understand the universal nature and individual differences of children more accurately. Some teachers and researchers say that children can acquire another language easily, so children should learn another language from early childhood. Others say that the mother tongue is the most important language, so children should learn only their mother tongue in their childhood. We therefore need to carefully consider and more fully understand child second language acquisition. What are the differences in second language (L2)

acquisition between children and adults? Is it true that children learn an L2 more easily than adults? How does the age factor influence L2 acquisition? What implications do these studies have for English as a foreign language (EFL) in Japan? In order to answer these questions, this paper discusses the background of child language acquisition and the age factor in second language acquisition (SLA) from neurological, universal grammar (UG) cognitive, and affective and social perspectives.

The Age Factor and Language Acquisition from Neurological Perspectives

In this section, the relations between the age factor and language acquisition from neurological perspectives, including the critical period hypothesis (CPH) and brain functions, are discussed. The purpose of this section is to clarify children's neurological nature in first language (L1) and L2 acquisition.

Critical Period Hypothesis

Many L2 researchers have discussed a critical period for language acquisition. The critical period hypothesis presupposes a certain biologically determined period when language can be easily and effortlessly learned (Ellis, 1994; Lenneberg, 1967; Penfield & Roberts, 1959; Singleton, 1989). First, Penfield (Penfield & Roberts, 1959) assumed the optimal period for learning languages. His clinical studies of aphasia reported that if injury on the brain occurred before nine to twelve years of age, children relearned language after experiencing such brain damage. Penfield hypothesized that children's remarkable recovery was due to the presence of neural plasticity. If children are exposed to more than one language in their childhood, they can learn languages easily by a switch mechanism, i.e. a conditioned reflex that works in the brain automatically (Penfield & Roberts, 1959).

Lenneberg (1967) also developed the notion of CPH.

Lenneberg argued that language functions were lateralized little by little to the left hemisphere of the brain between the age of two and puberty. Lenneberg claimed that the completion of lateralization, which means that certain functions are assigned to the left and right hemispheres, coincided with the close of a critical period. Lenneberg mainly described L1 acquisition, but Lenneberg mentioned an L2, which cannot be acquired only from exposure to an L2 after puberty.

Although both Penfield and Lenneberg proposed the critical period for learning languages, their opinions were slightly different. Penfield's idea was based on brain plasticity, whereas Lenneberg's rested on lateralization. In terms of an L2, Penfield recommended a direct method as pedagogy to both children and adults and stated that early exposure to an L2 might facilitate later learning. The reason why some adults are able to master a language through a direct method was not clearly explained by Penfield. Penfield seemed to view adult L2 learning optimistically, in spite of the CPH he supported. On the other hand, Lenneberg only mentioned that L2 learners after puberty had difficulty in learning foreign languages: In particular, proper accents of the language cannot easily be acquired.

There have been various opinions that raise questions about the CPH. Some researchers have suggested a weak version of CPH: There are several critical periods, not one. For example, Scovel (1988) supported the existence of a critical period for a native-like accent at around puberty but maintained that there was no evidence that supported a critical period for syntax and vocabulary. Seliger (1978) also suggested a multiple critical period hypothesis for L2 acquisition, based on the idea of a gradual loss of brain plasticity.

Walse and Diller (1981) explained a critical period in terms of the maturational rate of different nerve cell types. Walse and Diller distinguished between local-circuit neurons, which develop slowly into adulthood, and macroneurons, which mature in the early days of childhood. Walse and Diller also divided the process of language acquisition into lower-order and

higher-order linguistic functions. Lower-order language process, related to macroneurons, develops early and subserves "the basic analyses of speech in Wernichke's Area and the patterning of encoded information and the expressive speech of Broca's Area" (Walse & Diller, 1981, p. 16). Higher-order process, based on local-circuit neuron, develops slowly according to complex linguistic demand and subserves "semantic processing and word-object relationship" (Walse & Diller, 1981, p. 16).

Pronunciation is included in the lower-order process. Therefore, pronunciation develops and is acquired early in childhood, which makes the foreign accents of adults starting an L2 after puberty difficult to eradicate (Walse & Diller, 1981). On the other hand, linguistic relations depend on local-circuits and thus mature later. This explains why even adults starting an L2 after puberty can attain native-like proficiency in competences other than accent (Walse & Diller, 1981). Therefore, Walse and Diller argued that the optimal periods for language learning may vary according to different aspects of a language.

According to Moscovitch (1977), the lower-level functions, such as phonetic and phonological characters, may become lateralized by the first year of life. Other language functions may be lateralized to the left hemisphere as children's cognitive and linguistic abilities develop.

In addition, there have been several different views (Genesee, 1988; Krashen, 1981; Molfese & Molfese, 1979). First, according to Genesee (1988), Lenneberg's CPH concerns only interhemispheric localization, but intrahemispheric localization, as a matter of fact, needs to be taken into consideration. Secondly, some researchers have argued that there may actually be no relation between lateralization and a critical period. Krashen (1981), for example, claimed that lateralization was completed by age five and lateralization might have little or nothing to do with a critical period for language acquisition. Molfese and Molfese (1979) also did not agree that lateralization was related to a critical period.

In sum, the lines of research on CPH have provided a good deal of conflicting evidence. Penfield and Lenneberg connected cerebral plasticity and lateralization with an L1 critical period, which was based on pathological neurological evidence in an L1. Some researchers have argued that there may be a different timetable for acquiring different language functions depending on a gradual loss of plasticity. Others have maintained that lateralization may not be related to a critical period. Thus, the relationship between brain lateralization and a critical period has not been clearly established.

Left- and Right-Brain Hemisphere

Numerous attempts have been made by scholars to show that the two sides of the cortex of the brain perform different functions. For example, the left-brain hemisphere is associated with language stimuli, time-related function, and intellectual, planned, structured, logical, and digital thought (Brown, 2000; Genesee, 1988; Krashen, 1981). The right-brain hemisphere is related to spatial relations, nonlanguage stimuli (e.g. melodies), analogical, synthetic, intuitive, fluid, and spontaneous thought (Brown, 2000; Genesee, 1988; Krashen, 1981). According to Brown (2000), the left hemisphere is more efficient in processing mathematical and linear information, whereas the right hemisphere can process integrative and emotional information. Genesee (1988) stated that the hemispheres differ not in the types of stimuli of processing but in their manner of processing. Although the left hemisphere processes information analytically and serially, the right hemisphere processes information in a holistic and parallel way (Genesee, 1988).

The left hemisphere had been said to be associated with language. However, subsequent research has revealed that both hemispheres can contribute to language processing. Carroll (1994) suggested that the right hemisphere might match the sounds of words to meanings. According to Zaidel (1983), the right hemisphere may be related to semantic, pragmatic, and paralinguistic processes. Beeman (1998) also argued that the left hemisphere and the right hemisphere activated semantic

information in different manners. Beeman (1998) stated the following:

The LH [left hemisphere] appears to strongly activate a narrow semantic field, only including the interpretations that are dominant or most relevant to the immediate context. In contrast, the RH [right hemisphere] weakly activates a broad semantic field, including many interpretations or meanings that may seem less relevant. This asymmetry can be described as fine semantic coding in the LH and coarse semantic coding in the RH. (p. 279)

What is more, some researchers (Carroll, 1994; Corballis, 1983) have showed that the right hemisphere is, in fact, connected with language comprehension. Beeman and Chiarello (1998) stated that processing in the right hemisphere was associated with all components of language comprehension, which seemed to be qualitatively different from that in the left hemisphere. Carroll (1994) suggested that the right hemisphere showed syntactic and phonetic deficits compared with the left hemisphere.

Moreover, Peters (1981) directed his attention to “Gestalt” processing perspective and “Analytic” strategies of language production. Peters argues that Gestalt strategy of language production, from the whole to the parts, is engaged with the right-hemisphere development, whereas Analytic strategy, from the parts to the whole, is engaged with the left-hemisphere development.

To sum up, the left hemisphere mainly processes language, but the right hemisphere also may be highly related to language processing. Both hemispheres seem to process language together in different manners: The left hemisphere processes language analytically, whereas the right hemisphere processes language holistically. In the next section, the relations between these brain functions and L2 acquisition are discussed.

Relationship Between Brain Function and L2 Acquisition

Although there have been some inconsistent results, numerous researchers have tried to reveal the relationship between the

right hemisphere and L2 acquisition. Genesee, Hammers, Lambert, Mononen, Seitz, and Stark (1978), based on the result of an experiment using French-English balanced bilinguals, suggested that early bilinguals tended to use the left hemisphere, whereas late bilinguals seemed to use the right hemisphere. This is called the age hypothesis. Vaid and Genesee (1980) further developed the age hypothesis and predicted that both early balanced bilinguals and monolinguals used the left hemisphere, whereas late balanced bilinguals used the right hemisphere.

Why do early balanced bilinguals use the left hemisphere? Let us examine the studies of Genesee et al. (1978). Genesee et al. divided learners into three groups according to the age when the bilingual experience started: (1) infant bilingualism (bilingual from infancy); (2) childhood bilingualism (bilingual from four to six years of age); and (3) adolescent bilingualism (bilingual after twelve years of age). Infant bilingualism (1) and childhood bilingualism (2) showed left-hemisphere involvement.

According to Bialystok and Hakuta (1994), children who start to learn an L2 before age five behave like natives because they are native speakers. Based on this view, children in groups (1) and (2), who became bilingual before age six, acquired two languages as their native languages. It seems reasonable to suppose that children in groups (1) and (2) are native speakers of both languages.

Furthermore, children in groups (1) and (2) are already bilingual before brain lateralization occurs, if lateralization is completed by age nine. They may acquire two languages using both hemispheres. After a loss of brain plasticity, both of their languages might be lateralized to the left side altogether.

Penfield (1965) proposed that even minimal L2 learning by young children facilitated additional learning at a much later date. In order to confirm Penfield's argument, Carroll (1980) conducted three dichotic listening experiments with adults at various levels of L2 proficiency. Carroll (1980) found adults exposed to Spanish before age six at home had right-hemi-

sphere dominance for Spanish. As Penfield (1965) proposed, Carroll (1980) assumed that early exposure, even though it was minimal and there was no productive use of the L2, might allow the reactivation of innate neurofunctional systems at a later period.

Learners examined by Genesee et al. (1978) were all balanced bilinguals because they acquired an L2 perfectly in childhood, whereas learners investigated by Carroll (1980) were not bilingual, being only exposed to an L2. From this viewpoint, it may be safe to say that when children perfectly acquire an L2 in childhood, their L2 may be lateralized to the left side with their L1. On the other hand, when children are only exposed to an L2, their brains before lateralization are plastic, and they use both hemispheres, above all the right hemisphere. Witelson (1977) argued that children use the right hemisphere in language functions more than adults. Ito (1994) also stated that the right side of the brain is active until age seven or eight and has high ability to understand things holistically. Therefore, exposure to an L2 in childhood, when the right side of their brain is active, seems to activate the right side of their brain functions further and leave some trace there.

So far, we have examined the relation between brain functions and L2 acquisition. In this field, there seems to be considerably contradictory evidence. This may be due to some differences in methods, tasks, subject screening and classification, and individual differences of subjects (Vaid & Hall, 1991). We may at least say the following:

- (1) Children who become balanced bilinguals before age six seem to lateralize both languages to the left side as their mother languages.
- (2) Learners only exposed to an L2 before age six tend to use the right hemisphere, which seems to facilitate later learning.

To sum up, we have discussed the relations between brain functions and language acquisition. It is likely that although the time of lateralization might be different according to

language functions, lateralization may occur. Lateralization seems to have some influence on a critical period for language acquisition. Although the left hemisphere is mainly involved in language skills, the right hemisphere may play an important role, especially for children. Exposure to an L2 in childhood may reactivate their right hemisphere in learning an L2 at a later stage, which might be true of the case in EFL.

L2 acquisition is completely different from L1 acquisition, because we already have L1 knowledge and cognitive competence based on an L1 when we learn an L2. In terms of L2 acquisition, not only brain plasticity but also other factors, including UG, an L1, and cognitive development, should be considered.

The Age Factor and Language Acquisition from UG Perspectives

This section discusses the age factor and language acquisition from UG and L1 perspectives. Chomsky proposed a language acquisition device (LAD), which contains the innate knowledge of language, and UG, a system of universal linguistic rules (as cited in Brown, 2000). Although these theories were originally based on an L1, some researchers have investigated UG-based L2 learning research since the early 1980s (White, 2000). UG-based perspectives have provided a more sophisticated understanding of the difficulty of L2 learning than contrastive analysis hypothesis (CHA) and cross-linguistic influence (CHI). However, the main point of research has been only whether UG is available in L2 learning or not. The L2 initial state and the L2 final state have recently started to draw attention. There have been five possible positions about the availability of UG (White, 2000). These are divided on the basis of two points: L1 grammar (full transfer or partial transfer) and the extent to which UG restricts the inter-language representation.

① *Full Transfer/Partial Access*

White (2000) explains full transfer/partial access as follows: “This is the position that the L1 grammar constitutes the learner’s representation of the L2 and is used to analyze the L2 input; in other words, the L2 initial state consists of the L1 final state” (White, 2000, p. 134). Features of UG that are not incorporated in the L1 grammar are not accessible, i.e. new parameter resetting is not possible. Only through an L1, UG effects are considered to be available in the interlanguage. The L2 final stage is different according to an L1 (White, 2000). This position has been supported by Bley-Vroman (1989), Clahsen and Muysken (1989), and Schachter (1989).

On the other hand, the “UG is dead hypothesis” or the idea that there is no access to UG was supported by Clahsen and Muysken (1986) and Schachter (1988). They claimed that UG was no longer available to L2 adult learners and L2 learning was conducted through cognitive learning strategies and general intellectual problem-solving skills. However, most of these proponents have recently changed their opinions slightly. They have started to agree that some traits of UG are available in an L2, especially through the properties instantiated in an L1. The proponents of the “UG is dead hypothesis” have changed their opinions to full transfer/partial access (Kaltenbacher, 2001).

② *No Transfer/Full Access*

This position is similar to the original pure UG hypothesis. All L2 acquisition might proceed along the same path. Universal properties that are not instantiated in an L1 are fully available to an L2 at any age. This approach predicts that convergence on the L2 system necessarily could happen (White, 2000, p. 145). Proponents of this view include Epstein, Flynn, and Martohardjono (1998) and Flynn (1996).

③ *Full Transfer/Full Access*

Under this approach, an L1 and an L2 are different in the

starting point, but UG is involved in a similar way. Like full transfer/partial access, the L2 initial state consists of the L1 final state. Like no transfer/full access, UG that is not incorporated in an L1 is still available. The learners are supposed to use an L1 basically, but when the L1 is presumed to be insufficient for the learning task, the learners start to use UG (Gass & Selinker, 2001). This approach predicts that parameter resetting takes place, except when an L2 includes the transferred L1 grammar. That means that L1 grammar acts as a filter. Some aspects of the L2 input are unnoticed and fossilized. This approach does not predict convergence on the L2 final state, since some traits of L1 grammar may keep learners from noticing some properties of an L2. This is proposed by Schwartz and Sprouse (1996), Schwartz (1998), and Lakshmanan (1998).

④ *Partial Transfer/Full Access*

This approach states that the L2 initial state constitutes the properties of an L1 and UG at the same time (White, 2000). This view has been supported by Eubank (1994) and Vainikka and Young-Scholten (1994, 1998). Different characteristics are accessible through an L1 and through UG. For example, Vainikka and Young-Scholten (1994, 1998) have suggested that only lexical categories are transferred into an L2 but that functional categories are gradually detected and developed through UG. The L2 final state may or may not converge depending on what is accessible through an L1 and what is accessible through UG (Gass & Selinker, 2001).

⑤ *Partial Transfer/Partial Access*

This approach states that only some properties of an L1 are transferred into an L2 and that “certain functional properties never become specified for strong/weak values in the course of L2 development” (White, 2000, p. 138). “Since inflectional features are never specified, there is permanent variability in word order, with verbs sometimes raising and sometimes not” (White, 2000, p. 138). Viewed from this standpoint, some of

the interlanguage grammar may be fossilized and ultimate attainment may be non-native-like (White, 2000). This version is supported by Beck, Eubank, Aboutaj, Bischof, Huffstutler, Leek, and West (White, 2000).

To sum up, most of the UG theorists accept some effects of UG in L2 learning and some effects of L1 transfer, except in case of no transfer/full access. Only the parts and the degree of UG involvement and L1 transfer are different.

What is the relationship between UG and a critical period? Johnson and Newport (1991) investigated the acquisition of subjacency associated with UG. They found that performance decreased according to age of arrival. Towell and Hawkins (1994) also stated that parameter resetting became difficult with age. The mastery of UG principles seems to differ inside and outside a critical period, which is around puberty. In other words, a critical period sets a limit to acquisition of syntax.

Almost all UG theorists, except those who adopt the no transfer/full access position, have accepted some L1 transfer. If we accept the existence of L1 transfer's effect, we have to direct our attention to the relation between an L1 and an L2. White (1985) showed that there were some differences between the interlanguage grammars of French-speaking and Spanish-speaking learners of English. Furthermore, Vainikka and Young-Sholten (1996) found L2 learners of German reflected their L1 regarding word order.

When an L1 and an L2 have almost the same parameters, e.g. Portuguese and Spanish, even adult L2 learners can learn an L2 relatively easily, although it is not clear whether learners use L1 parameters or only replace L1 words with L2 words. When an L1 and an L2 have different parameters for the most part, e.g. Japanese and Spanish, L2 learners can hardly make use of their L1 parameters and may have difficulty in resetting new parameters. That is, parameters that are similar between an L1 and an L2 are easier to learn than parameters that are different. Therefore, a critical period might be higher in age in learning an L2 that shares parameters similar to an L1. It

follows from what has been said that the combination of an L1 and an L2 may affect the critical period of an L2. In the next section, the age factor and language acquisition from cognitive development are discussed.

The Age Factor and Language Acquisition from Cognitive Development

Piaget suggested that “children progress through a series of stages in their thinking, each of which corresponds to broad changes in the structure or logic of their intelligence” (as cited in Smith, Cowie, & Blades, 2003, p. 391). Piaget (as cited in Smith et al.) explained the main stage of development as follows. In the sensorimotor stage (age 0–2), the infant recognizes the world through actions and sensory information. In the pre-operational stage (age 2–7), children start to understand about the classification of objects, but their thinking is egocentric, called egocentrism. In the concrete operational stage (age 7–12), children start to classify and order as well as organize objects into series. However, children are still tied to immediate present objects and environment. Therefore, they have difficulty with abstract ideas. Young people in the formal operational stage (over age 12) begin to solve problems by considering all possible answers in a systematic way and can reason deductively and hypothetically.

However, many researchers have reinterpreted Piaget’s theory. For example, Jahoda (1983) showed that African children in Harare with various experiences of parental or personal involvement in small trading had more advanced understanding of economic principles than British children. Smith et al. (2003) stated that “children’s performance in the concrete operational period may be influenced by the context of the task” (p. 408). Some researchers have found that the achievement of formal operational thinking is more gradual and haphazard than what Piaget suggested (Smith et al., 2003). In addition, Danner and Day (1977) showed that formal thinking could be trained. As we have seen, many aspects of the theory have

been subject to major criticisms. However, Piaget's approach has provided a comprehensive account of cognitive growth (Smith et al., 2003).

In SLA, some researchers have referred to Piaget's theory. They have maintained that the beginning of the formal operational thinking had influence on L2 learning. There are two approaches. The first position is supported by Krashen (1975), Rosansky (1975), and Felix (1987), who stated that the arrival at the cognitive stage of formal operation beginning around puberty must be the close of a critical period for an L2.

Krashen (1975) suggested that the self-consciousness of adolescents might have some detrimental effects on L2 acquisition. However, in later work, Krashen changed this position slightly. Krashen (1985) suggested "older acquirers progress more quickly in early stages because they obtain more comprehensive input" (p. 12).

Rosansky (1975) stated that what blocks L2 learning was the awareness of differences that accompany formal operational thought. That is, this awareness may prevent children's ability from concentrating only on underlying similarities between two languages.

Felix (1987) suggested language-specific cognitive structures (LSC) and problem-solving cognitive structures (PSC). LSC means certain innate faculty, similar to LAD suggested by Chomsky, activated in L1 acquisition and child second language acquisition. At the formal stage, ages 10–12, L2 learners start to have access to PSC, which interferes with L2 acquisition. Felix maintained that because of the competition between PSC and LSC in L2 acquisition, adults might be inferior to children in L2 language acquisition.

On the other hand, some researchers have maintained cognitive maturity's advantage in L2 learning. This position has been supported by Ausubel (1964), Taylor (1974), Ervin-Tripp (1974), and Cummins (1983). Ausubel (1964) showed two adult advantages in learning an L2. First, since adults have a greater L1 vocabulary than children, adults do not need to learn thousands of new concepts in L2 learning as children

do. Secondly, because adults have the ability to make conscious grammatical generalizations and apply them to proper forms, adults have an advantage over children in learning an L2.

Taylor (1974) supported Ausubel's view. Taylor maintained that adults' cognitive maturity enables adults to manage the abstract nature of language better than children. Ervin-Tripp (1974) also argued that experience with an L1 enhances L2 learning.

In addition, Cummins (1983) stated that cognitive maturity must be advantageous to some aspects of L2 learning. Cummins proposed two continua regarding language proficiency. The extremes of the first continuum are context-embedded and context-reduced communication. Context-embedded communication means that "the language is supported by a wide range of meaningful paralinguistic and situational cues" (Cummins, 1983, p. 120). Context-reduced communication mainly depends on linguistic cues.

The extremes of the second continuum are cognitively undemanding communication and cognitively demanding communication (Cummins, 1983). Cognitively undemanding communication requires little cognitive activity, in which the linguistic tools have become automatized (Cummins, 1983). Cognitively demanding communication requires cognitive activity, in which "the communicative tools have not become automatized" (Cummins, 1983, p. 121). Cummins (1983) suggested that cognitive maturity was essential in context-reduced and cognitive-demanding types of skills. Therefore, older learners with a steady background of schooling in an L1 might acquire these skills in an L2 more rapidly than younger learners.

Nakajima (2001) stated the correlation of reading ability between languages. The correlation of the close languages (French and English) is about 80%, whereas that of the distant languages (Hebrew and English) is about 40%. The combination between Japanese and English is located in the middle. Nakajima concluded that cognitive and academic

abilities were dependent reciprocally, even in the case of distant languages like Japanese and English.

Whereas some researchers have insisted that cognitive maturity might block L2 learning, others have found that cognitive development would promote L2 learning. It is not clear which position is right, but we can say at the very least that cognitive maturity is significantly involved with L2 learning and that L2 learning is promoted by cognitive maturity based on an L1 in context-reduced and cognitively demanding situations, e.g. schooling in general, and especially some ability in reading and writing in an L2. Judging from the cognitive point of view above, it might be concluded that cognitive development affects language learning both positively and negatively. As children grow, the less predominant UG becomes and the more influential cognitive development becomes. In the next section, affective and social perspectives are discussed.

The Age Factor and Language Acquisition from Affective and Social Perspectives

There are several social-psychological reasons why adults learn languages less easily than children. Shumann (1975) suggested that affective variables, such as language shock, culture shock, attitude, motivation, and ego permeability to an L2, may play a more crucial role than biological maturation in explaining difficulties in adult L2 acquisition.

Some have suggested that adults are not willing to surrender their ego to the extent that is required to adopt a new language. For example, Guiora (Guiora, Brannon, & Dull, 1972) introduced the concept of language ego, which is conceived of as a maturation process and refers to a self-representation with firm boundaries.

Because children's egos are dynamic and flexible, they can assimilate native-like speech in any language, and a new language does not make a significant threat or inhibition to the ego (Brown, 2000). Flexible ego boundaries tend to promote

empathy and the ability to take in another language and culture (Ehrman, 1999). However, the simultaneous physical, emotional, and cognitive changes of puberty cause a defensive mechanism where the language ego becomes protective and defensive (Brown, 2000). The language ego sticks to the security of the native language to guard the fragile ego of the young adult (Brown, 2000). The use of a new language may provide a sense of shame which results from fear of appearing comical and making mistakes. On the other hand, children are less conscious and aware of language forms and the possibility of making mistakes in an L2 (Brown, 2000). Therefore, they are less frightened.

Krashen (1992) hypothesized the relationship between an affective filter and the age factor. When learners are unmotivated and feeling anxious, the affective filter is up. On the other hand, when learners are not anxious about the possibility of failure in learning an L2 and consider themselves to be members of the target language group, the affective filter is down (Krashen, 1992). Krashen (1992) hypothesized that children have a lower affective filter than adults. Therefore, older people acquire progress quickly in the early stages because of gaining more comprehensive input, whereas younger people learn better in the long run (Krashen, 1992).

Another affective factor is the attitude toward the target language. Young children, who are not cognitively developed enough to form specific attitudes toward races, cultures, and ethnic groups of people, may be much less affected than adults (Brown, 2000). As children are less conscious about and have less bias against races, languages, cultures, etc., they can relatively easily accept the person who they meet and what they see and hear. Children are more motivated to communicate with native speakers and integrate culturally into the society (Ellis, 1994).

Schumann (1975) stated that children tend to be influenced by their parents in their attitudes toward the target language. If parents have some bias against the target language, they might have the same feelings. If parents encourage them to

learn an L2 or praise their success in acquiring an L2, they may have positive attitudes toward the target language, and their language ability may improve.

Furthermore, Brown (2000) explained that peer pressure was an important variable in considering the age factor. Children tend to have strong constraints upon them to conform to. They feel that they should be like the rest of the children. "Such peer pressure extends to language" (Brown, 2000, p. 66). On the other hand, adults may tolerate and accept linguistic differences more than children. Affective and social factors, however, might vary depending on the context by which learners are surrounded.

Most research on affective and social factors has been done in Canada and the United States, where people need an L2 for their social life. Although these results may not directly apply to the case in EFL, it might offer some suggestions. When it comes to EFL, research in psychology could explain what is happening in children when they learn a foreign language. For example, in the area of motivation, Harter (1981), Lepper, Sethi, Daldin, and Drake (1997), and Sakurai and Takano (1985) found that when it comes to elementary school pupils their intrinsic motivation for general learning decreases with age, although with slight differences among them. Carreira (2003) also found Japanese elementary school pupils' intrinsic motivation for learning English declines with age. It might be natural to think that elementary school children become more eager to learn a foreign language as their ages increase, but the research results do not necessarily support such an idea. In order to understand children's affective and social factors, SLA researchers should pay more attention to research on children in developmental psychology and psychology of learning.

SLA as Multifaceted Phenomena

When children get adequate L2 input in their early days, their L2 may be lateralized to the left side along with their L1

(Genesee et al., 1978). That is, only in the case where children get enough input can they acquire an L2 relatively easily. This is not true in an EFL situation. It can only be said that in an EFL situation, only minimal L2 learning by young children might facilitate additional learning at a much later date (Carroll, 1980; Penfield 1965).

When an L1 and an L2 have almost the same parameters, even adult L2 learners can learn an L2 relatively easily. When an L1 and an L2 have different parameters for the most part, L2 learners find it difficult to make use of L1 parameters and may have difficulty in resetting new parameters. That is, parameters that are similar between an L1 and an L2 are easier to learn than parameters that are different. The critical period might be higher in learning an L2 that has parameters similar to an L1. It follows from what has been said that the combination of an L1 and an L2 may affect the critical period of an L2. In interpreting existing studies, we should pay attention to the linguistic relation between an L1 and an L2. For example, the research results obtained from EFL study in Holland on Dutch and English as an L1 and an L2, which share most parameters, cannot be directly applied to EFL in Japan.

Some researchers (Felix 1987; Krashen, 1975; Rosansky, 1975) have stated that the arrival at the cognitive stage of formal operation beginning around puberty must be the close of the critical period for an L2. Others (Ausubel, 1964; Cummins, 1983; Ervin-Tripp, 1974; Taylor, 1974) have stated that L2 learning is promoted by cognitive maturity based on an L1 in context-reduced and cognitively demanding situations. It can be said that cognitive development affects language learning both positively and negatively. As children grow, the less predominant UG becomes, and the more influential cognitive development becomes. It is natural that the method of teaching English is rather different between lower graders (6–7 years old), who can reset parameters, and higher graders (11–12 years old), with higher cognitive development.

Generally, in affective and social terms, children seem to have an advantage over adults in learning an L2. However,

affective and social factors may be influenced by the context by which learners are surrounded. Most research on affective and social factors has been done in places where an L2 is required for social life. The distinction between L2 and EFL learning contexts raises important issues to be kept in mind in interpreting existing studies.

Conclusion

Lateralization seems to have some influence on the critical period for language acquisition. Exposure to an L2 in childhood reactivates their right hemisphere in learning an L2 at a later stage. The linguistic relationship between an L1 and an L2 may influence child second language acquisition. It can be said that cognitive development affects language learning both positively and negatively. In affective and social terms, children seem to have an advantage over adults in learning an L2. Because affective and social factors may be influenced by the context by which learners are surrounded, it is important that we should pay attention to the distinction between L2 and EFL learning contexts.

Thus, child second language acquisition, depending on various factors, such as the amount of input, the relation between an L1 and an L2, the learning contexts, and individual differences, is complicated. It is not possible to accept the view that children are in all aspects superior to adults or vice versa. Existing studies cannot be directly applicable to the case in Japan. Before introducing English as a formal subject, more research on child second language acquisition, cognitive development, and affective and social factors should be done in Japan.

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