**Look Who's Talking:**

**Language acquisition in monolingual, bilingual and autistic children**

Language acquisition is something that we all experience but what people often do not realise is that there may be differences between individuals in the stages they go through and how quickly they develop their language skills. This essay will present some of the findings from research into language acquisition for three groups of children: monolingual, bilingual and autistic.

**The typical case – The monolingual child**

There are four linguistic approaches that try to explain how language is acquired by children from infancy. Firstly there is the behaviourist approach: this approach links language acquisition to imitation. The behaviourists believe that a child learns how to speak by listening to their parents and imitating the same language patterns. As parents correct children’s mistakes, the basis for a child’s knowledge of language can be formed. One of the problems with this approach is that children do not always gather correct forms from imitation of their parents. Another problem is that this theory does not explain how children can produce structures that they have not heard before.

The second approach is the cognitive approach; after having worked a great deal on the intellectual development of children Jean Piaget, a Swiss psychologist, suggested that children must understand the idea of something before being able to describe it linguistically. For example, children will only understand the past tense when they understand the concept of past time. This theory seems to work best at explaining how children’s language progresses during the first eighteen months.

The third approach is the nativist approach; nativists believe that children are born with the skill of instinctively being able to understand and process language when it is spoken to them. When a child is addressed, their brain will begin to make sense of utterances as it is said to be ‘programmed’ to do so. A criticism of this theory is that it does not take the aspect of age into account or the importance of imitation.

The last theory is the interactive approach; this approach to language acquisition focuses on how parents or adults interact with children compared to interaction between two adults. They noted that when adults talk to children they give them distinct opportunities to take part in the conversation.

There are many stages involved in language development for an infant: Although children will not say their first words until around the age of 1, their language starts to develop from when they are born, from making small noises and responding to parents smiles to babbling and eventually making clear utterances.

For the first two months, a child will only cough and make soft noises. Between two and five months, a child will begin to coo and respond to parents’ smiles and different tones of voice. He or she will also develop physically; his tongue will begin to move horizontally and vertically, therefore his lips and tongue begin to play a greater part in his imitation skills. This development lets the child interact more with his parents and have more of a two-way communication. Between six and twelve months, a child will recognise some words and be able to reply predictably (say bye-bye, say night-night). The rhythm of the child’s babbling will also sound more like adult speech, and he/she will be able to vocalise his emotions. A child will say his first words between the age of a year and eighteen months and the child’s language becomes more individual. From this period, a child will learn ten to twenty new words a month, and most of the child’s communication will be monologue.

From eighteen to twenty four months, a child’s vocabulary will have reached more than two hundred words and he will be easier to understand. A child also receives feedback from his parents which encourages him to experiment and find out what is and is not acceptable grammatically. His grammatical sequences are limited (for example, baby go; sock red) but adults will begin to respond to these utterances and the child will start to feel like a part of real communication. At this stage, a child will also start to ask questions and understand the use of negative words. Between the age of two and three, a child’s language and communication skills develop rapidly: his vocabulary expands hugely, which makes utterances longer; his pronunciation becomes closer to adult form, and the sounds he makes are easier to understand. The use of auxiliary verbs[[1]](#footnote-1) becomes more accurate at the age at three and questions and negatives are more frequently used. Pronouns[[2]](#footnote-2) are also understood and used quite often, although there can be confusion with possessive determiners[[3]](#footnote-3). The grammar and pronunciation become more consistent between the ages of two and three and a child’s conversational skills become more sophisticated.

After the age of three, a child can speak fluently and with sophistication as his vocabulary will have expanded greatly. The length of the child’s sentences will also get longer(with words such as because, after, when) but past tense verbs will still be confused(for example, broked/breaked, sitted/sat). By the age of four, children generally learn the most about conversational skills; they learn to initiate dialogue, they can respond more appropriately to those they are speaking to, they can ask for clarification if they have not understood). When it comes to language development, a four year old will begin to sort out any grammatical inaccuracies, such as mistakes with past tense verbs, and his language will become more adult. By the age of five, a child will know over 2000 words and will be able to use more complicated grammatical structures. Between the ages of six to eleven, this would be a child’s last stage of language acquisition; here, they would learn how to recognise differences between similar sentences and metaphorical uses of language. By the age of eight or nine, most grammatical structures will be understood, although semantics will continue to cause problems until the age of eleven.

**The bilingual child**

Worldwide, it is estimated that there are as many bilingual children as there are monolingual children[[4]](#footnote-4). There are three different types of bilingualism: simultaneous, receptive and sequential. Simultaneous bilingualism is when a child learns two languages from birth, going from speaking no languages at all to speaking two simultaneously. Receptive bilingualism is when a child can understand two languages but can only speak in one, including children who had exposure to a second language throughout their lives but barely spoke it. Sequential bilingualism is when someone learns a second language after having learnt their first, after the age of 5 or even as an adult.

There are many common myths and misunderstandings regarding bilingualism. For example, some people regard child bilingual code-mixing (when children use the two languages in the same sentence) as a bad thing, but as will be shown later, it has been proven to be a natural process of child bilingualism. Other common misunderstandings are about whether it takes bilingual children longer to acquire language. This is a myth that was popular back in the middle of the 20th Century. Many studies around this time found evidence of a “language handicap” in simultaneously bilingual children, linking bilingualism with a lower intelligence. However, many of these studies did not take all factors into account. For example they did not consider the difference in social status, nor did they consider the levels of education. Since then much research has shown that bilingual children are not delayed in their language acquisition, yet many parents and teachers still worry that raising or educating children bilingually will be a disadvantage to them academically.

Much research has been done in the last few decades regarding bilingual language acquisition. This research has been influenced by two main approaches. The first called ‘The Unitary Language System‘, was put forward in a study by Volterra and Taeschner[[5]](#footnote-5) in 1978. It stated that children will mix up their languages and will be unable to tell them apart until the age of two. The authors’ theory is that there are three main phases. During the first phase, until age 3, the child has one language system for both languages. The second phase is when the child can tell the difference between the vocabulary of his first and second language but still mixes up the grammar of both. The last phase is when the child can tell both the vocabulary and the grammar apart for both languages and becomes fully bilingual.

Since this theory, another hypothesis has emerged suggesting that there is not one but two separate language systems for bilingual children, namely ‘The Dual Language System Hypothesis’. This theory claims that in order to learn both languages at the same time, bilingual children have separate language systems for each of their languages from birth. Whereas monolingual children learn one term for one concept, bilingual children do the same but with both languages (known as translational equivalents). Recent studies have provided strong support for this theory (Meisel 1989, De Houwer 1995, Paradis & Genesee 1997).

When it comes to comparing bilingual and monolingual children, an important aspect to consider is the acquisition of vocabulary. Evidence from a number of studies shows that, in their first 3 or 4 years of language acquisition, bilingual children amass less vocabulary than monolingual children when each of their languages is considered separately. However, when both languages are taken together, their total vocabulary is the same as or higher than that of the monolingual child.

For example, in 2006 Thordardottir, Rothenberg, Rivard & Naves[[6]](#footnote-6) did a study comparing 28 French/English two and a half to three year old children’s levels of vocabulary. Some children were monolingual, others were bilingual and they found that the bilingual children had much lower scores in nearly every language category in comparison to the monolinguals, scoring similarly to the monolinguals in one section only. From this study, the authors concluded that bilingual children score lower and appear to have less vocabulary than monolingual children when they are tested in one language only. However when they add together the vocabulary from both languages, bilingual children appear to have a larger vocabulary inventory than monolinguals.

Another important aspect that arises when looking at the differences between monolingual and bilingual children is the acquisition of grammar. As bilingual children have half the exposure to each language, this can have an effect on the rate at which they learn grammar. The role of the dominant language is also a key factor.

A study that shows this was done by Paradis et al[[7]](#footnote-7) in 2007, where they took four-year-old French/English bilingual children and tested them on the past tense in English and its French equivalent(the passé-composé). The study showed that bilingual children were the same as monolinguals when tested on the regular past tense or passé-composé in their dominant language. English dominant-bilinguals struggled more with the irregular forms of the past tense than the monolingual children did; however, given that the irregular forms of the passé composé are less complicated than in English, French dominant-bilinguals’ results were the same as their monolingual peers. The authors’ conclusion was that although there are slight differences between the monolingual and bilingual children’s knowledge of grammar, there is certainly not a two-year delay, even though bilingual children will have had half the exposure to a language than monolinguals. These differences may become less noticeable or even disappear completely in a child’s non-dominant language by the age of six.

Bilingual children often interact with other bilingual children, and when they do so both children can ‘mix up’ their two languages and therefore code-mix. Code-mixing or code-switching, as previously explained, is when a bilingual child uses both languages in the same sentence or utterance; it is a natural part of bilingualism. Bilingual children are said to code-mix more when speaking in their language that is not dominant. Sometimes when bilingual children interact with monolingual children, especially if they are speaking in the language that is not dominant, they may code-mix if they cannot find the right word in that language. There are other theories to explain why bilingual children code-mix; one is that it is so they can emphasise their point. Other studies have shown that most of the time when children code-mix it is because of their confusion between the two languages. Code-mixing is not only inevitable for a bilingual child but also is considered as a ‘social norm’ as it can be influenced in individual families.

An example of English-French code-mixing is ‘big bobo’ meaning ‘big bruise’ or ‘cut’; here the child is mixing up English and French in a single utterance. Parents worry that this is a sign of delay of language acquisition or confusion, but it is actually a natural process for a bilingual child.

From infancy, bilingual children have exposure to two languages, and two cultures; this makes it more likely for them to be able to see language as a process as well as a thing. It has been suggested that bilingualism can influence and enhance a child’s conversational skills, due to this early exposure to two different social environments. Studies have shown that bilinguals develop better listening skills than monolinguals as they are used to going from one language to another and differentiating between them. However when it comes to bilingual children’s conversational understanding, little is known about just how much bilingualism influences this phase. Although there are theories being developed about bilingual children having an advantage in regard to advanced conversational skills, there has been little proof to back the idea.

An emerging area of research, neuroscience, has been using new technology to understand the functioning of the brain and this has provided further insights into the differences between monolingual and bilingual children.

In 2008, Kovelman, Baker and Petitto[[8]](#footnote-8) did a study involving adult Spanish-English bilinguals and English monolinguals and they compared the monolinguals and bilinguals’ language brain areas to see if there was a difference between them when performing a language task. How the bilinguals behaved and their brain activity were both different when they were speaking in English and in Spanish. This provides insight into the decades-old question of whether bilinguals have one or two linguistic systems. This study supports the ‘Dual Language System Hypothesis’, suggesting that bilinguals have two completely separate language systems, as the bilinguals showed that their brains went through different processes when they spoke in English versus Spanish. Furthermore, the results from this study contradict the theory of bilinguals having a ‘fused’ language system and suggest that they have two differentiated systems, as they showed to have different neural patterns for each language. A common worry among parents and teachers is that a child growing up with two languages simultaneously may be at a disadvantage in comparison to monolingual children academically. The results from this study do not support this belief as it proves that adults who learnt two languages from infancy are able to fully differentiate between them and have two separate language systems neurologically.

More recently, scientists have also found out that bilingual adults have denser gray matter (brain tissue that processes information via nerve cells and fibres) especially on the left part of the brain, where most language and communication skills are controlled. This is more common in people who are simultaneously and sequentially bilingual. This suggests that for those people who are bilingual from an early age, the structure of their brain can change significantly. Another area of research has been to do with dementia; one study, by Paradis, J., Genesee, F., & Crago, M.[[9]](#footnote-9) in 2000 has shown that the onset of dementia was delayed by four years in bilinguals compared to monolinguals. Although scientists are not entirely sure how bilingualism could delay the onset of this disease, some think it could be that speaking two languages can increase the blood and oxygen flow to the brain, keeping nerve connections healthy. These factors are said to delay or even prevent dementia.

Bilingual children are said to be better than monolingual children at blocking out distractions and focusing on a task. This ability has also been found in bilingual adults, particularly those who are simultaneous bilinguals. The theory behind this is that because bilingual children are able to switch languages while tuning out any distractions, this strengthens the brain’s ability to focus and ignore distractions or information that is not needed. Other advantages of being bilingual include the ability to learn and remember new words easily, to learn a new language at a later stage much more easily than a monolingual and to connect with others.

Bilingual children have also proven in various studies to be just as good if not better at certain activities than monolinguals. For example two psychologists, Ellen Bialystok and Michelle Martin-Rhee, did a study[[10]](#footnote-10) in 2004 where they took bilingual and monolingual three-year-olds and gave the children two mental tasks to complete. The first involved them having to sort shapes by colour (red squares in the red bin, blue circles in the blue bin) and both groups completed the task easily. The second was more difficult; the children were asked to sort by shape, meaning they had to put a shape in a bin marked with a different colour. The bilinguals were much faster at doing this task. The conclusion from this study is that bilinguals are better at problem solving and performing mentally demanding tasks. In some studies, researchers likened a bilingual’s ability to ignore distractions, stay focused on a task and switch attention easily from one thing to another, to remembering a sequence of directions while driving.

Despite the constant concern from parents and teachers that bilingual children will struggle in school compared to children who have grown up with one language, studies over the last few decades have proven that they actually have many more advantages. Although the ability to speak multiple languages is becoming more and more common, it is still a remarkable skill to have; not only can bilingualism help a child to succeed academically, but it has been proven to enhance one’s social and conversational skills and defer dementia and Alzheimer’s disease.

**The autistic child**

Autism is a complex developmental disability that typically appears during the first three years of life and affects a person’s ability to communicate and interact with others. Studies have shown that it is four to five times more common in boys than in girls. The three main characteristics of autism are problems in social interaction, verbal and non-verbal communication and repetitive behaviour. It is a ‘spectrum disorder’, meaning that it can affect people differently and to varying degrees; for example, Asperger’s syndrome is one form of the disorder but those diagnosed with it acquire language normally with only a slight delay. Those with autistic disorder show a longer delay in language acquisition and need speech therapy support.

A manual[[11]](#footnote-11) that includes all recognised mental disorders (DSM IV, 2004) defined one of the major characteristics of the autistic syndrome as a huge delay in language acquisition. A monolingual child experiences multiple stages of language acquisition, including imitating their parents and learning from their mistakes when corrected. These are two examples of phases that an autistic child does not go through, instead a child with this disorder acquires language in three stages.

For normal children at the first stage of acquisition, they produce the same amount of vocabulary and grammar whereas autistic children produce more common nouns. However at the second stage this difference fades; both normal and autistic children produce around the same amount of verbs and common nouns, although normal children produce more grammatical words. At the last stage of acquisition, normal children have more than three hundred words in their vocabulary inventory and a strong amount of grammatical words, meanwhile autistic children have slowly progressed in both vocabulary and grammar. Infants with autism are also delayed regarding their first words. Whereas normal children would say their first words around 11 months, Aspergic children would be nearer to 15 months and autistic children can be as late as 38 months.

Children with autism are not only delayed with acquiring language, but also have problems in understanding grammatical rules and vocabulary. A study by Nadège Foudon, Anne Reboul, Sabine Manificat[[12]](#footnote-12) in 2007 provided evidence to support this, as they studied eight autistic children who were at different stages of language acquisition. They noted that the children made many grammatical errors; one child did not understand the meaning of verbs. The authors asked him to show an object and he would give it to someone instead. They make mistakes with nouns and preposition; the child will put an object in somewhere when he would be asked to put it next to it. Some children also did not understand location; the child did not recognise any location mentioned and only found the right location when the experimenter would show him.

One huge problem for autistic children is also understanding pronouns and using pronouns. For example if an autistic child was asked ‘are you wearing a red shirt today?’ the child could reply with ‘you are wearing a red shirt today’ instead of ‘yes, I am wearing a red shirt today.’ A study by scientists at Carnegie Mellon University tried to see if this misunderstanding of pronouns could be explained neurologically. The participants in the study were split into two groups; young adults with high-functioning autism and young adults who did not have autism. The researchers used MRI scans to look at the different areas of the brain that were activated when both groups were doing a task where they had to frequently use and differentiate between pronouns. The results showed that not only were the group of young adults with autism much slower and less accurate than the other group at processing pronouns, but the MRI scan showed that that group also had diminished synchronisation between the frontal and posterior area of the brain. From these results, they concluded that this lack of synchronisation could explain why some children with autism will repeat the same pronoun they heard in a question that was directed to them (for example, replying with ‘you’ again instead of ‘I’). This lack of synchronisation could also have something to do with why adults and children with autism have problems with social skills; if autistic people have difficulty going between their perspective and the perspective of someone else during a conversation, they are bound to reply with responses that aren’t relevant or correct.

Communication problems for people with autism vary, and it can strongly depend on the intellectual and social development of the person. Some autistic children may have problems with interaction and only reply with one-worded answers, while others may be able to easily speak to anyone about different topics of interest. Although some autistic individuals have problems with word and sentence meaning, intonation and rhythm, the majority have no problem with pronunciation; their difficulties lie in the ability to use language verbally.

These difficulties in communication can start from the first year of an autistic child’s life, including a delayed onset of babbling, unusual gestures and minimal responsiveness to parents. In the few years that follow, autistic children have less frequent babbling, less word combinations and their gestures are often less combined with what they are saying.

An example of this delay and difficulty in communication can be seen in a study done focusing on a young child named Anderson[[13]](#footnote-13). He was a full-term baby delivered with no complications. Anderson's mother said that as a baby and toddler, he was healthy and he learnt the normal milestones for an infant (sitting, standing and walking) at the same rate as any other child. At the age of 3 he was described as low-tone, with poor imitation skills. His communication development was delayed; at 3 months of age he began babbling, but had still not said his first word at the age of 3. Anderson communicated through gestures; he pointed at things he wanted or took the communication partner’s hand and placed it on the object. He played normally when he was sitting down and used eye contact normally with whoever he was playing with; yet in day-to-day conversation, he would avoid all eye contact. He also often seemed to be absent-minded, and barely responded to his name. Anderson is an example of an autistic child who has difficulty with expressing himself and who finds it easier to communicate through gestures and non-verbal means. Concerning the different degrees of autism, he would be considered severely autistic.

As many studies have been carried out to do with autistic children’s communication problems, some common issues have been outlined. When in conversation with an autistic child, the child may find it difficult understanding orders or knowing how to respond; the child may lack the communication skills to answer ‘yes’ or ‘no’. If it is the first time someone is speaking to this child, he may suffer from anxiety and will find it hard to cope in a new situation with an unfamiliar adult. When in a testing situation, an autistic child may lack motivation as she does not understand the notion of trying to do her best. Distractibility and disorganisation have also been linked to autism and can make testing situations even harder.

One study by Foudon et al in 2007 suggested that autistic children are linguistically competent, and understand the majority of what they hear and are taught. The only difficulty they have lies in their performance. This hypothesis strongly supports the idea that autistic children are underestimated in terms of their knowledge and understanding, because they find it difficult to reply. In another study by Noens et al in 2006, the researchers came to the conclusion that about a third to a half of individuals with autism do not acquire enough speech to get them through day to day conversations.

**Conclusions**

After having analysed these three cases of a child learning a language, a few conclusions can be drawn. Firstly, the constant question asked by parents, teachers and even students: do bilingual children lag behind their monolingual peers academically? We can conclude that, due to multiple studies involving the comparison of monolingual and bilingual children, bilingual children are not only just as good as monolingual children in certain academic activities but are superior to them in others. Another topic of debate is about autistic children, and if they can ever acquire the same level of language as normal children. Although, due to the different degrees of autism, there can be some children with more advanced linguistic skills than others, autistic children can never acquire the same level of language as normal children because of their weak communication skills. We can conclude that even though an autistic child may understand just as much as a normal child linguistically, their communication skills are so inferior that they could never be considered equal with a normal child linguistically.

Research focusing on autistic children, especially in neuroscience, has increased greatly over recent years. Due to this research, scientists have managed to think of certain theories as to how an autistic child’s brain works linguistically. Two decades ago there was very little neurological research focusing on autistic children and now, there has never been more interest in the field. Another area of research that has grown remarkably in the past few decades, and is continuously attracting more interest today, is language acquisition in bilingual children. The amount of studies that are now being done focusing on bilingual children and the differences between monolinguals and bilinguals are increasing yearly. After one study in the 20th century, it was said that bilingualism made an individual weaker linguistically and overall academically. Nowadays, it is considered as a wide area of research, with many different theories and approaches as to how bilinguals differ from monolinguals.

Due to the increase in studies concerning how both bilingual and autistic children acquire language, more and more theories are emerging each year. These theories are slowly gathering together an increasing amount of information regarding how we learn a language, and it is to be expected in the coming years that scientists and linguists understand more fully how a child learns and develops language. In any of these cases, monolingual or bilingual, normal or autistic, the power of what language can help someone achieve should never be underestimated.

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1. A verb used in forming the tenses, moods, and voices of other verbs. For example, the primary auxiliary verbs in English are be, do, and have. [↑](#footnote-ref-1)
2. A part of speech that replaces a noun in a sentence, assigning people or things as the subject (for example, he, she, them) [↑](#footnote-ref-2)
3. A determiner used in front of a noun to express possession or belonging (for example, my book, his bag) [↑](#footnote-ref-3)
4. ParadisJ., Crago M., GeneseeF.: *Dual Language Development and Disorders: A Handbook on Bilingualism and Second Language Learning*, p.256 [↑](#footnote-ref-4)
5. Volterra V., Taeschner T., "The Acquisition and Development of Language by Bilingual Children." *Journal of Child Language 5.2,* pp. 311-26 [↑](#footnote-ref-5)
6. Thordardottir, E., Rothenberg, A., Rivard, M. E., & Naves, R. Bilingual assessment: Can overall proficiency be estimated from separate measurement of two languages? *Journal of Multilingual Communication Disorders*, pp.1-21 [↑](#footnote-ref-6)
7. Paradis J., Tremblay A., Crago M., (2008) Bilingual Children’s Acquisition of English Inflection: The Role of Language Dominance and Task Type, pp.32-45 [↑](#footnote-ref-7)
8. Kovelman I.,  Baker S., and Petitto L.A, “Bilingual and Monolingual Brains Compared: A Functional Magnetic Resonance Imaging Investigation of Syntactic Processing and a Possible ‘Neural Signature’ of Bilingualism”, *Journal of Cognitive Neuroscience*, Vol. 20, No. 1 , pp.153-169 [↑](#footnote-ref-8)
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11. DSM IV (Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition) [↑](#footnote-ref-11)
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