

Native Language and Its Acquisition Within a Bilingual

Abstract

Many people are born into families where more than one language is spoken, and there may be a different language spoken outside of the household. This flow of linguistic information is somehow encoded into the brains of bilingual children. After growing up, the bilingual child ends up being fluent in both of those languages, or not, depending on the situation. No matter the outcome, compared to monolingual children, a bilingual child's language acquisition and socio-psychological development will be different. Depending on the situation, a child raised in a bilingual environment may have delayed or accelerated language acquisition, better or worse language proficiency, and different learning capabilities. Being bilingual may provide more advantages in terms of neural cognition.

Introduction

This paper will identify the differences between bilingual and monolingual language acquisition in children and explore their various differences, which could appear in later development. Being bilingual seems like an advantage in terms of the ability to communicate with more people across cultures, but there are other, subtler advantages that a bilingual speaker could have. These advantages may influence a bilingual child's socio-psychological development in ways they would not influence a monolingual counterpart.

A bilingual speaker can be identified as any person who is able to speak two languages, no matter whether the language was learned during childhood or during another stage of life (MacLeod et al., 2012). This paper will mostly focus on “simultaneous” bilinguals, those who have been exposed to two languages equally from before the age of 3 (Meisel, 2005). They could also be referred to as “balanced” bilinguals due to having native-like control and proficiency in both languages they speak (Oxford et al., 2015). Due to this divided exposure, bilingual children receive less total exposure to both languages in comparison to their monolingual counterparts. Nevertheless, bilingual children are still able to “develop linguistic systems that are comparable to monolingual peers at least in one language, or in both” (MacLeod et al., 2012).

Language Acquisition

Most humans are able to master a language. Those who are born blind can learn to speak; those born deaf can learn signs; and those with both can still communicate through motion and touch. Children with severe conditions, such as various neurological disorders, can acquire language with some delay in the process. Even those with extreme forms of mental retardation are able to acquire basic linguistic skills (MacWhinney, 2015). Learning a first language seems like an inevitable task at which the majority of the human race succeeds. Nevertheless, language “is the most complex skill that a human being can master” (MacWhinney, 2015). It fits our nature and is therefore a task that is easy to access.

According to Rice (1989), there are three main components to acquiring a first language for a child. Those components consist of the language to be acquired, which could be seen as the actual task to be mastered; the child and their predispositions and abilities to learn a first

language; and the environment and context in which the child is raised and learns to speak.

These components play a role in the child's linguistic development no matter the number of languages surrounding them. "Bilingual and trilingual children go through the same general stages of language acquisition as monolingual children do" (Maneva, 2004). First studies on this topic in the 1970s and 1980s established that bilingual language acquisition proceeds in the same way as monolingual acquisition (Meisel, 2005).

Since the 20th century, there have been debates about how exactly a child acquires a first language. The main language theorists include Noam Chomsky and Jean Piaget (Bacalu, 2011). Noam Chomsky (1980) argues that language abilities are innate. The fact that there is an optimal age for language acquisition, known as the "critical period," in which "a language is acquired more naturally and accurately" (Friedmann & Rusou, 2015) than at a later time in life, supports this theory. Children of the same age in different countries master similar language concepts of their own languages at approximately the same time in their lives. Another point that supports this theory is that one's parents do not need to "trigger" a child's language acquisition. The child will end up working to produce language on their own (Crabtree, 1999). In terms of cognition, Chomsky believes that language use and acquisition are autonomous. Therefore, a concept such as bilingualism should not hinder a child's developmental process, since she or he would have an innate ability to learn a language from the surrounding environment (Hakuta, 1987).

According to Jean Piaget, humans have a single general form of knowledge, which involves all domains of cognition, language included. To him, a child's language acquisition is the "product of a developmental process that begins during infancy" (Hakuta, 1987). Even though Piaget and Chomsky have contrasting views on children's cognitive development, Piaget also did not view

bilingualism as a threat to it. To Piaget, language “is not an important causal agent in the development of knowledge” (Hakuta, 1987). He considered language to be a mere reflection of one’s thoughts, a tool of expression, and a social factor. Piaget did not believe that language could affect the way one thinks (Baiju, 2010).

For bilingual children, the situation is the same as for monolinguals in terms of language acquisition. In some places around the world, “growing up bilingual is the norm rather than the exception” (Werker & Byers-Heinlein, 2008). Yet, being raised in a household where two languages are spoken simultaneously “leads to a range of possible linguistic outcomes in terms of language acquisition” (Patanakul, 2013). The possible outcomes are either that the child learns to be proficient in understanding and speaking both languages, or speaking one but only somewhat understanding the other, or the other way around. Only about 75% of bilingual children enter adulthood with equal proficiency in both of their languages.

Bilingualism even used to be considered a disability: “it was frequently assumed that bilinguals face serious difficulties in separating language systems and that they run the risk of ending up with mixed languages” (Meisel, 2005). Early research from the beginning of the 20th century tried to answer concerns that parents and educators had about bilingual children becoming confused and therefore being incapable of reaching proficiency in either language (Patanakul, 2013). Such opinions resulted from incorrectly designed studies that were biased against bilingual minority groups. Some researchers attempted case studies without appropriate training on their own children. In the 1980s, people’s interest in bilingualism rose drastically, and since then, more research efforts have been made on this topic (Meisel, 2005). There were no findings proving this impairment; rather, bilingualism is now viewed in a positive light.

Since there are various ways one can identify themselves as bilingual, the distinction within the term bilingualism was split between a “simultaneous” and a “successive” or “sequential” bilingual, which was first adopted by McLaughlin in 1978. There are distinctions within a category as well. For example, simultaneous bilingual children vary in terms of the age timeframe when they begin exposure to their second language. There is a difference between exposure from birth and exposure right before the age of three. Nevertheless, by that age, when language acquisition is not fully complete, the two languages have bidirectional influence, which is the influence the two languages have within a bilingual child (Yip, 2007).

Before there was sufficient research on bilingualism, parents and educators thought that children would face difficulty with a “one system stage” or the unitary language stage hypothesis (Patanakul, 2013). This stage in a child’s development would involve the child mixing the grammatical concepts of two languages in their speech (Meisel, 2005), which is due to previous misconceptions that a child is born with just one linguistic system to learn only one language (Patanakul, 2013). Early beliefs regarding this theory indicated that a child would not be able to differentiate between two language systems until the age of 3, or, as later findings suggested, the age of 2. However, various further studies have proved that children could tell the difference between linguistic systems even earlier, before turning one year old, despite not being able to produce speech. Furthermore, when bilingual children do mix their two languages, it can be “explained as a particular type of bilingual language use” (Meisel, 2005).

Monolingual children are able to distinguish two different languages almost from birth. This innate ability exists not only within humans, but also in tamarin monkeys and rats (Sebastian-Galles, 2010). This ability was tested using the habituation, or familiarization,

method, which is defined by newborns' tendency to show interest in novel sensory cues as opposed to ones they are already "familiar" with. Babies are taught that when they make a simple movement, such as sucking on a pacifier in younger infants or turning their head in older infants, auditory cues will be summoned, specifically recordings of languages chosen for the study. After the infant has grown familiar with the recording of one language, the other stimulus is presented. The differences between the beginning and the end of the study show whether the infant was able to distinguish the difference in the recordings (Sebastian-Galles, 2010).

However, the ability in human children to distinguish languages from birth is only present when the languages heard are rhythmically different, such as Japanese and Dutch, or Spanish and Russian. Even so, babies could not tell a difference when the two dissimilar language recordings were played backwards. Newborns with two rhythmically different languages surrounding them in their environment grow up being conscious of the two separate linguistic systems. Infants who are bilingual but are surrounded by two rhythmically similar languages only become aware of the two separate linguistic systems at the approximate age of 4 months (Sebastian-Galles, 2010).

There are three classes into which a language can be classified according to its rhythm: stress-timed, syllable-timed, and mora-timed. Stress-timed languages, such as English or Dutch, include stressed syllables with strong vowels and unstressed syllables with reduced vowels. Syllable-timed languages, such as Italian or Spanish, consist of equally stressed syllables. Mora-timed languages, such as Japanese and Luganda, have syllables that are equally stressed but are characterized by being either long or short (Lieven, 2010). These classifications of languages can determine whether a child will be able to discriminate between two spoken languages early or not.

When two languages played for the children in the study are rhythmically similar, thus from the same rhythmic class, such as Spanish and Catalan, the babies could not discriminate between the two. With further studies, monolingual and bilingual children alike were able to distinguish two rhythmically similar languages at the age of 4.5 months, as long as one of the languages was their native language (Lieven, 2010). A more recent study by Molnar, Gervain, and Carreiras from 2013, which involved rhythmically similar Spanish and Basque speakers, proved that infants as young as 3.5 months old could distinguish the difference between the two. These findings fall in line with previous research on the topic. Not only that, but these studies prove that both monolingual and bilingual children are able to differentiate languages at a similar age, showing that bilinguals have no delay in development in comparison to monolingual children (Lieven, 2010).

Bilingual children show no preference when listening to two distinct languages spoken by their mother, such as English and Tagalog. Monolingual children showed a bigger preference toward their first language (Lieven, 2010). Because both monolingual and bilingual children are able to differentiate languages and therefore have preferences, there is no possibility that a bilingual's inability to discriminate certain languages comes from a lack of preference due to pre-exposure to more than one language (Sebastian-Galles, 2010). This means that a bilingual child is equally accustomed to both languages.

As newborns, children can differentiate between many sounds, or phonemes, known as consonants and vowels, that do not belong to their native languages. Over time, a child's sensitivity to those sounds decreases, and so they are unable to discriminate those sounds in other languages as adults. However, bilingual adults who learned both of their languages from birth are

still able to differentiate the sounds from their own languages, but not those from foreign languages (Werker & Byers-Heinlein, 2008). A bilingual's knowledge of various phonemes depends on their combination of languages.

When acquiring languages, monolingual or bilingual, one must also learn the possible combinations of those consonants and vowels within a language, called phonotactics. Depending on the language, there may be more or fewer phonotactics to learn. Therefore, a child's ability to distinguish phonemes and phonotactics mostly depends on the complexity of their language or languages and the amount of exposure to them (Werker & Byers-Heinlein, 2008).

Children worldwide are raised in bilingual or even multilingual environments, which vary widely for each child, and so the input of those languages is hardly ever balanced. The environment and frequency at which one hears the languages may contribute to a bilingual's brain being more "flexible," as suggested by studies by Bialystok in 2001 (Lieven, 2010). Yet, it is true that most, even simultaneous, bilinguals end up having a dominant language. This depends on both the individual preferences of the bilingual child and the environment in which they spend the majority of their time. Such a bilingual may have a "relatively full comprehension of both languages" but have varied skills in the production of one of them (Lieven, 2010).

An important factor that is always considered when comparing a monolingual child's development with a bilingual one's is that "cross-linguistic influence may manifest itself as delay or acceleration, sometimes simultaneously" (Unsworth, 2013). For bilinguals, a slower rate of language acquisition has been observed across numerous studies. However, there have been studies proving the opposite: acceleration. A study by Kupisch in 2007 showed that children who

speak German and Italian acquire German grammatical concepts faster than their monolingual German-speaking counterparts. Kupisch explains this with the fact that German has more complex concepts. For example, the German language has a determiner system that is more intricate, as there are more types in the language. Monolingual German-speaking children begin to use determiners at a later age than their Italian-speaking counterparts. Because this finding can only be attributed to the bilingualism of the German-Italian children, it is evidence of language acquisition acceleration (Unsworth, 2013).

More evidence about bilingual development acceleration comes from a study on the “complexity of phonetic inventories” by Fabiano-Smith and Barlow in 2010. The research suggests that bilingual children “reach the same level of complexity within their two languages within the same timeframe as monolingual children” (Unsworth, 2013). This could be considered evidence for cross-linguistic, or bidirectional, influence. This means that a bilingual child’s acquired knowledge in one language will help them acquire knowledge and concepts for the other. However, not all children exhibit cross-linguistic influence, even when all conditions for it are met. So far, there is no way to predict the appearance of cross-linguistic influence in a bilingual child (Unsworth, 2013).

Bilingual Language Acquisition Studies

In a study by MacLeod et al., simultaneous bilingual children were examined on the language input from their parents and the rest of their surrounding environment in order to determine the role that each of those factors plays. The study was performed on French-German-speaking children, where one of the languages was the majority language, French, spoken outside of the

home in the area of the study, Quebec, and one was the minority language, German, spoken only within a smaller environment, such as the home. The approach used in the home environment for this study was the one-language-one-parent approach, where each parent would only speak one of the two languages. This way, it would be possible to measure the amount of a language a child heard in one environment (MacLeod et al., 2012). The majority language, French, is already becoming more dominant for the children simply by being the one spoken outside the home, despite the fact that they have not even entered the majority-language-speaking schools.

The study mentioned above used a small sample, but it nevertheless showed how important a child's exposure is to a language in relation to the child's acquisition of said language. Due to more exposure in a majority language, the children's vocabulary input was comparable to that of a monolingual child with this language. The minority language was developing at a slower pace due to the more limited exposure time (MacLeod et al., 2012). This makes the child establish a preference between the two, which can further affect their bilingual, or non-bilingual, identity.

An earlier study, done by Elin Thordardottir in 2011, also examined bilingual children who are being raised in an environment that involves two different languages, French and English, spoken in the surrounding environment of either the child's home or outside of it. The children from this study were native speakers of both French and English living in Montreal, Canada.

This study also delved into the topic of a child's split attention when it comes to their native languages. With these findings, it was evident that bilingual children had comparable results to monolinguals when it came to word reception, but not so much with word expression

(Thordardottir, 2011). While taking each language of the child separately, there is a lack of vocabulary knowledge, known as the "vocabulary gap," in comparison to monolinguals

(Thordardottir, 2011). Nevertheless, combined vocabulary from both languages was much higher than that of a monolingual, which should benefit the bilingual individual in the future.

Unlike the study with French and German-speaking children, a study on French and English speakers includes two languages that have equal standing in the society of the area, which is due to the uniqueness of the region. Neither language has the status of a minority language or is associated with a specific socio-economic class. This study also involves a bigger sample, where the participants are children of equivalent age and socio-economic status, and those who have had no exposure to languages other than the two necessary for participation in this study (Thordardottir, 2011). The results of this study suggest a strong relationship between the amount of exposure a child has to a language and the level of its acquisition in terms of vocabulary. Thus, there is no bilingual norm, as the language performance of a child all depends on his or her personal language learning history, whether they had relatively balanced exposure or not (Thordardottir, 2011).

Not only does the quantity of exposure matter for the process of a child's language acquisition, but it also depends on the kind and quality of the input. Nowadays, it is not only the family that is able to impact a child's language acquisition, but also television, reading, friends, and other influences (Unsworth, 2013). According to Byers-Heinlein (2013), bilingual children's environment is "particularly noisy" compared to that of monolinguals.

Bilingual children are supposed to determine which language concepts apply to which of the two systems they encounter. A false belief is that within a bilingual child's environment, the two languages are "neatly divided"; however, empirical data suggests that most bilingual infants

“regularly encounter two languages from the same person, in the same environment, and/or within the same sentence” (Byers-Heinlein, 2013). If the family member who speaks with the bilingual infant is also bilingual, the sounds and language that this member produces will be different than those of a monolingual counterpart. This way, bilingual children receive the opportunity to hear more varied auditory inputs than a monolingual could have. Due to this finding, simultaneous bilingual children may provide a new “test case for how added noise in the system impacts perceptual development” (Byers-Heinlein, 2013).

In terms of grammatical abilities, a 1993 study on English and Spanish bilingual children by Fenson et al. was performed in order to estimate the grammatical complexity of children’s language performance. It appeared that monolinguals were superior to bilinguals. In order to reassess this, bilingual dominance groups were established to identify the participants by the amount of exposure they had had to a language.

Those bilingual children who had more exposure to a certain language out of the two did not have any significant difference in performance in comparison to a monolingual counterpart (Unsworth, 2013). These findings prove that the differences in language performance between monolinguals and bilinguals are quantitative rather than qualitative. This means that “bilingual children typically make the same developmental errors as their monolingual peers” (Unsworth, 2013), but due to limited exposure, bilingual children do not have the time to acquire as many of the language’s grammatical structures.

Apart from the common monolingual and bilingual children, there are those who are exposed to three or more languages. Various studies have included children who are surrounded by more

than two languages: trilinguals or multilinguals. Children surrounded by multiple languages are still able to learn them simultaneously (Unsworth, 2013). As with bilinguals, in terms of preference and proficiency, there is a possibility for one of the languages to become dominant for the multilingual, and even a second dominant, and third, etc. The more languages a child is surrounded by, the less total exposure time there is for each one. This may lead to even more quantitative difference between children who speak different numbers of languages (Unsworth, 2013).

According to studies by Sebastian-Galles (2010), bilingual children do not necessarily have delayed development, and they are able to discriminate two different languages within their environment at the same time, learn word-object associations, and tune their inventories of phonemes. However, the developmental process for bilingual children does differ. For example, bilingual children develop their own processing strategies, which allow them to cope with the amount of linguistic input. Also, this double input makes bilingual children pay more attention to additional auditory cues, thus making them more receptive to discriminating sounds (Sebastian-Galles, 2010).

Bilingual children also have the upper hand in differentiating languages from the same rhythmic group, such as Spanish and Italian, in contrast to monolingual children. However, bilingual children failed in some tasks unless language-specific cues were involved, which is the case in word-association studies. Although the special strategies bilinguals use for coping with language input provide an advantage for word-learning frameworks (Sebastian-Galles, 2010).

Bilingualism in Later Life

Bilinguals are slower to name pictures in comparison to monolinguals, but the time spent accessing the meaning of those pictures does not differ. The fact that a bilingual is unable to name things as quickly as a monolingual can be explained by the fact that bilinguals are less practiced in both languages and “words in their mental lexicon are effectively at a lower level of functional frequency” (Abutalebi & Green, 2007). Other possibilities to explain this delay are that bilinguals might be going through a competitive process while speaking, or that there is an output buffer where the unnecessary or “non-target item” needs to be suppressed or eliminated (Abutalebi & Green, 2007). Such an outlook on something as seemingly simple as speech shows the previously unseen difference between monolinguals and bilinguals.

Three recent findings from the research of Kroll et al. in 2015 have shaped modern-day research on bilingualism. The first is that both languages are active “when bilinguals listen to speech, read words in either language, and plan speech in each of the two languages” (Kroll et al., 2015). Thus, even if one is unaware of the influences of both languages, they compete for cognitive resources, and one must learn to control them in order to keep fluency in both languages.

Another finding is that not only does the dominant language influence the second language, but the second language influences the dominant one as well. Because of this, it is not the age of bilingual acquisition that determines the influences of the languages on each other, but rather the level of proficiency in both languages. This is due to the fact that “the neural support for processing the two languages is largely shared” (Kroll et al., 2015). The permeability within the brain makes simultaneous and successive bilinguals similar.

The third discovery is that speaking two or more languages has consequences outside of language acquisition. The benefits include abilities such as ignoring irrelevant information, easily switching between tasks, and resolving conflicting cognitive alternatives (Kroll et al., 2015). Thus, there is a need not only to be able to control both languages at the same time, but also to control the ways those languages are being used. All of these discoveries contribute to the advantages of being bilingual (Kroll et al., 2015).

As aforementioned, bilinguals tend to be better at visual language discrimination, selecting necessary information and ignoring the irrelevant, and adjusting response criteria in a changing environment in contrast to monolingual counterparts. According to Sebastian-Galles et al. (2012), this tendency has been observed not only in adults but also in children and infants. The main aspect of bilingualism that pertains to this capability is bilingual children's "additional computations that they must constantly make to inhibit one of their two languages, so that only one is used even though both are active and potentially available" (Sebastian-Galles et al., 2012).

However, the inhibition hypothesis in children was disproved by a 2012 Sebastian-Galles study. Advantages of bilingualism in infants can be seen as early as 7 months, which is long before a child is able to produce language and therefore have the competing inhibition process for one of two active languages in the brain. Sebastian-Galles et al. suggest that the real reason for bilingual advantages at such an early age is actually that language discrimination helps a child develop compartmentalization. This means that a child, due to exposure to two languages, has to keep the two languages separate within their mind and so learns to separate details necessary to complete a task (Sebastian-Galles et al., 2012).

Bilingual children are not only able to keep their own two languages apart, but they are also better at recognizing distinctions between languages they have never listened to before than their monolingual counterparts. The capability of bilingual children to make these distinctions with complex, naturalistic stimuli “provides complex, naturalistic stimuli and without any feedback” (Sebastian-Galles et al., 2012). This study is the first to prove that bilingual advantages in infants stem from their trained language distinction framework.

The benefits of bilingualism could appear in one’s later life. For example, individuals with Alzheimer-type dementia, which usually comes with aging, were more likely to be diagnosed five years later if they were bilingual rather than monolingual. Such an advantage suggests that bilingualism can protect one from these kinds of diseases. Bilingualism “uses cognitive networks that enable selection and decision making in the rest of life outside of language are also engaged when language is used” (Kroll et al., 2015). Thus, being bilingual from a young age improves cognitive processes in a way that playing an instrument skillfully or playing video games would. One does not take part in these activities as often as one would use language.

It is evident that when a bilingual produces even the simplest task of speech production, both languages are active (Kroll, Bobb, Misra, & Guo, 2008). Since speaking is a top-down process that requires one to retrieve an item from all available linguistic information, two languages being active simultaneously makes sense, in contrast to when one is going through bottom-up processing, such as word recognition. According to the neuroimaging and behavioral studies performed by Kroll et al. in 2008, the two languages of a bilingual speaker are not only activated in a parallel way, but they also “compete for selection during spoken production” (Kroll et al., 2008).

In adults, unintentional and rare “cross-language intrusion errors” (Gollan et al., 2013) can occur. This is a rich source of how a bilingual speaker uses their two languages and is able to pick between them. There has been little research done on these intrusion errors, partially due to the fact that it is difficult to make one produce them in an experimental setting. By comparison, older bilinguals made more of these “errors” compared to younger bilinguals. Because older bilinguals have cognitive decline due to aging, it can be inferred that not only do language-specific mechanisms influence the possibility of making such an error, but also mechanisms in charge of the entire domain of language (Gollan et al., 2013).

There are two hypotheses as to why bilingual speakers tend to mix languages in their speech, even accidentally. The first hypothesis involves inhibition, but instead of language inhibition being parallel, the dominant language is the one inhibited. The term “dominance reversal” explains this hypothesis through the fact that some bilinguals have a harder time switching into their dominant language than their less dominant one. This concept provides evidence for inhibition, since, unusually, it is the more frequently used language that is harder to retrieve (Gollan et al., 2013).

The second hypothesis, the asymmetry hypothesis, states that one of the two languages within a bilingual speaker functions as a “matrix language, providing syntactic frames and the majority of words, morphemes, and inflections, as well as dictating word order” (Gollan et al., 2013). With the matrix language hypothesis, language switching or retrieval should occur automatically. If this hypothesis were truly the case, there would be fewer cross-lingual intrusion errors.

Languages also have differing grammatical structures and word-order requirements; therefore,

filtering one language through another would prevent the mixing of linguistic concepts (Gollan et al., 2013).

According to a study on children's beliefs by Byers-Heinlein and Garcia (2014), there are prominent differences in worldview between a monolingual and a bilingual child. For the study, children of similar ages, 5-6 years old, were asked certain questions about whether they viewed things as innate or not. The children participating were monolinguals, sequential bilinguals, and simultaneous bilinguals. Sequential bilinguals have had the opportunity to learn something, language, from the environment (Byers-Heinlein & Garcia, 2014). Simultaneous bilinguals, on the contrary, have little experience of gaining knowledge from the environment, as when they acquired language, it was a more unconscious process.

The results showed that, indeed, the groups who had less experience learning from their surroundings had the tendency to believe that physical and behavioral traits of people and animals were inborn. Sequential bilinguals connected traits to the environment. This finding shows how an "everyday single domain" can have a huge impact on a person's standpoint on various issues. In addition, this study shows that "early bilingualism systematically alters children's cognition" (Byers-Heinlein & Garcia, 2014). Earlier studies linked bilingualism to cognitive processes, but this one proves that it influences conscious thought as well.

Identity

According to Karmela Liebkind, there are multiple factors one could consider in order to decide whether or not one feels that they have a bilingual identity. The obvious one is origin, when the family is bilingual and there are two languages from the beginning of one's life. The second

factor is language proficiency, whether one is proficient or equally fluent in two languages. The third factor is “language function,” whether one can freely switch between languages out of their own choice or due to the demands of society. The last and most important factor is one’s attitude. If one feels bilingual, then that is how others should identify them, and not the other way around (Liebkind, 1995).

Identity is a psychological term for how one defines oneself, “how we experience ourselves, and with what other individuals and groups we identify ourselves” (Liebkind, 1995). One who speaks two languages from birth does not necessarily have a bilingual identity. In terms of language proficiency, the person would be bilingual, but the identity is completely up to the person. On the other hand, one can be less proficient in one language than the other, but still consider their identity split between the two languages (Liebkind, 1995).

Even if one is equally proficient in both languages and is seen as bilingual to everyone else, even if others forcefully disagree, if the person does not feel a connection with both, their identity is that of a monolingual. Identity does not equal language proficiency. If one is completely fluent in both languages but feels a connection only toward one of the two, the use of the other language is purely “instrumental” (Liebkind, 1995).

In a study by Oxford et al. in 2015 on the psychosocial view of languages, a bilingual participant defined their view on language: “a language is a mentality...” This participant, named Marco, had lived in contrasting cultures and so understood different mentalities. Language also pertains to culture, which is also one’s mentality or the “collective mental programming that distinguishes groups from each other and that influences thought patterns” (Oxford et al., 2015).

Discussion

Simultaneous bilingual children are not uncommon, yet not enough attention is paid to the differences in their developmental processes in comparison to monolinguals and their socio-psychological advantages and disadvantages. From being considered an impairment to being understood as something that holds neural-cognitive benefits in terms of health, contemporary research on simultaneous bilingualism has expanded. Simultaneous bilingualism used to be viewed as an obstacle to learning a language with proficiency, which was disproved (Patanakul, 2013). Nowadays, there is proof and ongoing research about how bilingualism mitigates possible diseases such as Alzheimer-type dementia (Kroll et al., 2015).

A bilingual infant's development differs in multiple ways from that of a monolingual. The development is not hindered, but rather could be accelerated, especially in terms of the acquisition of linguistic concepts such as grammar. The acceleration depends on the specific languages that are spoken within the child's surrounding environment and those languages' complexities. Language acquisition acceleration is thus attributed to individual situations of children. As there is no concrete way to predict whether or not a child would experience acceleration with language development, this question requires future research (Unsworth, 2013).

Other than providing long-term benefits from birth to a child, an issue that is seen with childhood bilingualism is the minimal total exposure to each language that a child receives (MacLeod et al., 2012). Since there are two languages being spoken, the simple quantity of vocabulary and concepts is lower in comparison to the amount of exposure a child receives with only one

language. However, this does not interfere with the child's capability to become completely proficient in both languages. Not only that, but the total amount of vocabulary acquired by the bilingual child in both languages outweighs that of a monolingual (Thordardottir, 2011).

In terms of identity, even if one is born speaking two languages, it does not necessarily mean that a person will feel themselves to be someone who is bilingual, or someone who is connected to both languages in the same way. Depending on the circumstances, a person will indeed lean toward a more dominant language, or one that they feel more emotionally connected to. Just because one speaks two languages with equal proficiency, it may seem to others that one would see themselves tied to both languages similarly, while they may identify only with one (Liebkind, 1995). Therefore, being bilingual provides a multitude of subtle advantages in one's cognitive processes.

Researching bilingualism, especially simultaneous bilinguals, is a difficult procedure due to the amount of calculation needed before a study. Before a participant can be assigned, amounts of exposure to each language need to be measured. A method needs to be designed to assess the linguistic abilities of a participant who has not said their first word yet (Werker & Byers-Heinlein, 2008). It is difficult to make general conclusions about bilingualism when circumstances may vary from child to child, along with the environment. Due to this, many findings are restricted to the sample population that was used in the study. Using different groups of bilinguals in a study would make more generalizable results (Werker & Byers-Heinlein, 2008).

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