

Second Language Acquisition and Age Factors

By Sarah Smith

Hola. ¿Como estas? ¿Que? ¿No, hablas espanol?

Bonjour. Comment allez-vous ? Que, ne parlez-vous pas français ?

Hallo. Wie geht es Ihnen? Was, sprechen Sie nicht Deutsches auch nicht? Fein auf englisch dieses mal.

Hello. How are you?

It's a simple phrase. Why is it then, that many people would not have understood any of that? Bilingualism is the answer to that. Why aren't all people bilingual? How come some people can pick up another language easier than others? Why is it that the immigrant that needs English for a job cannot master the language as easy as their children playing with their friends? If it is such an important thing, why is it not taught in public schools consistently?

The ability to learn a second language is something most adults take for granted. When a person's mind is most readily open to learning another language, they most often do not feel the need for the knowledge and hence don't learn it. By the time they are adults and realize the opportunities being bilingual presents, it is literally harder for them to learn.

To understand learning a second language, one must first understand a few other things. First, why is it important to learn a second language? Why not just establish one universal language? Second, how does the child's mind learn its first language? Thirdly, what does age have to do with learning another language? After all these factors are considered, one may finally see the entire world of second language learning.

I started my research on second language acquisition trying to prove through various studies that children should be taught a second language in grade school. After finding some studies, I sort of changed my goal to trying to find an actual critical period age. The critical period, or as it is called in a lot of the studies, the CP or CPH, which is just critical period hypothesis, is simply the idea that there is actually an age. A CPH is just a theory about at what age second language learning becomes more difficult. Trying to find an exact age was very hard. Every study had a different CPH and most of them weren't really close together. I then began to find studies not about what the actual age was, but theories about why there is an age. Although my research shifted and the question I was trying to answer changed from what is the age to why is there an age, my paper is still saying that children should be taught a second language earlier because it is easier for them.

There are many different goals for learning and teaching a second language. First and most obviously is to foster the ability to communicate with persons of other languages. Going along with that is the appreciation of other races and cultures. Some teachers teach second languages with the belief that being bilingual increases their students' self-awareness and maturity. Many literary enthusiasts feel that knowing another language increases appreciation of serious literature. But the number one goal of teaching languages is brain training. Brain training has been proven to not only better people's logical thinking skills, but it has shown that people who know more than one

language usually think more flexibly than those who only speak one language as R.G. Landry's research showed (qtd. in Cook: 5).

Vivian Cook, a linguistic researcher, defines a second language as "a language acquired by a person in addition to his mother tongue." She also argues that although they are similar, learning your second language is not the same as learning your first. As another noted linguist M.A.K. Halliday said, learning a first language is "learning how to mean," but when learning the second language, the student already knows how to mean.

Now that you have the general idea of second language learning, let's look a little at how a child learns its first language.

Attention is brought to a study called process limitations. Brown and Fraser's work published in 1963 provides evidence in process limitations that shows that the length of a child's imitations of an adult's words remain the same length no matter how much the adult says (qtd. in McLaughlin: 21). It also showed that the length of the responses were also about the same length as the child's own spontaneous speech. This led the researchers to the conclusion that there is some kind of processing limitation that says the length of thoughts that a child can comprehend to speak. As the child gets older, this length increases and speech becomes longer and more elaborate.

Further studies by Bloom agreed with this hypothesis when testing how young children process negatives in their speech. It was seen that words were deleted to make room for the negative (qtd. in McLaughlin: 21-22). A child would say, "Mommy like soup." And then, "Daddy no soup." The word 'like' is removed from the second sentence to keep it at the same length as the first which coincides with the theory that there is only so much a child can process in its speech at one time.

The critical age for language learning is thought by some scholars to be between the ages of 2 and puberty. Before the age of two it is impossible because of different maturational problems and after puberty is more difficult because of a loss of cerebral plasticity which is a result of cerebral dominance due to lateralization of the language function. Basically this means that the mind has physically and emotionally matured and simply isn't open to new things in the area of language (McLaughlin: 46).

Wilder Penfield argues that this happens at the age of nine though, and the critical learning age ends there. Penfield backs up his theory with evidence of children being able to relearn languages after severe injury or head trauma much quicker than adults with the same injuries.

Neither these specialists nor any other experts in the field who support their findings argue that it is impossible to learn another language later in life; they just say that it is physically more difficult. This can be backed up by three different studies. First, in 1969 Asher and Garcia tested 71 Cuban immigrants that had been in the United States for about five years. They found that the younger they were when they entered the country and began speaking English, the more their pronunciation was that of natural English speakers. Oyama in 1976 did the same experiment on 60 Italian male immigrants and found the same results. As did Fathman in 1975.

Even though their studies focused more on accents and pronunciation than on the actual knowledge of the language, learning to speak without an accent is still learning how to speak.

I think the point of why children learn languages faster is best driven home by a collection of studies from 1965-1974 (Asher, 1965, 1969; Asher, Kusudo, and de le

Torre, 1974; Asher and Price, 1967; all qtd. in McLaughlin) This study shows that children learn faster than adults because their learning often goes hand in hand with physical actions. They have to comprehend the language in play and school environments in order to be able to execute the required actions. Meanwhile, adults tend to learn without physical responses which lessens the motivation to learn.

In the book “Second Language Acquisition and the Critical Period Hypothesis,” editor David Birdsong says that “CPA states that there is a limited developmental period during which it is possible to acquire a language, be it the first or second language, to normal, nativelike levels. Once this opportunity is passed, however, the ability to learn language declines.”

In that book, which is based on a few Association of Acquired Linguistics meetings, he brings up the idea that there is no single CPH, but all the theories assume the general idea that a non-nativelike endpoint is in store for late language acquisition. Although specific age is never mentioned in regards to the critical period, he brings up many main theories on the CPA including Loss of Neural Plasticity in the Brain, Loss of the Language Learning Facility, the Use It or Lose It theory, and Maladaptive Gain of Processing Capacity with Maturation.

Loss of Neural Plasticity in the Brain refers to a physical maturation in the brain. Because of the progressive lateralization of cerebral functions and ongoing myelination in Broca’s area and throughout the cortex, the neural substrate needed for language acquisition is no longer fully available after the end of the critical period. This is saying that as you grow, there is lateralization, which pretty much means there is just a shifting of where the different functions of the brain are located. And then there is myelination in the cortex which is the outer layer of the brain. Myelination is the forming of a sheath. So this whole theory says that things are moving around in the brain and it is getting a myelin coating around it. This was a theory first proposed by Penfield and Roberts in 1959, but not popularized until 1967 by Lenneberg.

Loss of the Language Learning Facility also in a way refers to physical change in the brain. The ending of the critical period is at the loss of UG. (UG is the part of the brain that basically instructs the brain on how to comprehend and absorb language grammar.) The loss of UG is the loss of the natural learning strategies that are assumed to be very specific in learning languages. This includes the Subset Principle which is what instructs the brain on storing the most conservative grammar coinciding with the linguistic input. These aforementioned components are vital to the learner’s ability to absorb a language. Losing them ends up basically guaranteeing that the learner will never reach a native like level. The Fundamental Difference Hypothesis by Bley-Vroman in 1989 blames the final points of first language and late second language acquisition to this lack of access to UG and the related learning principals.

The Use It or Lose It theory compares the brain to a muscle. Basically, the language learning “muscle” atrophies after a decent period of time without being used. This time period is also never specifically declared. Bever’s 1981 study found that for any linguistic acquisition to take place the two systems, speech production and speech perception, must be working simultaneously. With a lack of use however, the two systems become more and more different and work independent of one another, with speech perception becoming the stronger of the two. Bever quotes, “So long as one is continually learning a new language the systems of production and perception never

become fully autonomous [...] That is, continuous acquisition can stave off the independence of the systems and therefore delay the apparent [end of the] critical period.” (Bever, 1981, p194)

The theory I personally agree with the most is the Maladaptive Gain of Processing Capacity with Maturation. This basically says that as you grow older you look at things differently and this perception affects your learning. When you grow, your ability to process any linguistic input also grows. Newport in 1990 stated that a cognitive immaturity, not maturity, is the best for second language learning. A child’s relatively short term memory capacity lets them initially absorb less. An adult’s larger memory capacity allows them to extract more of the input, but then they are “faced with a more difficult problem of analyzing everything at once.” As stated in Newport’s 1991 findings.

For example, if I was in front of a class of grade schoolers learning Spanish and said, “Sientense y abren los libros a la pajina diez,” the child’s mind would lead them to think, “Awesome, I know that libro means book. So she said something about a book and page ten. She must want us to open our books to page ten. And why would we do that standing up?” The child would then proceed to sit down and open their book to page ten, which is exactly what I had asked. An adult on the other hand, would not think that way. Because of the maturation of their brains, they would be more likely to focus on the exact words. They would become so hooked on the fact that they didn’t know what ‘sientense’ and ‘abren’ meant, that they would not be able to just identify the words they did know and infer the meaning of the sentence as a whole like a child would do.

One of the reasons I find this theory to be the one I agree with the most is the multiple times it has been tested and withstood all trials.

Newport and Goldwosky in 1993 also found the benefits of starting younger in relation to this theory. Elman in 1993 found evidence supporting his model starting with limited memory that undergoes a maturational change (increases in mental capacity.)

In 1995 Meier found that, “The language acquisition capacity remains intact, but as children mature beyond the ages of four or five its function is impeded by the child’s increasingly sophisticated cognitive abilities.”

In the above and all other theories, there are many variables that have to be taken into consideration for nonnativelike outcomes including variations in the amount and the type of target language, pressures of psychosocial nature, and the learner’s motivation to learn and their attitude towards assimilating with that language’s culture.

There is one case noted by the Association of Applied Linguistics as contributing the most to second language acquisition studies that I find personally interesting. This was a case in 1989 by Johnson and Newport. In their study they took 46 Korean and Chinese learners learning English as their second language. All of them had lived in the United States for at least five years, but the age at which they were exposed to the language (AOA- Age of Arrival) varies. The participants were asked to grammatically judge 276 English sentences where about half of them were wrong. Sentences were played and the participants would have to circle ‘yes’ or ‘no’ as to the correctness of the sentence. There were three types of grammar tested. 1) Verb Morphology which is the difference between, “Every Friday our neighbor washes her car.” And “Every Friday our neighbor wash her car.” 2) Irregular Noun Placement, which would be choosing between, “Two mice ran into the house this morning.” And “Two mouses ran into the

house this morning.” 3) Particle Placement which finding the correct form between, “The horse jumped over the fence yesterday.” And “The horse jumped the fence over yesterday.” Their results were inconsistent in relation to their AOA, but were consistent with the thoughts of CP in relation to neurocognitive developmental factors and their favorable effects on children and their disappearance with maturity. These results were tested and confirmed by Patowski in 1980.

The combined studies by Johnson and Newport and Patowski are still held above all the rest as some of the best second language acquisition evidence yet.

Another issue looked at by the Association of Applied Linguistics is the rate of nativelike achievement. This is the learner’s ability to have an endpoint that is at the level of a native speaker of that language. Patowski’s 1980 study found only 1 of 34 late learning participants performed within a native speakers range. Johnson and Newport in 1989 had none. Coppieter’s 1987 study had none that even came close. The three of these studies show that a late learner has a far, far less of a chance to ever learn their second language to the same capacity of a native.

Although I did not find what I had originally set out to find, which was the actual critical period age, I feel that what I ended up finding and trying to prove was better. Simply looking for an age just scratches the surface of second language acquisition. Finding and understanding the theories about the reasons for a critical period age went deeper into the topic. Being able to understand theories like maladaptive gain of processing capacity with maturation and loss of neural plasticity in the brain are things I will never forget. And being an English Education major wanting to teach high school, these are things that will be useful to me later in life. If I have a student in one of my classes who speaks English as their second language, I will be one of the few teachers that would understand why they are not picking up the language as quickly as others.

My research did prove the question I set out to prove. In this ever growing world we live in, it is important for people to be bilingual for social and economical reasons. If we ever intend for everyone to be able to understand each other, children need to be taught a second language early on in their lives. It is physically and emotionally easier for them to learn at this time.

El bilingüismo es la llave al éxito.

Le bilinguisme est la clef au success.

Bilingualism ist der Schlüssel zum Erfolg.

Bilingualism is the key to success.