

Early Bilingualism:

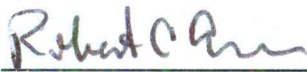
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Annotating Early Bilingualism: A Beginning

1. Summary

The purpose of this thesis will be to provide an annotated bibliography dealing with studies of early bilingualism. The thesis will focus on four questions relevant to this topic: what *is* bilingualism, what is the critical period for developing it, how does the bilingual brain work, and what can parents and educators do to support early bilingual children? Although much information exists about adult bilingualism, information about early bilingualism is much less common. Thus, this thesis will deal with the aforementioned questions about early bilingualism by providing an annotated bibliography. More specifically, the thesis will explore a number of specific topics, including the following:

- First, what are early bilinguals compared to late bilinguals?
- Second, is there any particular window of opportunity during which children can most easily learn a second language?
- Third, how does the early bilingual brain deal with second language learning?
- Fourth (and most important), if parents raise bilingual children, to what extent should they know about the available research concerning early bilingualism? If parents are not familiar with that knowledge, they may not be able to prepare how and what they will do to support their bilingual children's language development.

Not every bilingual child has the same fluency in each of his or her two languages. Early bilingual children are likely to choose a dominant language preference when they grow up and finally lose one of their two languages. This means that bilingual children

easily can become monolingual. Raising a bilingual child – and helping the child *remain* bilingual – is very challenging. Therefore, most of this thesis will explore the most important traits of early bilinguals and what recent research says parents and teachers can do to help their children become and remain bilingual.

2. Introduction: Early Bilingualism

Suyeon, a 4-year-old girl who has lived in the United States for four years, is a bilingual. She started to speak both English and Korean. Her parents are Korean-English bilingual, too. However, her parents speak mostly Korean at home. Nevertheless, Suyeon's dominant language is English rather than Korean. She reluctantly speaks Korean when her mother asks her to speak in that language. One day, Suyeon traveled to Korea to visit her grandmother. She stayed there for four months. At that time, she went to a Korean-speaking preschool. During this short stay, her ability to speak Korean grew greatly; on the other hand, she totally forgot how to speak English. When she returned to the US, she had to start to learn English from the beginning. It took a whole year for her to achieve her former competence in speaking English.

As this story shows, early childhood bilingualism is very vulnerable. Many people believe that a bilingual child learns multiple languages naturally and automatically. They think that the bilingual child easily achieves native-like equal fluency in each language. However, some researchers say that most bilingual children do not have equal proficiencies in both languages even though they do *learn* multiple languages very quickly. One of their languages is usually weaker than the other one. Then, when the bilingual child grows up, he or she undergoes attrition in the weaker language if he or she is not exposed to an equal amount of language inputs. Therefore, the crucial factor in

raising bilingual children is balanced bilingual language development. Linguist Carey Myles argues that ideally “a balanced bilingual [speaker] can probably read and write with equal facility in both languages...to cope in either language with almost any situation that is likely to arise”(16). Some bilingual children, however, are good at speaking in one of the languages, but they may not be experts at reading and writing in one of the languages. Some researchers say that correspondingly balanced language development in bilinguals is very rare. However, ideally, they should achieve fluency in speech equal in quality to success in their academic work. Equal or nearly equal proficiency in both at an academic level helps promote language retention. In order to understand as clearly as possible what it means to achieve balanced bilingual language development in early childhood (development that will help a child retain both languages), one needs to have some background knowledge about early bilingualism. This thesis will provide a handy overview of the kind of research that has been done about this topic and a convenient survey of the kinds of questions the research raises and attempts to answer.

3. Questions Concerning Early Bilingualism

1) What is bilingualism? Many people think that bilinguals perfectly use two languages in nearly equal fluency. According to *The Linguistic Society of America*, Guadalupe Valdés argues that some researchers have favored “a narrow definition of bilingualism and argued that only those individuals who are very close [in skill] to two monolinguals in one should be considered bilingual.” More recently, however, other researchers have argued “for a broad definition that views bilingualism as a common human condition that

makes it possible for an individual to function, at some level, in more than one language.”

The ability to use more than one language is thus considered by many scholars to be evidence of bilingualism, regardless of the degree of proficiency in each language. As the facts just discussed suggest, various concepts and definitions of bilingualism have been proposed. Carey Myles, for example, defines some terms of bilingualism in her book *Raising Bilingual Children*. Among the terms she defines are the following:

- **Balanced bilingualism** means that a bilingual speaker uses both languages with equal or nearly equal fluency in most situations (13).
- **Language dominance** means that a bilingual is apt to use one of the languages comfortably. Dominance of one language over another can change because of surrounding environments and over time (11).
- **Simultaneous bilingualism** is considered “the process of a child learning two languages from birth” (12).
- **Sequential (successive bilingualism)** means that a child learns successfully a second language after the child’s first language is learned (12).
- **Subtractive bilingualism** refers to a time “when a first language is in the process of being replaced by a new language” (12).
- **Additive bilingualism** means acquiring a second language without loss of a first language (12).

As these definitions show, there are many different notions of bilingualism. My special focus in this thesis will be on additive bilingualism -- that is, helping a child become a balanced bilingual in each language.

Another question raised by the study of bilingualism is this: **what are the distinctive traits of late and early bilinguals?** Early bilingualism involves learning multiple languages at an early age, while late bilingualism involves learning a second language in adulthood. Of course, the attempt to distinguish between “early” and “late” is controversial. For example, in an article in the *Journal of Cognitive Psychology*, Vrinda Kalia et al. argue that most research defines “early bilinguals” as children “who became bilingual very early (i.e. before age 5) in life and are equally proficient in both their languages” (701). Kalia et al. also define late bilinguals as persons who become bilingual after age 10. These distinctions lead to another question: Are early and late bilinguals different? It seems to be the case that in terms of brain plasticity, early bilinguals are more flexible than late bilinguals. This means that early bilinguals learn a second language more easily and quickly because they possess innate language acquisition traits. In contrast, for late bilinguals learning a second language is more challenging because they already have their first language entrenched in their brains. Thus, late bilinguals usually need to make more effort to learn a second language. Indeed, in an article in the *Annals of the New York Academy of Sciences*, Stephen D. Krashen contends that early bilinguals’ language development is analogous to the process of acquiring a first language, but this is not the case for late bilinguals (211). Krashen contends that language acquisition for early bilinguals often seems “automatic,” as if languages are acquired “naturally” and without formal instruction. In contrast, he argues that late bilinguals typically need to make “conscious and labored effort” if they hope to acquire a second language (212). Thus, it seems that fundamentally the learning language mechanism is different in early and late bilinguals.

Another key question raised by the study of bilingualism is this: **What is a critical period for learning a second language?** Some researchers contend that a critical period exists. This idea of a “critical period” refers to a time of acquisition of a second language when the brain is most capable of learning a new language. Some researchers argue that after the critical period has passed, it is hard for a person to achieve native-like fluency in his or her second language. Thus in an article in *Neuroscience*, Albert Costan and Nuria Sebastian-Galles argue that “critical (or sensitive) periods refer to periods of time in which brain structures are especially sensitive to a specific environmental input” (340). Costa and Sebastian-Galles contend that a critical period for exposure to a second language is before puberty. They mention that another common definition of the critical period is before a child is seven years old. In other words, before puberty, when a child is exposed to a second language, he or she can achieve native-like fluency, but after puberty, a person who learns a second language needs more effort to achieve native-like fluency because of maturational constraints. There are some different definitions of the critical period depending on the scholar defining that period. However, a common theory of the critical period emphasizes the importance of puberty. That is to say, the critical period providing a window of opportunity to learn a second language gradually decreases after puberty in terms of brain plasticity.

A third question raised by the study of bilingualism is this one: **How does the bilingual brain work?** Bilinguals’ and monolinguals’ brains are different. Bilinguals need to learn two language systems rather than one like monolinguals. In the article by Albert Costa and Nuria Sebastian-Galles already mentioned, the two authors examine how the bilingual experience sculpts the brain. They explore the effects of bilingualism on

- 1) language acquisition,
- 2) language processing, and
- 3) cognition.

Discussing language acquisition, Costa and Sebastian-Galles contend that “bilingual infants must learn two linguistic codes instead of one” (336). The two linguistic codes can be two sets of phonemes, lexicons, and grammatical systems. Also, Costa and Sebastian-Galles argue that establishing two language systems for bilingual infants is delayed because of a lack of input in each language in contrast to the fuller input in just one language received by monolinguals. Likewise, other language mechanisms differ in the case of infant bilinguals and monolinguals. For example, Costa and Sebastian-Galles contend that adult bilingual language processing is different for monolinguals and bilinguals at three different levels: the semantic level, the lexico-syntactic level, and the phonological level. At a semantic level, Costa and Sebastian-Galles argue, mapping of the meaning of a new word in one language influences mapping of a new word in another language. At a lexico-syntactic level, most bilinguals experience more “words-on-the-tip-of-the tongue” sensations than monolinguals. That is, bilinguals are more likely than monolinguals to struggle to retrieve particular words because of language interference and limited brain capacity. At a phonological level, bilinguals experience an occurrence in which “language shifts the phoneme space” (339). In other words, even though a bilingual has two phonological repertoires, often use of a second language in a foreign country influences the first language phonetic system.

Costa and Sebastian-Galles illustrate three reasons for these effects on bilinguals:

- (1) less usage of their first language than monolinguals because of frequent usage of a second language;
- (2) “linguistic transfer”— continuous interaction between the first language and second language systems; and
- (3) “the need to control and monitor two languages, especially in speech production tasks” (339).

“Bilinguals activate their two languages in a non-selective way” when they process a language. Thus, bilinguals continuously need to control and monitor their speech in order to prevent one language from interfering with the other. Likewise, a bilingual’s language processing is different from the language processing of monolinguals in that a bilingual simultaneously activates two language systems when speaking. Lastly, Costa and Sebastian-Galles argue that bilingual language processes, such as controlling and switching between languages, do promote the development of cognitive benefits, especially in highly proficient successive bilinguals. For example, according to Costa and Sebastian-Galles, bilinguals show “less interference in conflict resolution tasks than do monolinguals” (342). Also, Costa and Sebastian-Galles contend that the bilingual experience delays “neurodegenerative disorders such as Alzheimer’s disease” (342). Overall, the way the bilingual brain works in its two languages differs from the way the brain works in monolinguals.

A last question raised by the study of bilingualism is this one: **What can parents and educators do to support early bilingual children? How should parents raise their bilingual children?** Most of all, parents should consider that language learning is a long-term process and should it be guided by a long term plan? Language learning does

not happen during a short period. People learn vocabulary words in a mother tongue throughout their lifespans. Thus, learning second languages cannot result from following a short-term plan. Therefore, parents should set up a long-term plan for raising their bilingual children. Next, parents need to know some proven factors for success that can help their children to learn a second language. Some scholars argue that imbalanced language development in bilinguals results in a loss of the weaker language in bilinguals later when they grow up. Thus, some researchers argue that balanced language development is important to language retention in bilinguals.

Many elements contribute successfully to ultimate retention of dual languages. I'll mention at least four factors necessary for raising successful bilingual children:

- 1) the development of confidence,
- 2) an appropriate time of introducing a second language,
- 3) the quality and quantity of consistent inputs in each language and
- 4) motivations, including opportunity of use.

In other words, developing confidence in use of a second language plays a role in enhancing acquisition of a second language. Also, the earlier one gets started the better one is likely to succeed if one wants to learn a second language. Kalia et al. argue that “language competence peaks at a particular age, typically early in development, and gradually declines thereafter” (701). Equal amounts of language input in early bilingual language development promotes a balanced language development. Linda M. Espinosa maintains that “young children who have regular and rich exposure to two languages during the early childhood years can successfully become bilinguals” (703). Lastly, the phrase “use or lose it” seems relevant in the development and maintenance of both

languages. Beverley Clark contends that young bilingual children communicate in both languages when they need them. If they do not need both languages, they will convert back to being monolinguals (184). Proper motivation gives children abundant opportunities to use both languages to promote ultimate language retention. Thus, parents should consider

- (1) building the confidence of children,
- (2) introducing a second at an appropriate time,
- (3) providing rich and consistent environmental bilingual inputs, and
- (4) providing proper motivations to support bilingual children.

Therefore, these are at least four components that can contribute to raising successful bilingual children.

4. Sample Annotation

My thesis will essentially be an annotated bibliography of important discussions of early bilingualism. I will provide a series of annotated bibliography entries. Some of them will be relatively short; others will be much longer. Here, as a sample of what I have been doing, is a relatively short entry:

Clark, Beverly. "First- and Second-Language Acquisition in Early Childhood." *Issues in Early Childhood Education: Curriculum, Teacher Education, & Dissemination of Information* (2000): 181-88. ERIC. Web. 19 Jan. 2015.

Beverly A. Clark argues that children's language development is special because children learn a language in particular ways and that their learning style is more "system[ic] in nature" than is true of adults (181). Nevertheless, she contends that young

children's acquisition of a second language is very vulnerable when parents don't provide a continued rich bilingual environment to young bilinguals. If such an environment is lacking, the children quickly become monolinguals as they reach school age. Also, Clark maintains that not all bilinguals have the same fluency in each language. Clark notes that E. Bialystok, another researcher, suggests that "subsequent language learning" (184) is significant for success in acquiring a second language, especially by children. Clark notes that to succeed in learning a language, children need a stimulating and rich linguistic environment. Children, she argues, should feel a real need to interact with other people to build language experience. Therefore, for bilinguals, simple exposure to a second language is not enough. If parents and caregivers do not consistently provide "a rich experiential base" (184), children attempting to learn another language suffer negative effects, such as losing one language or not attaining an appropriate language level for their age.

All in all, Clark suggests that continuous development of a home language, growth in literacy, and a balanced acquisition of both languages between ages five and eleven will support cognitive growth. Such growth will result, she argues, because language learning and cognitive development are closely connected. In addition, Clark illustrates the importance of developing a social language as well as an academic language. She quotes researchers V.P Collier and W. Thomas, who say that "it may take only a short time for oral fluency [to develop], but it may take from seven and ten years to become academically fluent" (186). Clark argues that this academic development of language helps learners make progress in learning and retaining a new language. For example, she shows that young children's language development is "dynamic" (184) and

depends on various language environments. Parents, she believes, should encourage their bilingual children's need to communicate with both languages. Parents should also provide rich language experiences that will help to promote cognitive development. Most of all, continuous language learning is (she argues) the most important factor in the successful acquisition of a second language, especially by children.

As this short sample entry shows, the main purpose of my thesis will be to provide a clear overview of important research about a very important topic.

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ANNOTATION 1

Costa, Albert, and Sebastián-Gallés, Núria. “How Does the Bilingual Experience Sculpt the Brain?” *Nature Reviews Neuroscience* 5 (2014): 336-45. Web. 20 July 2015.

Albert Costa and Núria Sebastián-Gallés explore bilingual language acquisition in early childhood based on recent research reported in *How Does the Bilingual Experience Sculpt the Brain?*. Most previous research has dealt with adult bilingualism, but Costa and Sebastian-Galles explore simultaneous bilingualism, which means the ability to learn two languages from birth. Bilingual infants can learn two first languages easily. In this respect, Costa and Sebastian-Galles examine three aspects of early bilingualism: (1) how bilingual infants acquire two first languages without difficulty, (2) how differently bilinguals and monolinguals process language, and (3) what the cognitive benefits are of being bilingual.

In the first section, Costa and Sebastian-Galles explain how bilingual infants acquire two first languages without difficulty. They focus in particular on two aspects of this issue: (1) bilingual infant language acquisition and (2) language discrimination. First, in terms of language acquisition, learning a new language seems to induce specific language mechanisms in the brain. That is, language acquisition involves learning specific knowledge of the language (such as a particular phoneme repertoire, the words, and grammar). Costa and Sebastian-Galles argue that the most basic linguistic developments characteristic of bilinguals and monolinguals are very analogous, but they believe that there are differences between simultaneous bilinguals and monolinguals in terms of language acquisition. For example, Costa and Sebastian-Galles illustrate the difference between bilinguals and monolinguals in two respects: quantitative and

qualitative. With respect to qualities, they argue that bilinguals have “two linguistic codes...two lexicons and two grammatical systems” (336), rather than one, like monolinguals. In addition, regarding quantities, Costa and Sebastian-Galles argue that the dual linguistic codes of bilinguals have to be obtained by less exposure to each language than is true of monolinguals, who can focus all their time and attention on developing just one language. Costa and Sebastian-Galles assert that these qualitative and quantitative differences should be considered when studying bilingual language acquisition and when promoting bilingual language education, even though the most basic linguistic development of bilinguals and monolinguals is similar. In other words, almost all people learn languages in the same basic ways, but the processes of acquiring language skills are more complicated when more than one language is involved.

Second, in terms of language discrimination involving children who are learning two languages at once, Costa and Sebastian-Galles state that bilingual infants need to separate each of the languages. In other words, they need to understand the requirements of each language on its own terms. Costa and Sebastian-Galles say that humans naturally have a capacity to distinguish between two different languages at an early age when they are exposed to the languages. However, Costa and Sebastian-Galles assert that bilinguals’ experiences affect the ways such children do distinguish one language from another. Costa and Sebastian-Galles refer to one study titled *Native-language recognition abilities in 4-month old infants from monolingual and bilingual environments*, by L. Bosch and N. Sebastian-Galles. The experiment examined the ability of 4-5 month old bilingual and monolingual infants to discriminate between languages. In the study, bilingual and monolingual infants were presented both with examples of an unknown language and

with examples of their maternal language (that is, the language spoken by their mothers). Two pictures of different women were placed on both sides of a central screen. Separate loud speakers were hidden on the backs of each picture of each woman. The central screen displayed two colorful and dynamic images at each trial. The study examined the gaze time the infants devoted to each picture when the loud speaker presented either familiar or unfamiliar languages. The researcher discovered that “monolingual infants orientated faster to a familiar language than to an unfamiliar one, whereas bilingual infants showed the opposite pattern” (338). In other words, bilingual infants focused on the unfamiliar language, but monolingual infants responded more quickly to the familiar language than to the unfamiliar one.

When Costa and Sebastian-Galles discuss language learning mechanisms in detail, they focus on two aspects of language acquisition: 1) forming a “phoneme repertoire” and 2) learning words (338). They state that bilinguals and monolinguals establish their phoneme repertoires at similar points in their development. Monolinguals usually establish their phoneme repertoire during the second half of the first year of life. However, although bilinguals begin to develop phoneme repertoires at roughly the same age as monolinguals, bilinguals take a longer *time* to establish phonic systems because they must actually set up “two sets of phonemes” (338). Costa and Sebastian-Galles assert that the reason for the delay in setting up two phonic systems is that bilinguals receive “less exposure in any one of their languages than monolinguals” (338). That is, because of low frequency of exposure to phonemes in each language, bilinguals take more time to establish two sets of the phonic systems. An example may help to explain their point: two children become athletically active at the same basic times in their lives,

but a child who is trying to learn baseball and basketball at the same time will probably take longer to develop *both* skills than it will take another child to develop just one of those skills.

Costa and Sebastian-Galles argue that monolinguals establish sound repertoires within half of the first year of their lives. However, bilinguals take longer than monolinguals because of the low frequency of their exposure to each separate phonic system and because of their need to set up two systems of sounds in two separate languages.

However, a second aspect of learning a language (or more than one language) involves learning words, not simply sounds. Costa and Sebastian-Galles contend that bilingual experience influences the capacity to 1) identify word forms and 2) attach concepts to words. More specifically, when they discuss identification of word forms, Costa and Sebastian-Galles contend that bilingual and monolingual infants have equal capacities to identify possible from impossible word endings. Costa and Sebastian-Galles assert that “in the second half of the first year of life, monolingual infants start showing sensitivity to these kinds of properties in these words of their native languages.”¹ For example, infants learn that ‘tr’ is not a possible word ending in English. Costa and Sebastian-Galles refer to several relevant experiments involving the ability to identify sequences of word forms. They conclude that bilingual and monolingual infants have equivalent abilities to identify sequences of sounds. However, Costa and Sebastian-Galles explain that when bilinguals use their non-dominant language, they show less discrimination than monolinguals do when using their single languages. The less discrimination shown by bilinguals in their non-dominant language occurs because they

have had less exposure to that language and have used that language less frequently than they have used their dominant language. The researchers therefore conclude (1) that both bilingual and monolingual infants have equal abilities to discriminate between different word sequences, but (2) that bilingual toddlers show less discrimination in their non-dominant language than monolinguals show in their dominant language because bilinguals have had less exposure to the second language.

Additionally, the authors also discuss a second aspect of language learning: the ability to learn words. Costa and Sebastian-Galles focus on the ways infants attach concepts to words, and they also discuss differences between bilingual and monolingual infants in developing this skill. Costa and Sebastian-Galles argue that monolingual toddlers follow what the researchers call a “mutual exclusivity heuristic” principle, in which each new word is linked to a new concept.² However, bilingual toddlers do not develop in compliance with this principle. For example, in one study about differences in word learning between bilingual and monolingual toddlers, monolingual toddlers spent more time watching an unknown object than a known object while listening to a new word.³ This result suggests that monolinguals label a new object by using just one word, as one would expect from the mutual exclusivity heuristic. However, bilingual infants spend similar amounts of time watching both an unknown and a known object as they listen to an unknown word. Bilingual toddlers thus tend to link one label to one thing or one concept *in each language*.⁴ For example, a toddler whose main language is English but whose second language is German must learn to name a dog both a “dog” and a “hund.” The bilingual toddler must learn two different words to refer to the same thing.

In discussing word discrimination and word learning, therefore, Costa and Sebastian-Galles assert that bilingual and monolingual infants have comparable capacities to discriminate between languages, to learn phoneme repertoires, and to learn words. At the same time, they note that monolingual and bilingual toddlers tend to employ those capacities in different ways. Bilingual toddlers face more challenges than is true of monolingual children.

In the second section of their article, Costa and Sebastian-Galles argue that the experiences of bilingual speakers influence the first language performance of those speakers at “various levels of linguistic processing” (339). Specifically, Costa and Sebastian-Galles explore how bilingualism affects adults in two respects: in terms of their behavior and in terms of the neural consequences involved in processing a first language.

Firstly, Costa and Sebastian-Galles claim that the bilingual experience influences performance in a first language in terms of behavioral consequences in adult populations. They draw on evidence from a wide range of tasks performed both by bilinguals and by monolinguals. Specifically, Costa and Sebastian-Galles observe how first language processing affects bilinguals at three different levels: at the semantic level, at the lexico-semantic level, and at the phonological level. First of all, at the semantic level, Costa and Sebastian-Galles illustrate that “the mapping of meanings to lexical items in one language may be influenced by the way in which corresponding lexical items in a bilingual’s other language are mapped into semantics” (339).⁵ In other words, in bilinguals, the way a word is defined in one language may influence the way that word’s synonym is understood in another language. For example, the way the word “hund” is understood in German may affect the way the word “dog” is understood in English if a speaker’s first

language is German. Second, Costa and Sebastian-Galles argue that at the lexico-syntactic level, “bilinguals retrieve and utter words [more slowly] than monolinguals” (339). Bilinguals are likely to experience “tip-of-tongue” sensations, which means that they have a memory of a word but are unable to retrieve the word instantly from the memory. Bilinguals also tend to have “fewer words” for any “given semantic category” compared to monolinguals (339). For example, a person who was raised speaking English may be able to *think* of many different kinds of dogs but may know the German words for far fewer kinds of dogs. For this reason, bilinguals typically exhibit “reduced speech fluency.” Moreover, specific habits of “syntactic construction” in the second language tend to modify syntactic construction in the first language in bilinguals (339). For example, in German, verbs often come at the ends of sentences, so that a native English speaker who speaks German frequently as a second language, may be tempted, when returning to English, to say “please to my house come” rather than “please come to my house.” Also, Costa and Sebastian-Galles assert that at the phonetic level, a “bilingual’s phoneme boundaries differ from those of monolinguals.” That is, “use of a second language shifts the phoneme space” (339). Therefore, a long period stay in a foreign country may induce bilinguals to have accents that reflect their second language. “This shift occurs more often when the first language is used less frequently than the second language” (337). For example, a native English speaker who is living in Germany and has learned German as his second language will probably speak English with a German accent. In terms of behavioral consequences, Costa and Sebastian-Galles argue that the bilingual experience influences performance in a first language at the semantic, lexico-syntactic, and phonetic levels.

Besides showing how familiarity with a second language can affect the use of a first language, Costa and Sebastian-Galles explore three main reasons for the influence a second language can have on the processing of a first language. One reason for the influence of learning a second language on a speaker's use of a first language is that "the extent to which processing of the first language is affected might correlate with the frequency of a second language usage" (339). That is, bilinguals who start to speak a second language frequently tend to use their first language less than monolinguals use the one language they know. Another reason for the influence that learning a second language can have on use of a first language is "the continuous interaction between the first language and second language systems" (339). That is, continuous interactions between two language systems can lead to "linguistic 'transfer'" (339); the use of frequent word and sentence structures in a second language can affect the use of those same structures in a first language. One other reason that learning a second language can influence use of a first language involves the "need to control and monitor the two languages in speech reduction tasks" (339). Costa and Sebastian-Galles contend that this control indicates that bilinguals activate their two languages in non-selective ways. For example, when a bilingual names an apple, a Spanish-English bilingual activates two words in each language such as "apple" and "manzana" (340). Costa and Sebastian-Galles explain that bilinguals have "two potential lexical candidates (one in each language) for each concept that they want to express" (340). Thus, bilinguals continuously need to retrieve at least two words and then decide on the right word to use in any given communicative context. Also, bilinguals need to avoid interference from the other language. This extra, more complicated way of thinking may cause a reduction of

efficiency and rapidity when speaking a first language. For example, someone who learned English as his first language and frequently speaks German as his second language may speak English a bit more slowly than someone who knows only English. This tendency can contribute to first language attrition. In all these ways, then -- frequent use of a second language, continuous interactions between two languages, and more demanding lexical choices for avoiding intrusion by another language -- this explanation may cause a first language attrition in speech rate. That is, Costa and Sebastian-Galles explain how familiarity with a second language can affect use of a first language.

Costa and Sebastian-Galles further claim that the bilingual experience can influence the first language performance in terms of neural consequences. When discussing the effects of bilingualism on the processing of a first language, Costa and Sebastian-Galles explore various neural differences between bilinguals and monolinguals. Costa and Sebastian-Galles contend that it is not yet known exactly how different bilinguals and monolinguals are from one another neurologically; however, they report that most studies suggest that the main difference between bilinguals and monolinguals is “increased language processing demands” in bilinguals (340). In other words, the brains of bilinguals have to work in more complex ways than the brains of people who know only one language.

When discussing neural consequences of the effects of bilingualism on first-language processing, Costa and Sebastian-Galles state that many studies show that increased language processing contributes to neural differences between bilinguals and monolinguals. The extra demand for language processing in bilinguals comes from “either a reduced frequency of language use” or “a need for a greater linguistic control”

(340). Greater linguistic control is indeed exhibited in some experiments on bilingual brains. For example, Costa and Sebastian-Galles refer to one study by I. Kovelman and M. H. Shalinsky, which is about comprehension tasks undertaken by both bilinguals and monolinguals. Highly proficient bilinguals who learned their two languages simultaneously tend to have more activities on the left inferior frontal cortex than do monolinguals. The left inferior frontal cortex is involved “in some sort of language separation mechanism” (340). In other words, bilinguals need to separate two language systems that they are learning so as not to confuse the two systems. Therefore, a higher rate of activities involving the brain area devoted to the language separation mechanism is a specific bilingual brain feature.

In addition, Costa and Sebastian-Galles cite another source about the greater complexity of neurological processes in the bilingual brain. This source is *Language control in the bilingual brain*, by J. Crinion, et al. The extra linguistic controls evident in the brains of bilinguals when their brains are compared to the brains of monolinguals show greater activities “in five left-hemisphere language-related brain areas (dorsal precentral gyrus, pars triangularis, pars opercularis, superior temporal gyrus and planum temporale)” (340). Processing two languages imposes more demands on the brain than processing just one. However, Costa and Sebastian-Galles state that the extra demand resulting from bilingual language processing varies according to different proficiency levels. All in all, Costa and Sebastian-Galles argue that there is no certain and complete explanation of structural and functional relationships in the bilingual brain. Continuous learning and use of a second language affect the bilingual brain’s structural and functional properties, especially those related to language processing.

Nevertheless, despite their unwillingness to generalize, Costa and Sebastian-Galles do discuss current evidence concerning the behavioral and neural effects on highly proficient bilinguals. In highly proficient bilinguals, both the first language and the second language become dominant languages unless extensive exposure to a second language causes first language attrition. Thus, Costa and Sebastian-Galles explore effects of bilingualism on executive control systems in two respects: the behavioral consequences of bilingualism and the effect of bilingualism on control systems.

Specifically, Costa and Sebastian-Galles illustrate the effects of bilingualism on executive control processes in terms of behavioral consequences. Because of the effects of bilingualism on the brain, the brains of bilinguals face greater challenges when bilinguals engage in conversation. Typically, bilinguals continuously monitor relations between their two languages when they participate in speech production, as they need to inhibit one language from intruding on the other language during language processing. In fact, Costa and Sebastian-Galles refer to one hypothesis that states that “continuous recruitment of this [bilingual] mechanism may affect the development and efficiency of the multifactorial executive control system” (342). According to this hypothesis, the more consistent use of the brain involved in bilingual language processing leads to the development of executive control processes. Costa and Sebastian-Galles assert that some studies provide evidence that supports this hypothesis. For example, some studies suggest that “bilinguals experience less interference in conflict resolution tasks than do monolinguals (342).”⁶ In other words, bilinguals are more flexible when faced with conflict resolution tasks than are monolinguals. Costa and Sebastian-Galles say that this effect on conflict resolution tasks benefits both people who learn two languages

simultaneously and people who learn one language first and successfully learn another language second. In both cases, bilingualism seems to affect, in positive ways, the ability of bilinguals to deal with conflict resolution tasks. Nevertheless, Costa and Sebastian-Galles admit that certain difficulties exist in understanding the results because the exact relationships between language processing and comprehension are poorly understood. However, Costa and Sebastian-Galles state that the evidence suggests that bilingualism does affect the development of executive control processes in the human brain.

In addition, drawing on neural studies of the bilingual brain, Costa and Sebastian-Galles explore the effects of bilingualism on executive control circuits. For example, they assert that “early bilingualism not only alters the functional involvement of certain brain areas in the performance of executive control tasks, but also induces experience-related changes in brain structure” (342). That is, when confronted with non-linguistic switching tasks, early bilinguals recruit a larger area of the brain involving language control (the left striatum and the left inferior frontal lobe) than monolinguals do. Additionally, early bilinguals show less brain use in conflict monitoring tasks than monolinguals do. Costa and Sebastian-Galles also suggest that in elderly people, the experience of bilingualism delays the “behavioral symptoms associated with neurodegenerative disorders such as Alzheimer’s disease”⁷ (342). Costa and Sebastian-Galles assert that the age of onset of diseases like dementia in proficient bilinguals is about 4-5 years later than in monolinguals. Costa and Sebastian-Galles state that bilingualism does not prevent the development of neural disorders, but it does delay the symptoms because of the greater cognitive reserve developed by bilingual experience. Likewise, Costa and Sebastian-Galles illustrate that bilingualism affects executive control circuits.

In summary, Costa and Sebastian-Galles in the first section of their article discuss the effects of bilingualism on language processing. In the second section, Costa and Sebastian-Galles propose two main reasons for various differences between bilinguals and monolinguals in language acquisition. In the third section of their essay, Costa and Sebastian-Galles assert that although bilingual and monolingual brains seem to involve use of the same neural networks processing first languages, bilinguals experience increased brain activities because they process a second language. The increased executive controls that result from learning a second language lead to greater cognitive reserves in elderly bilingual speakers. However, Costa and Sebastian-Galles argue that one should be cautious in drawing any firm conclusions about these matters. They suggest the need for further research before any conclusions can be drawn. Costa and Sebastian-Galles conclude that bilinguals can attain the same kind of command of two languages as monolinguals have of one language if bilinguals engage in “frequent, varied and socially useful” second language use.

END NOTE [A NOTE THAT APPEARS IN THE ORIGINAL ARTICLE]

¹ Jusczyk, P.w., A.d. Friederici, J.m.i. Wessels, V.y. Svenkerud, and A.m. Jusczyk. “Infants’ Sensitivity to the Sound Patterns of Native Language Words.” *Journal of Memory and Language* 32.3 (1993): 402-20. Web.

² Markman, Ellen M, and Gwyn F Wachtel. “Children’s Use of Mutual Exclusivity to Constrain the Meanings of Words.” *Cognitive Psychology*: 121-57. Print.

³ Markman, Ellen M., and Gwyn F. Wachtel. “Children’s Use of Mutual Exclusivity to Constrain the Meanings of Words.” *Cognitive Psychology* 20.2 (1988): 121-57. Web.

- ⁴ Byers-Heinlein, Krista, and Janet F. Werker. "Monolingual, Bilingual, Trilingual: Infants' Language Experience Influences the Development of a Word-learning Heuristic." *Developmental Science* 12.5 (2009): 815-23. Web.
- ⁵ Pavlenko, Aneta, and Barbara C. Malt. "Kitchen Russian: Cross-linguistic Differences and First-language Object Naming by Russian–English Bilinguals." *Bilingualism Bilingualism: Language and Cognition* (2010): 19-45. Print.
- ⁶ Prior, Anat, and Brian Macwhinney. "A Bilingual Advantage in Task Switching." *Bilingualism Bilingualism: Language and Cognition* (2009): 253. Print.
- ⁷ Bialystok, Ellen, Fergus I.m. Craik, and Morris Freedman. "Bilingualism as a Protection against the Onset of Symptoms of Dementia." *Neuropsychologia*: 459-64. Print.

ANNOTATION 2

Espinosa, Linda M. "Second Language Acquisition in Early Childhood." *Early*

Childhood Education. Westport, CT: Greenwood Publishing Group, n.d. Web. 23 Jan. 2015.

<http://www.researchgate.net/publication/265075052_Second_Language_Acquisition_in_Early_Childhood>

Linda M. Espinosa argues that early childhood education is important because all young learners virtually have the ability to "master the basics of one language" in their first several years (1). Espinosa claims that "high quality of early childhood education can improve the educational achievement of children from diverse linguistic and cultural backgrounds and help to reduce. . . [any] achievement gap before kindergarten" (1). Thus, Espinosa suggests that educators should comprehend how young children acquire a second language if those educators hope to provide high -quality learning environments.

Most of all, Espinosa discusses Marry McLaughlin's method of simultaneous and sequential second language acquisition. Simultaneous bilingualism involves learning two languages at the same time from shortly after birth. "Before three years of age," Espinosa paraphrases McLaughlin as arguing, "the developmental pathway is similar to how monolingual children acquire language" (1). However, there is, she argues, some agreement that dual language learning delays the development of the vocabulary of a particular language.

In other words, Espinosa notes that sequential bilingualism helps children to learn second languages after their first language acquisition. In this sense, sequential

bilingualism promotes a different kind of language development, depending on both the child's personality and language learning environment. Thus, Espinosa references the claim by Tabors and Snow about four developmental periods for language acquisition (qtd. in Espinosa 3). For example, Tabor and Snow argue that children progress through four stages of a second language learning: a period of "home language use," a "nonverbal period," a period of "telegraphic and formulaic speech," and a period of "productive language" (4). If children are fluent in their home language, they keep speaking their first language when entering English-speaking preschools, even though others do not understand them. The next step occurs when children who speak their different language in English-dominant environments realize that other people speak another language. During this time of realization, they themselves rarely speak, which is the non-verbal period. This, according to Espinosa, is "a period of active language learning for the child; he is busy learning the features, sounds, and words of the new language" (3). In this stage, children do not discontinue second language learning; instead, they consistently gather information about the new language. The third stage involves "telegraphic and formulaic speech." This Espinosa notes, is analogous to the stage at which a monolingual learner is using simple words such as "me down," which means "I want to go down stairs." Or the children in this stage use words they have only heard from others, such as "Lookit" (4). This is the stage when bilingual children start to interact with others even though they do not recognize meanings because they merely use words they have heard. This the telegraphic and formulaic language learning stage. The final stage is the stage of "productive language." Now, children become more productive in their second language usage because they may use "very simple grammatical patterns such as 'I wanna play'"

(Espinosa 4). Espinosa notes that children in this stage will attain new language structures and vocabulary while correcting errors in their speaking. This is the last stage of a young child's bilingual's language learning. Espinosa argues that young bilingual children also usually go through these four stages, but she argues that process and patterns may vary depending on their vocabulary, early literacy skills, and experience in interpersonal communication.

Finally, Espinosa emphasizes an understanding of "code switching" (5) for early childhood educators. "Code switching" means that young bilingual children mix two languages during communications because they lack full vocabularies in either language. They may need to use both languages to express their ideas and to supplement low vocabularies in each language. Espinosa contends that the main goal of second language learning is to enhance communication. Thus, Espinosa explains that "code switching" in a second language acquisition is not negative; instead, she maintains that it enhances communication. In this article, Espinosa asserts that educators should (1) understand how young bilingual children learn a second language; (2) examine the four stages of a second language acquisition outlined by Tabors and Snow; and (3) realize the importance of code switching.

ANNOTATION 3

Kalia, Vrinda, Makeba Parramore Wilbourn, and Kathleen Ghio. "Better Early or Late?

Examining the Influence of Age of Exposure and Language Proficiency on Executive Function in Early and Late Bilinguals." *Journal of Cognitive Psychology* (2014): 699-713. Print.

Drawing on previous research, Vrinda Kalia et al. argue that early and late bilinguals differ because of different "language learning experience[s]" (699). The authors examine (1) how to "determine whether early and late bilinguals vary from one another" and (2) how to discern whether they "exhibit cognitive advantages in EF [executive function] relative to monolinguals" (699). Vrinda et al. explore the definition of early and late bilingualism, and they compare early and late bilinguals to each other. Vrinda et al. contend that most researchers say that the phrase "early bilingual" refers to a child who became bilingual before age 5 and a child who has equal fluency in his or her dual languages. Vrinda et al. also define late bilinguals as those who learn a second language after age 10. Vrinda et al. contend that although the competence of early and late bilinguals in their second language may not differ in some cases, their neural organizations differ. Recent neuroimaging studies show difference between the two groups in densities of grey matter in the inferior parietal area of both the left and right hemispheres. Early bilinguals show more grey matter in their inferior parietal areas while late bilinguals possess less grey matter in their inferior parietal areas. Vrinda et al. argue that a bilingual's proficiency is relevant to grey matter density. Thus, Vrinda et al. show that late bilinguals are likely to have "less grey matter" than early bilinguals. Late bilinguals are also less proficient in their second language. Vrinda et al. also argue that

the “quality and timing of dual-language exposure” contribute to different outcomes in various bilinguals (701).

In addition, Vrinda et al. examine “specific factors” that result in a difference of neuro-cognition and language development between early and late bilinguals (701). The authors mention two more differences between early and late bilinguals, including different developmental processes, such as brain plasticity and rate of first language entrenchment. Vrinda et al. argue that late bilinguals are not able to achieve native-like competency in their second language because “language competence peaks at a particular age, typically early in development, and gradually declines thereafter” (701). Thus, early and late bilinguals differ in their competence in using a second language because of differences in a critical period of brain development. The authors mention also two additional aspects of the language learning process: early bilinguals’ brain plasticity and late bilinguals’ first language entrenchment. If children are exposed to different languages from infancy, their brains have enough time to acquire two separate language systems simultaneously. However, the first language system of late bilinguals -- including lexical, syntactic and semantic neural networks -- is already entrenched in their brains (701). Vrinda et al. argue that “words from the L2 [i.e. second language] will cluster closely with relevant representational (e. g. symbol) and phonological (e.g. sound) information from the L1” (701). This means that if a late bilingual wants to use a word in a second language such as “apple,” he or she must think of “manzana” in his or her first language. The late bilingual thus connects and translates words from L1 to correspond to L2 words.

In addition, regarding brain plasticity, Vrinda et al. argue that “late bilinguals also acquire their L2 with reduced neuroplasticity” because they already have rooted their first language in their brains (701). Thus, to reduce dependence of their second language on their first language, late bilinguals need to develop “metacognitive skills like rehearsal, imagery and recoding” (701). These skills will help them develop better grasps of their second language. Thus, late bilinguals need to make a more dedicated effort to separate both languages than early bilinguals need to make. This effort is necessary because “late bilinguals experience greater L1 interference” than early bilinguals do. Additionally, Vrinda et al. explain that late bilinguals who are proficient in both languages use more metacognitive skills for increasing their L2 exposure. All in all, Vrinda et al. argue that early and late bilinguals differ in their language processing partly because of differences in brain plasticity and partly because of first language entrenchment in late bilinguals.

Additionally, Vrinda et al. examine cognitive advantages in EF, or executive function. Vrinda et al. explore how differently early and late bilingualisms influence EF. They refer to findings by Hernandez et al. that late bilinguals need more “increased activity in the cortical region of the brain” (702) compared to early bilinguals. Thus, late bilinguals show “additional processing demands” when using languages. Vrinda et al. did an experiment to show “the differential effects of age of L2 exposure and language proficiency on EF” (703). They examined executive functions in three different groups of people: 40 early bilinguals (people who experienced L2 exposure before age six), 23 late bilinguals (people who experienced L2 exposure after age six), and 42 monolinguals. The authors examined differences in EF functions among the three groups. They assessed oral language skills in English and EF skills by using the Auditory Cured Number Numeral

Task. The findings show that in terms of accuracy, late bilinguals were less accurate than early bilinguals and monolinguals. Early bilinguals and monolinguals showed nearly perfect accuracy. As far as other matters (such as switching tasks) are concerned, Vrinda et al. failed to find differences among the three groups. Vrinda et al. argue that “early bilinguals and monolinguals were equivalent in their performance on the EF task, whereas the late bilinguals were less accurate, relative to the other two groups” (699). Vrinda et al. also note that Luk et al. who found that early bilinguals performed significantly better than late bilinguals” (710).

When Vrinda et al. further discuss executive functions in bilinguals, they mention that “frequent use of inhibitory control, [which is] involved in language selection, has conferred a generalized advantage in bilinguals’ EF”¹ (710). Also, Vrinda et al. explain the difference between early and late bilinguals using the *competition model* developed by Hernandez et al. According to this model, early and late bilinguals differ in two additional ways: (1) their “L2 has parasitic associations with L1” and (2) the groups differ in brain plasticity” (710). Late bilinguals must use metacognitive skills “such as rehearsal, recoding and imagery” to separate their two distinct language systems. In fact, Vrinda et al. argue that “it is possible that frequent use of these metacognitive strategies” contributes to advantages for late bilinguals in EF. The authors refer to findings by Festman, Rodriguez-Fornells, and Munte that “late bilinguals with greater language control...[are] better on EF measures than late bilinguals with less language control” in general (710). Nevertheless, Vrinda et al. argue that further research is needed to confirm these results. According to Vrinda et al., current studies show “associations between language and EF in early and late bilinguals” (710). Vrinda et al. conclude that “the

current study provides additional evidence that fundamental differences in the way individuals learn languages [affect] cognition” (711). They suggest that future research would help us better understand the relationship between language and EF.

END NOTE [A NOTE THAT APPEARS IN THE ORIGINAL ARTICLE]

¹ Bialystok, E., and F. I. M. Craik. “Cognitive and Linguistic Processing in the Bilingual Mind.” *Current Directions in Psychological Science* (2010): 19-23. Print.

ANNOTATION 4

Krashen, Stephen. "Bilingual education, the acquisition of English, and the retention and loss of Spanish." *Research on Spanish in the US*. Ed. A. Roca. Somerville: Cascadilla Press, 2000. 432-444. Print.

Drawing on recent research, Stephen Krashen illustrates the "impact of bilingual education on English language development and on the retention and loss of [the] 'heritage language.'"

Krashen argues that the development of the first language helps students acquire a second language in two ways. First, teaching a subject matter in a second language boosts bilingual children's understanding more effectively when they have already learned about the subject in their first language. For example, a student will more readily understand instruction about dogs in a second language if the student has already learned about dogs in a first language. In addition, Krashen argues that "literacy developed in the primary language transfers to the second language"(2). Krashen quotes Frank Smith, who maintains that as long as one can read in one language, he or she can read in another language. Therefore, Krashen maintains that knowing a first language enhances the second language development. Furthermore, Krashen argues that based on previous research, a well-designed bilingual education is better than an all English program (2). The author mentions Ann Willig, who concludes the three components of development of English as a second language are "subject matter teaching in the first language, literacy development in the first language, and comprehensible input in English." Krashen does not agree with some researchers who contend that all-English immersion programs are better than bilingual programs. Instead, Krashen argues that children although immersion

programs may help students learn “social English,” such students usually lag behind in “academic English”(3). Thus Krashen claims that bilingual education is better than English immersion programs. The author mentions Hakuta’s findings that schools that keep bilingual programs usually show an increase in scores on the SAT9. In schools that lacking bilingual education, improvement in SAT9 scores is not seen. Likewise, the author argues that because bilingual children learn conversational language very quickly but not academic English in English immersion programs, well designed bilingual programs are needed to help young bilingual children succeed both in social and in academic English.

Finally, Krashen emphasizes the importance of reading in any efforts to improve bilingual education. He points out the frequent absence of books in many bilingual programs. Krashen argues that “free voluntary reading is the major source of our literacy competence” (5). Krashen asserts that students who willingly participate in free reading activities achieve greater development than those who do not. The author contends that “free voluntary reading” helps students develop knowledge and literacy in a first language. The development of knowledge in a first language contributes to the continuing development of skills in second languages.

Krashen discusses language teaching by discussing the sociology of language. The claim by Senator Robert Dole that immigrants do not want to learn English and adhere to their native heritage is, he argues, not true. Although many older immigrants are good at speaking their first language, members of the younger generation are much more capable of speaking English fluently. Krashen mentions Portes and Hao’s findings that younger bilingual speakers actually have more competence in his or her English than

in his or her heritage language. Krashen also mentions Orellana, Ek and Hernandez's findings about Mexican-American children. These findings showed "a gradual but marked shift over the middle childhood years toward a . . . disinclination to use Spanish" (7). The author explains that the reason the shift occurs is "lack of input in the heritage language." Krashen mentions Hinton's findings that even though many minority families use their heritage language at home, their children still often lose their first language. Other researchers explain that "those who visit the country of origin more often have higher HL competence." (7). Krashen notes Tse's finding that some minority group members actually resist the HL because they have a strong desire to integrate into the target language in childhood or adulthood. Their apathy their original language inhibits the minority members' development of their HL. However, minority group members who have a strong connection to their ethnicity tend to retain their heritage language.

In this article, Krashen emphasizes how learning a first language enhances learning of a second language. He contends that well-designed bilingual programs are better than all-English immersion programs because bilingual programs help bilinguals learn an academic language more effectively. Thus, Krashen argues that a good bilingual program should have three important components. These components are "subject matter teaching in the first language, literacy development in the first language, and comprehensible input. " Most of all, "free reading activity" is a great way to enhance a second language development. Lastly, Krashen mentions that young bilingual students often lose their first language when they go to school because of a lack of input in their first language. Thus, the author argues that supporting and developing knowledge of the first language is important if teachers want students to retain both languages.

Krashen thus argues that supporting students' knowledge of a first language helps them learn a second language.

ANNOTATION 5

Krashen, Stephen D. "The Critical Period for Language Acquisition and Its Possible Bases." *Annals of the New York Academy of Sciences* (2006): 211-24. Print.

At first, Stephen D. Krashen explores Lenneberg's claim that Lenneberg's research shows that "a critical period may exist for human language as well, and suggests that a first language may be completely and naturally acquired only between the age of about two and puberty" (211). Basing his conclusions on the recovery of children suffering from aphasia, Lenneberg notes that such recovery is different between children and adults. If a child develops skill in a language before reaching nine years old and before the onset of the disease, "the language will invariably return to a child" (211). However, Krashen refers to Lenneberg when he says that "aphasias that develop around puberty or after will 'commonly leave some trace behind which the patient cannot overcome'" (211). Krashen notes that this observation by Lenneberg indicates evidence of "a reduced first-language learning capacity after puberty" (211). In addition, even if this critical period involves first language learning, Krashen argues, Lenneberg's findings still suggest a connection to second language learning in both children and adults.

In his own article, Krashen contends that if a critical period for language learning exists, second language learning would proceed the same way as first language learning during the critical period and before the child enters puberty. Also, based on a critical hypothesis, Krashen argues that after puberty, second language learning involves different techniques than first language learning. Before puberty, second language learning develops "naturally," without formal instruction. After puberty, second language learning must be "taught and learned through a conscious and labored effort" (212).

For these reasons, Krashen discusses several predictions about the critical period for language learning. First, he proposes “(a) [that] [s]econd-language acquisition that takes place before puberty will be similar in process to first-language acquisition, but [that] (b) second language learning occurring after puberty will not” (212). Second, he proposes that “(a) [s]econd languages acquired before puberty may be learned without formal instruction, but [that] (b) second languages learned after puberty will require formal instruction” (214). Third, he suggests that “[f]oreign accents cannot be overcome easily after puberty” (217). Fourth, he suggests that “[f]ull native-like competence in syntax and semantics may be achieved in second languages acquired before puberty, but not in second languages acquired after puberty” (218). Krashen contends that these four predictions and the evidence supporting them suggest the existence of a critical period when languages are most easily learned. This critical period occurs before puberty.

Krashen then explains why he thinks puberty causes changes in language learning. Krashen asserts that the existence of the critical period is the result of greater brain plasticity before a child enters puberty. Krashen refers to a quote from Lenneberg in *Biological Foundations of Languages* that suggests a “neurological basis for the difference in language learning capacity” (219). According to Lenneberg, a child’s best language learning takes place when the brain is most plastic or open to change and development. For example, in the event of injury in one side of hemisphere, the child’s language learning dominance can transfer to the other side. Although a child’s dominance in language learning is not completed during childhood, that development is fully established by puberty. Lenneberg contends that “interhemispheric plasticity” (219) is relevant to learning a second language. In other words, Lenneberg believes that before

puberty the two halves of the brain interact more fully with one another. After puberty, each side of the brain tends to develop specialized functions.

However, Krashen claims that the completion of lateralization in brain development actually occurs somewhat earlier than puberty. To support this contention, Krashen examines Lenneberg's data about a "case of unilateral brain damage resulting in language disturbance" (219). Krashen argues that the data support the claim that "lateralization is completely developed by five" (219). Krashen additionally maintains that "the percentage of cases of aphasia due to left-hemisphere lesions is about the same in children over five as it is in adults" (219). Children with aphasia who have lesions in the left hemisphere after five do not demonstrate a big change in their ability to learn languages when compared to adults. The percentage of children with aphasia who are cured of that condition is similar to that of adults. Consistent with this claim, Krashen reexamines "data from dichotic listening." Krashen and Harshman "used children as subjects and concluded that no significant change in degree of lateralization took place after five." Thus, Krashen concludes that the completion of lateralization development is more relevant to language acquisition "than the establishment of a 'biological barrier' to further natural language learning" (220). All in all, Krashen argues that the critical period for language development is earlier than puberty. Krashen contends that the process of lateralization in language acquisition is complete at around the age of five. Krashen does agree that languages become more difficult to learn after a child enters puberty, but he believes that this is because of adolescents' tendency to construct abstract theories as well as their self-consciousness, or their reluctance to reveal themselves and make their feelings vulnerable. Krashen says that, according to Inhelder and Piaget, adolescents have

a tendency to construct “abstract hypotheses to explain phenomena and [they become] interested in general, rather than *ad hoc*, solutions to problems” (220). Krashen argues that this tendency inhibits natural language acquisition. The person who can “construct a conscious theory (a grammar) of the language he is learning” may want to adhere to “rule isolation in language teaching systems” rather than “approach more than one rule at a time” (220). Thus, Krashen argues that feedback necessarily needs to be confirmed for “his [the adolescent’s] own conceptions of the rule he is learning” (220). Children, however, do not have this ability to think abstractly. Thus, children can learn a language naturally, without thinking about rules and grammar. However, adults learn a language by trying to develop a “conscious understanding of language” (220). The tendency of adults to construct conscious grammars prevents them from achieving full competence because they tend to apply only one rule at a time in the language they are learning rather than employing many rules. Krashen believes that the formal operations of logic and grammar that begin to develop during puberty cause a close to the critical period for language acquisition and inhibit natural language learning.

As has already been mentioned, Krashen believes that another reason for the closing of the critical period is the development of adolescent “self-consciousness” (221). This means that adolescents typically do not want to reveal themselves. Adolescents usually want to avoid repeating errors they have made, and so an adolescent “may prefer to rely on rules that feel to him to be ‘correct,’ namely the rules of his first language” (221). Krashen argues that this tendency to rely on the grammar of the first language causes language interference errors. These are kinds of errors that young children do not typically make. Thus, Krashen argues that the self-consciousness of adolescents

contributes to the closing of the critical period for language learning. All in all, Krashen contends that natural language learning ceases “with [the] onset of formal operations” and with “rule isolations and feedback in all teaching systems” (221).

ANNOTATION 6

Magruder, Elizabeth et al, “Many Languages, One teacher: Supporting Language and Literacy Development for Preschool Dual Language Learners.” *Young Children* (2013): 8-15. Web. 12 March 2015.

Magruder et al. note the way educators support dual language learners who are also young children. Magruder et al. note that according to the US Census Bureau Project, as the number of immigrants in the U.S. grows, early educational programs are becoming diverse in language and ethnicities. Other researchers report that although the number of dual language learners is increasing, their achievement is consistently lagging behind (qtd. in Espinosa). However, Magruder et al. argue that being bilingual is both advantageous and possible for young children. They report research by both Bialystok and Kuhl that finds that “[b]ilingual preschoolers have shown increased cognitive, linguistic, and social-emotional advantages” (Magruder 9). That is, their research shows that a bilingual student “benefits from instruction that focuses on decoding and comprehension in English” (Magruder 9). Magruder et al. reference other studies that claim that a strong home language base enhances English learning and that “young children learn two languages as naturally as learning one” (9). Nevertheless, the authors argue, without support from educators and family, bilinguals can quickly convert to monolinguals if they feel less and less connected to their home language. Thus, for all these reasons, supporting and encouraging bilingual learning in early childhood is a critical success factor.

Magruder et al. argue that children learn languages to communicate their experiences and discoveries in many ways. Thus, the more interactive and interesting the

conversations are that children take part in, the more language they learn. For example, the authors explain that reading books, singing, playing words games and simply talking to and with children are all activities that build vocabulary while providing increased opportunities to develop listening skills. Thus, the authors contend that for children who enter preschool or kindergarten, “language competency [is] vital for navigating and participating in the classroom community” (10).

Secondly, Magruder et al. emphasize the need for “personalized oral language learning” for young bilingual children because speaking competency is significant for reading success.” The authors mention that “to meet this need” for personalized instruction, “three of the authors collaborated with Whitcome Hayslip, the district administrator for the Los Angeles Unified School District at the time, and designed Personalized Oral Languages Learning (POLL) for Los Angeles Unified School District “ (10). This program presented more intensive and individualized strategies for language and literacy for early childhood education. It especially focused on bilinguals and drew on recent research on early literacy instruction and oral language development in young children.

The authors define the components of POLL (Personalized Oral Languages Learning) as (1) family support, (2) environmental supports, and (3) instructional support. At first, the family, to cooperate with teachers, should report their children’s home language talents, usage, and interests. This information will help teachers support children in the preschool setting. Especially, the authors maintain that family support is the first component to improving a bilingual’s language development.

Next, as for environmental support, the authors suggest that the “physical environment” should be “nurturing and engaging.” Children learn a language, in part, by interacting with environment sources such as colors, spaces, furniture and so on. The classroom environment should be child-centered, friendly, and safe so that the child participates in all the learning areas and takes full advantage of play-based learning. The authors argue that “learning centers” should “support and promote conversations around exploration and discovery” and should be “linked to study themes” (11). Additionally, the authors suggest that “print-rich labeling” should be “visible” and should represent “all home languages” because knowledge of a home language enhances second language learning. Fourth, “books, materials, displays, and artifacts” should reflect “all languages, cultures, families, and communities of children” (11). The authors argue that all of this environmental support for young bilingual children will boost dual language learning.

Lastly, the authors discuss instructional supports for dual language learning for young children. The authors suggest the use of “intentional messages” and “anchor texts” to reinforce children’s learning (11). An intentional message is a note that describes each day’s lesson, including content vocabulary. The written messages boost children’s learning of new concepts for the lesson because the children can visualize the message and refer back to it during class. Use of an “anchor text” is an intentional and repetitive use of a picture book to enhance vocabulary and concept development. Effective use of an “anchor text” involves vocabulary imprinting, visual cues/gestures, song and chants, and center extensions (which involve small group activities). First, the authors explain that “vocabulary imprinting” uses images to introduce new concepts and develop understanding. Second, visual cues and gestures, which involve physical movements,

imprint the meaning of the specific vocabulary terms. Third, song and chants are also good ways to improve vocabulary learning by encouraging students to repeat rhymes and sound patterns. Fourth, “center extensions” are intentionally designed “center-based opportunities” for small group practice. “These are child directed and teacher facilitated” (12). For instance, a teacher observes groups of students working on their own and allows the students to interact freely with each other. This encouragement gives dual language learners the opportunity to engage with native speakers. The authors argue that all these specific instructional supports contribute to young bilinguals’ language development.

In all these cases, the authors claim that both teachers and families should contribute to support and boost young children’s language learning. The specific methods the authors describe show how families and teachers can support bilingual children as they seek to master more than one language.

ANNOTATION 8

Myles, Carey. *Raising Bilingual Children*. Los Angeles: Parent's Guide Press, 2003.

Print.

To be bilingual is not only challenging but also beneficial. Nevertheless, not all parents successfully raise their children as bilinguals. In *Raising Bilingual Children*, Carey Myles explores what bilingualism is and suggests, throughout fourteen chapters, how to raise bilingual children successfully. *Raising Bilingual Children* is well organized and he suggests effective methods to raise bilingual children culturally and academically. Myles' suggestions are based on his personal experience as well as additional research and theories. In *Raising Bilingual Children*, Myles advises that parents should contribute to their bilingual children's learning. They should do so to encourage the children and to accelerate their bilingual development. They should not pressure the children; instead, they should help them to be happy, develop cultural bonds, and maintain a strong interest in their minority language learning.

In Chapters One through Five, Myles provides the background information about bilingualism. According to Myles, bilingualism does not require equal fluency in two languages. Bilinguals inevitably have a dominant language. Important elements needed to maintain bilingualism are the "use of language," a "certain level of exposure," and the "consistency" necessary "to promote language development" (19). Thus, it is not good to make radical changes. Gradual change must be accompanied by constant exposure to the second language. Myles also explains that not all of the results for bilinguals who learn a second language in early childhood are advantageous. Some become additive bilinguals

who gain a second language, whereas others become subtractive bilinguals who lose their minority language when they learn a majority language.

Thus, in bilingual family life, parents need to support their children's weaker language so that they do not lose their first language when they learn the second. Parents should, for example, set up bilingual environments. Such environments can be passive (such as reading and watching movies) as well as active, such as traveling or encouraging people to speak with the children in their minority language (42). Parents raise bilingual children to confer various advantages. For example they want to enhance a child's "potential academic" success or the child's "career opportunity" (43). In addition, the ability to communicate people who speak the minority language can help give the children cultural understanding and give them insight to a way of life which makes them "tolerant, open-minded, and empathetic" (43). Thus, raising bilingual children is beneficial in many ways.

Throughout Chapters Six through Eight, Myles introduces several current academic research studies which parents need to know when they raise their bilingual children. For example, he discusses Noam Chomsky's idea of "innate ability," which was proposed in early research about bilingualism. Myles also discusses "behaviorism" which explores how language development is influenced by language environment (51). Myles suggests that young bilinguals (at least according to the "innate ability theory) have a great advantages over when trying to learn a second language. Children are still undergoing cognitive development. Thus they save time when learning languages because their brains are "plastic" and "receptive" (55). In addition, it is important (according to behaviorist) how parents shape the language environments of their children.

Thus, Myles, based on his interpretation of recent research, suggests earlier learning for bilinguals and more exposure to a second language at an early age.

Chapters Eight through Fourteen discuss such issues as (1) choosing schools, (2) bi-literacy, and (3) dilemmas when raising young children to be bilingual. Most bilinguals do not have equal proficiency in speaking and reading. Some of them, for instance, read only one language. Thus, their parents' extra commitments to promoting bilingual reading and writing can help their children to retain the minority language. Also, the process of promoting bilingualism will be much easier if parents choose an appropriate school. Myles also suggests that parents should support their children's bi-literacy by giving them interesting activities to do. Children's literacy skills develop long-term effects "depending on what their general literacy experience has been, regardless of the language" (129). Thus, it is important to provide "positive experiences" connecting literacy or language learning with fun or interesting activities. Also, Myles explains that "biculturalism" -- which makes the early bilingual learner interested in cultural bonds -- can be very helpful. It can help motivate children to learn their minority language because of their interest in their "cultural heritage" and identity in their weaker language. However, special challenging situations (such as death of a parent, divorce, and learning delays and disabilities) can create challenges, both for parents and for children. Most of all, Myles claims that "the most important measures of success in raising bilingual children are whether the children are happy and the degree of satisfaction that parents feel with their children's language development" (153).

Overall, this book is very useful because it explores and explains recent research as well as the underlying issues bilingual families deal with when they are just dealing

with a child's efforts to learn a second language. First of all, Myles suggests that one key measure of success when raising bilingual is the children's happiness and parents' satisfaction. Parents should help engage their children's interest in learning a second language by supporting rich language experiences.

ANNOTATION 9

Steiner, Naomi, and Susan L. Hayes. “Step 4 Creating Your Bilingual Action Plan “ 7
Steps to Raising a Bilingual Child. New York: AMACOM, American
 Management Association, 2009. Print.

In *7 Steps to Raising a Bilingual Child*, Naomi Steiner and Susan L. Hayes suggest how parents can raise their bilingual children step by step. The steps are as follows: step 1, gaining background knowledge of bilingualism; step 2, defining goals; step 3, coaching your child’s bilingualism; step 4, creating a bilingual action plan for rich bilingual environments; step 5, overcoming obstacles; step 6, bi-literacy in two languages; and step 7, cooperating with the school to help a bilingual child. This annotation will focus on step 4: how parents can provide enriched bilingual input
 In step 4, Steiner and Hayes illustrate how parents can provide enriched bilingual opportunities. Steiner and Hayes divide step four into five parts:

Part One: Maximizing Language Input at Home

Part Two: Making the Most of Community and Family Resources

Part Three: Finding School Support

Part Four: How Three Families Are Raising Bilingual Children

Part Five: Create Your Own Bilingual Action Plan. (66)

More specifically, in part one, Steiner and Hayes advise parents of bilingual children to supply resources for enough bilingual input at home. Steiner and Hayes argue that parents should “extend the language boundary at home” (66) in attractive ways for their children. Children learn when they are interested and are more engaged and attentive to language inputs. For instance, to foster an enriched language environment at home, Steiner and

Hayes recommend using technology, the internet, educational computer games and high-tech toys, television, radio, videos and DVDs, and “old-fashioned” activities. By using all these resources (Steiner and Hayes suggest) parents can provide enriched bilingual inputs at home.

In part two, Steiner and Hayes advise parents to find out community and family sources outside of the home for achieving bilingualism. For example, they suggest that parents should get to know friends and neighbors who share an interest in helping children become bilingual. They also advise parents to go to the local library to find more abundant foreign language resources. They also suggest hiring a babysitter who can speak a foreign language and who can provide children with more exposure of the language. They additionally suggest reaching out to “extended family members nearby who speak your chosen language, visiting them and encouraging them to speak the language with your children” (76). Finally, they also advise parents to travel to the country of origin where the second language is spoken. Steiner and Hayes advise readers to create some community support if they don’t have it nearby. They say that such support helps the children “speak the language, exchange ideas, share resources, [and] encourage each other” (78). Likewise, Steiner and Hayes advise readers to connect with bilingual communities and families as well as to support, at home, abundant bilingual environments.

In part three, Steiner and Hayes argue that second language programs in public schools often fail to help students “to reach fluency in the second language” (80). Nevertheless, they believe that second language programs in public schools are cornerstones to helping children learn a second language. Also, they suggest that “foreign

language teachers in your child's school might be helpful in finding further resources" (81). To help children benefit from even more school programs, Steiner and Hayes advise that children should join Saturday or Sunday language schools. Those weekend schools are cheaper because they receive financial support from countries' governments. In addition to encouraging students to participate in school programs, Steiner and Hayes suggest at-home tutoring for "specify[ing] your language goals" (82). Additionally, Steiner and Hayes suggest "Do-it-Yourself" Language Learning Programs (83) involving computer or CD-ROM programs. Steiner and Hayes list, as examples of such programs, "Rosetta Stone, the Learnables, Power Glide, Transparent Language, and Tell Me More" (83). The programs should be age appropriate. Parents should schedule a little homework with the language learning programs every day. Lastly, Steiner and Hayes suggest sending children to foreign language summer camps.

In part four, Steiner and Hayes introduce three bilingual families and suggest some additional advice for increasing bilingual inputs.

In part five, Steiner and Hayes instruct readers on how to create their own bilingual action plan. For achieving the various goals that can help parents raise bilingual children, experts suggest breaking the plan "down into small, specific, and perhaps most important, manageable tasks or activities you can do on a daily or weekly basis" (93). Steiner and Hayes show examples of a time table worksheet for Monday through Friday and a worksheet for bilingual input resources. Likewise, Steiner and Hayes recommend bilingual action plans daily based for consistent bilingual inputs.