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Research Article

The Effect of Age of Acquisition and Language Mode on Bilingual Lexical Access , Acquisition, Semantics, and Cognitive Development

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Abstract

In this study , the researcher examines and investigates the influence and role of the age on the acquisition of second language in it most important levels such as : language mode, bilingual lexical access , acquisition, semantics, and cognitive development.

This study is divided into two chapters . In Chapter one the researcher gives the reader a brief introduction about the study ; the study problem , the aims of the study and the value of his study. In chapter two , the researcher has started by defining the core concept of his study such as language mode, acquisition , second language acquisition etc. also , the researcher highlight the effect of age of acquisition and mode in processing language .

In the conclusion , the researcher gives the reader an idea about what did he conclude and the results of his study.

Key words : language mode , bilingual lexical access , age effect , acquisition and second language.

Chapter One

Introduction

1.1 Statement of the Problem

A lot of people try to learn or acquire another language during their life . Many of them have tried and succeeded b but unfortunately some have not got the opportunity to acquire second language for many reasons and constraints especially their age. Singleton and Ryan (2004 : 61) mention that any teenagers or adults who begin learning a second language may struggle to acquire fluency, while children who are introduced to a second language at a young age seem to be native speakers . Furthermore, as language learners begin learning a foreign language, their surroundings play an important role. This theory can be reinforced by the fact that when children are immersed in a foreign language, they seem to be engaged in an efficient manner in learning the new language .

There is also a period called critical period which is the subject of controversy and wide debate in linguistics and language acquisition. The effect of age of acquisition and the hypothesis of revolves around the correlation of the ability to acquire language with age, from a biological point of view.

Hu (2016: 2164) points out that many scholars hold opposing viewpoints and doubt whether young learners are better at learning a second language than older learners. Krashen et al. (1979) draw from the research literature to suggest that the older is quicker, but the young is stronger, based on the proposed logic.

According to the critical period hypothesis , the first few years in a person's life are among the most important years in which an individual can acquire the (first) mother tongue, according to the presence of appropriate incentives. If the linguistic input does not exist until after these first years (the critical period), then the individual will never reach the level of complete control or complete mastery of language, especially in grammar. Some writers suggest a "sensitive" or "optimal" period rather than a single critical period, others question the causes (physical maturity, cognitive factors). The duration of the period varies greatly under various considerations.

In Second Language Acquisition, the strongest evidence for the age and the critical period hypothesis lies in the study of dialect (or accent), in which most of the older learners do not reach the level of native speakers. However, under certain conditions in which a dialect similar to the original was observed, these observations indicate that the dialect is influenced by multiple factors, such as identity and motives, rather than by the obstacle of the critical biological period.

This study tries to answer the following questions :

1. Is there a particular age or a critical period for language acquisition in linguistically rich and what is its effect on bilingual lexical access?
2. Does the acquisition of language and language mode after a particular ages become more difficult and more effortful in bilingualism ?
3. To what extent it is possible to suggest a "sensitive" or "optimal" age and language mode on bilingual lexical access or acquiring second language ?

1.2 Aims of the Study

The researcher in this paper aimes at :

1. Explaining whether or not there is a particular age or a critical period for language acquisition in linguistically rich and what is its effect on bilingual lexical access.
2. Examining whether or not if the acquisition of language and language mode after a particular age becomes more difficult and more effortful in bilingualism .
3. Finding out to what extent it is possible to suggest a "sensitive" or "optimal" age and language mode on bilingual lexical access or acquiring second language.

1.3 Value of the study

The importance of this study lies in that it show how age is a vital , effective and essential factor in the process of acquiring another or second language and language mode on bilingual lexical access or acquiring second language , especially in the pedagogical institution to help these institution improve and encourage people in certain age to acquire another or second. Also, the study of the effect of age on second language acquisition is extremely important in our country's English classrooms. Some academics believe that mastering and applying a language requires continuous learning.

This study also is aimed to show is it true that young people learn faster than older people while learning a second language? Is there anything else that influences the success of second language learning, aside from age? Are there any pedagogical considerations for foreign language teaching that should be taken into account after discussing the importance of age factors?

Chapter Two

Definition of the Core Concepts of the Research and the Constraints of Age on the Acquisition of Second-Language

In this chapter , the researcher gives definition of the core concepts of the research and the factors that can influence the acquisition of second language (SLA) are explained and elaborated . There are many general factors that influence second language learning as age, motivation , intelligence , cognitive style and personality but the most important is the age . The purpose of this chapter is to explain the role of age to failure or success in the acquisition of second language.

2.1 Explanation of the Core Concepts of the Study :

- **Language Mode**

Yu and Schwieter (2018: 9) mention that " Grosjean (1998) proposed and developed a notion of language mode which refers to the state of activation of the bilingual's languages and language processing mechanisms at a given point in time. In other words, language mode concerns the degree of activation of the two languages in a bilingual's mind". Yu and Schwieter (2018: ibid) mention that Language mode is concerned with environmental factors, but participant characteristics such as language proficiency and superiority can influence the degree of language activation. During word reading, language mode has an effect on bilingual lexical access. Language mode has a significant impact on bilinguals' language development. Since language mode is so sensitive to a variety of factors, creating a strictly monolingual environment takes a long time, making travel along the language mode continuum relatively simple.

In this respect Dun and Fox Tree (2014 : 611) argue that "although there was no interaction between language mode and bilingual dominance, language mode can be made clearer when bilingual proficiency is controlled."

- **Bilingual Lexical Access**

De Groot (2011:146) mentions that bilingual lexical access is as a branch of psycholinguistics that investigates how bilingual people activate or retrieve their mental lexicon. It encompasses all facets of word processing, including all mental activity that occurs between the time a word from one language is interpreted and the time when all of the target language's lexical information is accessible. Bilingual lexical access is "the mental process that underlies this seemingly simple task: the process that makes the connection between the idea of a dog and the word dog in the target language. While activating the English word dog, its Dutch equivalent (hond) is most likely also in a state of activation."

Dijksta (2005: 182) explains that there are two major theories about lexical access for bilinguals, according to the author. Language Selective Access and Language Non-Selective Access are the two options. These theories aim to understand the lexical activation and selection mechanism and phases. The aim of these hypotheses is to see whether lexical candidates from different languages with similar lexical features are triggered when a word is spoken. Is the English word pork activated when the Dutch word job is activated, for example? If the response is "no," it may mean that language selection occurs before a word is recognized, and only the target language's lexical information is selectively activated, in which case lexical access is language selective.

- **Acquisition**

Field (2004: 3) define acquisition as "the process of developing competence in a language. The term is used for infants acquiring their native language (first language acquisition) and for those learning a second or foreign language (second language acquisition)."

- **Cognitive Development**

Miller (2016: iv) mentions that cognitive development theories attempt to describe the complex mechanisms by which human minds evolve and alter from infancy to old age. Memory, reasoning, spatial processing, problem solving, vocabulary, and perception are all examples of cognitive abilities.

Field (2004: 213-214) mentions that Piaget proposed that cognitive development could be divided into four stages. They reflect a progressive progression in which previous stages are cyclically revisited. The age at which a child passes through each stage differs significantly. The linguistic production of each stage has ramifications.

1. "Sensori-motor (0–2 years) ":

The child learns to recognize the permanence of objects (the fact that an object still exists even when it is not in view). This is a requirement for the development of concepts (including lexical concepts). It's possible that a dawning sense of object permanence is what prompts the child to name objects and causes the 'vocabulary spurt' around the age of 18 months. The first relational terms indicate object permanence as well, with those indicating presence appearing before those indicating absence (‘ALL GONE'). The roots of a child's language are basic cues (a bottle denotes eating) and then indexical relationships. Primary words are used for symbolic reference (DOGGIE refers to a particular dog that is present), but later words gain symbolic meaning (‘doggie' refers to a dog breed). The child's creations may demonstrate a limited spatial awareness and awareness of means–ends (the word MILK gets the child a drink).

2. “Pre-operational (2–6 years) ” :

The child's actions reflect egocentric thinking: it is unable to connect with other people's perspectives. The child's vocabulary develops from echolalia (repeating the words of others) to monologues (speaking aloud what would normally be private thoughts). It can participate in group monologues with other children, in which participants tend to take turns but express their own ideas without being asked.

3. “Concrete operational (7–11 years) ” :

The vocabulary of the child is organized into hierarchical categories. It shows signs of decentration, or the ability to understand various aspects of a physical issue, and develops the principle of conservation (the understanding that size or quantity is not dependent on the container). It learns to obtain and react to ideas from the outside world.

4. “Formal operational (11–15 years) ” :

The adolescent develops the ability to reason abstractly. It learns to construct its own argument systems, can represent hypothetical scenarios, and engages in problem-solving both mentally and verbally.

2.2 Constraints of Age on the Acquisition of Second-Language (SLA)

Yule (2020 :188) explains that there may be an acquisition barrier of a different nature even at this proposed optimum age for L2 learning. Teenagers, on the whole, are more self-conscious than younger children. If there is a strong element of refusal or humiliation in attempting to produce the various sounds of another language, it may outweigh any

Khasinah (2014 : 261) mentions variables elements and factors which have varying effects on second language learning. Individual differences must be acknowledged as important factors in second language acquisition. Furthermore, these elements seem to be an important part of the learning process, which can influence a second language learner's success or failure . Among these factors is the age .

Khasinah (2014: ibid) also explains that of one the variables that affects second language learning is age. It is widely assumed that children learn languages more quickly than adults. Only research performed in naturalistic learning environments, however, provide evidence to support this assumption. Lenneberg's critical phase theory argues that there is a period in a child's development when language acquisition is easier than at other times. The critical phase, according to him, lasts until puberty and is caused by biological growth. He goes on to say that language learning can be more difficult after puberty due to a lack of skill and adaptation in the brain. Other studies have found that learners who begin learning a foreign language as children develop a more native-like accent and are better at grammar Many who begin as adolescents or adults have a more difficult time learning. In contrast, study conducted in formal learning settings yields the opposite outcomes. Adults tend to be stronger in both syntax and morphology in classroom learning, whereas teens are the best and advance the fastest. Ellis compiled a summary of the studies on the age factor.

The starting age has no bearing on the SLA route, but there is a connection between the rate of learning and the learners' age. In terms of grammar and vocabulary, adolescents learn faster than adults and infants. While young learners do not learn as

quickly as older students, they are more likely to achieve overall success as a result of their increased exposure to the language. He also offers several reasons for the study's findings. The studies refute the critical time theory, which claims that children will learn a language naturally and without effort before they reach a certain age. The starting age is only relevant in terms of pronunciation, which is consistent with Selinger's (1978) argument that several critical times are possible. The disparities between children and adults in terms of their ability to learn a language are highlighted by cognitive explanations. When older learners use the language, they are able to apply linguistic guidelines. Children cannot refer to language as a form because it is a tool for communicating meaning to them. The reason may also be found in the learners' emotional states.

Children are more inspired to learn than adults because they want to be accepted by their peers. The aim of the studies looking into the age factor was to figure out what is the best time for the processes of foreign language learning. It should be noted that each age has advantages and disadvantages in the learning process, and the decision as to when to begin learning a foreign language is dependent on the learner's situation. Students of all ages are taught, and it is the responsibility of teachers to use effective approaches to meet the needs of each age group. To summarize, language development is easier at a younger age, but adults are better at learning language rules and structures.

Khasinah (2014: ibid) also mentions that Reid (1987) explains that there are four different types of learning modalities: visual (seeing), auditory (listening), kinesthetic (moving), and tactile (touching) (touching). Visual learners learn by looking at things. They would rather see an instructor during a lesson and learn through images such as photographs, wall displays, graphs, and videos. They take notes and make lists to coordinate their thoughts during lectures. “Auditory learners learn through listening. They prefer verbal instructions, like dialogues, discussions and plays, solve problems by talking about them, use rhythm and sound as memory aids. Kinesthetic learners learn through moving and doing. They learn best when they are active”. They find it difficult to sit still for long periods of time. Tactile learners pick up information by touching it. They express themselves by writing and drawing. Hands-on experiences such as experiments and demonstrations help them learn more effectively. Learning styles are affected by other learner variables, making measurement difficult. Learning styles do not appear to predict L2 performance, but they do reveal the most efficient method for achieving the best results. Students are more likely to excel in SLA if they are conscious of their learning style, are highly motivated, and have a positive attitude.

2.3 Definition of Critical Period Hypothesis

Davies (2005 : 26) states that critical period theory is “the hypothesis that states that there is a stage in normal human development from childhood through puberty to adulthood which is critical or sensitive, meaning that it is at this point that, physically and mentally, the child changes into the adult”.

In this respect, Davies (2005: ibid) also mentions that this is especially true of sexual characteristics, as well as, it is argued, cognitive growth, which alters the way people learn. This means that after the critical time, language learning must be SLL, since first language learning is dependent on learning mechanisms that only work prior to puberty. It is claimed that, based on this hypothesis. It is claimed that after the critical time, it is impossible to become a native speaker of learning second language .

In the same vein, Birdsong (2005: 111) defines critical period as “the temporal span during which an organism displays a heightened sensitivity to certain environmental stimuli, the presence of which is required to trigger a developmental event ” .

Likewise, Trask (2007 : 62) states that critical period hypothesis is “ the hypothesis that a first language can only be acquired during the first few years of life. Young children learn perfectly any language to which they are adequately exposed, and they do this without explicit teaching. Few adults can perform the same feat” .

In addition, Yule (2020 : 334) defines critical period theory as “the time from birth to puberty during which normal first language acquisition can take place ” .

Richards and Schmidt (2010:134) explain that critical period theory “ the period during which a child can acquire language easily, rapidly, perfectly, and without instruction. In Lenneberg’s original formulation of the critical period hypothesis, this period was identified as ranging from age two to puberty ” .

2.4 The Views that back and support the Critical Period Hypothesis

Deng and Zhu (2016 : 119) state that “some scholars that support the Critical Period Hypothesis for second language acquisition such as Oyama, Coppieters, and Patcowski (1978) have drawn relatively specific conclusions toward the age factor”. Deng and Zhu (2016: ibid) also state that “they believe the hypothesis that the children who start to learn second language early will finally reach higher levels than the adults who start late has some supporting evidence but does not have any empirical disproof” .

Deng and Zhu (2016 : ibid) mentions that after summarizing several experiment reports related to foreign language learning, Krashen (1982) comes to the same conclusion. Johnson and Newport's study from 1989 is widely recognized as the best proof of the Critical Period Hypothesis in the field of second language acquisition. Johnson and Newport agree in their study that the crucial time for second language acquisition is two years .

Furthermore, Deng and Zhu (2016 : ibid) mentions that they believe that after the age of six, people's abilities begin to deteriorate. The findings are based on a comparison of 46 Chinese and Koreans of various ages who are beginning to learn English as a second language. As a result, Johnson and Newport discovered that the test takers' age is a critical factor in their success. Later, Johnson (1992) experimented with different types of writing and discovered that the English level of test takers who immigrate to America before the age of seven shows no noticeable difference from natives, while the level of those who immigrate after the age of seven shows a declining trend as they get older. It's worth noting, however, that this study also discovered that the degenerative stage of language learning starts at the age of seven, rather than the age of adolescence as Lenneberg said. This means that, although the critical time occurs, determining when it starts is a difficult task. Patkwosky (1980) discovered that it is possible for the crucial time for second language learning to be extended. He discovered that learners under the age of 15 are better at syntax than those who are exposed to language after the age of 15. In Patkwosky's final conclusion, age is the most notable factor that affects the performance of second language learning among all the factors he examined in his study. The findings of this analysis are almost entirely consistent with the Critical Period Hypothesis (p.119) .

Deng and Zhu (2016 : ibid) also mentions that Christine Weber Foxhe and Helen Neville used a mixed behaviorism and event-related potentials approach to document and compare the brain electrical activities of Chinese-English bilinguals who understand English sentences in their native tongue. They believe that the critical time for certain language awareness learning is before puberty, while others may be at different levels, based on the results of the experiment. As can be shown, there are several different types of critical times, not just the critical time for language acquisition. So, according to previous research, there is a crucial time for learning a second language. Learning a language after the critical time is particularly difficult. Adults with certain learning disabilities can learn a second language effectively.

2.5 Evidence of the influence of age

Collier (1987 : 7) state that “It is clear that age (or age-related factors) is a major variable in the acquisition of a second language for school. In the early stages of acquisition, older students are faster and more efficient than younger students”. Also , Collier (1987 : ibid) argues that the students who are older than others benefit from cognitive growth of their first language, which aids in the acquisition of school skills in the second. Adults lose this early advantage after the first year, but older children and teenagers retain it for the improvement of their second language skills. Adolescents who have passed puberty are more likely to keep their second language accent. Otherwise, they are capable of mastering a second language fully. Since they have certain first language skills, students in the 8-12 age group on arrival could be the most advantaged acquirers of school skills in the second language when only schooled in the second language.

They still have time to make up for missed academic years when learning the basics of a second language and starting to learn school skills in the second language. Even though teenagers can quickly pick up second language school skills, they have less time to easily make up for missed academic years. It's worth noting that as the learner gains proficiency in the second

language, the influence of age diminishes. Generally, differences are discovered within the first five years after arrival. Language minority students in any form of program take at least four years and as much as eight or more years to achieve native speakers' level of school language proficiency, depending on age at arrival, type of school program, sociocultural factors, and the individual characteristics of each acquirer of second language.

Dong and Ren (2013: 3-4) point out that the phonological, morphological, and syntactic domains all show a decline in L2 acquisition ability with age. In terms of phonological domain acquisition capability decline, Oyama (1976) looked at 60 male immigrants who had arrived in the United States between the ages of 6 and 20 and had lived there for between 5 and 18 years. In two 45-second excerpts from success on a reading-aloud test and a free-speech task, she asked two adult native speakers to assess the nativeness of the learners' accents. Oyama discovered that although child arrivals performed within the range of native-speaker controls, those older than 12 did not, and those who arrived earlier than 12 had accents.

According to this report, Dong and Ren (2013: ibid) also mention that learners' ability to learn phonology in a second language decreases as they get older. In order to find evidence of morphological domain acquisition capability decline, Harley (1986) looked at the rate of achievement of two age groups of students in the acquisition of the French verb system in Canada. Interviews, a story repetition task, and a translation task were used to collect data. Harley discovered that after both groups had obtained 1,000 hours of instruction, neither had fully mastered the verb system; however, the older group had lower levels of mastery of the verb system at the end of their schooling. In the morphological domain, the results show that L2 acquisition ability decreases with age.

Dong and Ren (2013: ibid) also mention that Johnson and Newport (1991) looked into the syntactic proficiency of learners at various ages after arriving in the L2 country. The students' ages ranged from 3 to 39 when they arrived.

These individuals were asked to assess the grammatical correctness of 276 spoken sentences. According to Johnson and Newport, there was a gradual decline in syntactic output with age of arrival, which lasted past puberty and peaked at ages 14-16.

According to the findings, learners' abilities to learn L2 syntax decline as they get older. As a result, L2 acquisition, whether measured by initial rate of acquisition or ultimate attainment, will be influenced by the age at which learning starts.

Inability of acquisition during the essential and responsive periods, as well as evidence of age-related declines in acquisition capability in the phonological, morphological, and syntactic domains, support the Maturational State Hypothesis. Researchers suggest various explanations for age effects from various perspectives.

Conclusion

This study shows the fact that that age of acquisition has a great role in SLA and also young people learn faster than older people while learning a second language. Also, this study shows that there is nothing else that influences the success of second language learning, aside from age. Furthermore, this study shows that there is a pedagogical considerations for foreign language teaching that should be taken into account after discussing the importance of age factors.

The study also concludes that when bilinguals perform a task entirely in one of their two languages, they access all possible candidate words based solely on initial phonological information consistent with any entry and independent of the specific language, as long as the irrelevant language is learned early. Language mode's function was limited to enhancing the inter-lingual activation elicited in bilinguals.

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