

Batna2 University

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Bilingualism and its Effects on Language and Intelligence

Is it a good idea to become bilingual? But what is a bilingual? Will learning a second language affect one's intelligence? Should a young child learn a second language? How might learning a second language be affected by the first? Answers to these often-asked questions, and others as well shall be provided in what comes below.

What is Bilingualism?

To begin with, it would be useful to consider just what the term 'bilingualism' means. Most would think of a bilingual as a person who is able to speak and understand two languages (languages like English and Russian, or Chinese and Arabic). Beyond this, though, there might be varieties of bilinguals that would look as odd at first. There are people who, besides an ordinary speech-type language, also know a *sign* language, many deaf persons are such bilinguals. Moreover, there are people who can read a second language fluently, even write it well, but who cannot speak or understand its spoken form to any significant degree. These people have not learned reading, but they have learned a language in the *written* mode.

Because language in all its complexity can be acquired through a variety of modalities – sound (speech), sight (writing), and visual motion (signs) – an adequate concept of a bilingual should allow for any of these realizations. Thus, it can be said that a person is bilingual if he or she knows: (1) two languages in the *same modality*, for example, two speech-based languages such as spoken English and spoken German, or, two sign-based languages such as American Sign Language and Japanese Sign Language, or (2) two languages based on *different modalities*, e.g. spoken German and American Sign Language, or, spoken French and written Sanskrit.

Is Bilingualism Beneficial or Detrimental?

Most of us consider bilingualism as an advantage. For one thing, knowledge of another language enables people:

1. To communicate with members of other cultures in their own language. This, in turn, provides a means for furthering cooperation and understanding among nations and peoples.

2. Knowing another language is also important within countries where there is more than one official language, as in Switzerland, which has four official languages: German, French, Italian, Romansh. Or Canada, with its two official languages, English, and French.

3. At a personal level, the pleasure, and cultural benefits of bilingualism, too, are obvious. Who would not like to be able to travel around the world, to Paris, Moscow, Shanghai, or Tokyo, and be able to talk with the people there in their own language? What lovers of movies and theatre would *not* like to understand performances in the original language? This being the case, where then is the controversy?

First, it must be said that the arguments offered against bilingualism are typically restricted to young children learning a second language. Some people believe that if a second language is learned at an early age, it can be harmful in two main respects: (1) The learning of the second language would retard or negatively influence the learning of the native language, or (2) it would intellectually retard the development of thinking and of such cognitive capacities such as reading. Many states in the USA after the First World War banned the teaching of a foreign language because the knowledge of that language was regarded as detrimental to young children's cultural values.

Secondly, it must be said that the criticism that has been raised against early bilingualism is primarily of another era, the early half of the twentieth century. That was a time when conceptions and experimental methodology involving language and intelligence were at a rather naive level and when the mood in America (where most of the research was done) was one of isolationism and a wariness of foreign influences. With the advent of the ethnic pride movements in the 1960s, both in America and Europe, along with the increased wealth that allowed ordinary people to travel to foreign lands, attitudes towards foreign languages changed significantly to the positive. Still, the questions need to be answered in a more scientific manner.

Effects of Early Bilingualism on First-Language Development and Intelligence

1. Effects on First-Language Development

Can learning a second language at an early age, while the child is still in the process of learning the native or first language, have a negative effect on the learning of the native language? There is the concern that bilingualism might somehow retard first- or even second-language development with the result that, for example, a child raised with two languages might never really learn either language as well as would monolingual speakers of those languages. This is an empirical question and one to which researchers have addressed themselves.

Negative Reports

One well-known and influential piece of research for its time was that of Smith, back in the 1930s. Smith (1939) gathered comparative data on the language of pre-school children in Iowa, where she did her graduate work, and on children in Hawaii, where she went to teach. The Iowa children were essentially white and monolingually English; while the Hawaii children were ethnically diverse, of Chinese, Filipino, Hawaiian, Japanese, Korean, and Portuguese parentage, and bilingual, with English as one of their languages.

Smith recorded sentences uttered by the children and evaluated the sentences in terms of standard English usage. The principal finding was that the bilingual children from Hawaii had many more errors in their English speech than did their Iowa counterparts. This led Smith to conclude that bilingualism caused retardation in language development. However, by defining English errors the way she did, Smith could not help but come up with the results that she obtained. Because the children in Hawaii in general spoke a dialect of English that was prevalent there, so-called 'pidgeon', and was not the standard English spoken by the children from Iowa, the Hawaiian children were penalized. Smith's bias is reminiscent of the later work of researchers such as Engelman (1966) and Basil Bernstein (1960, 1961), who claimed that non-standard speakers of English – in particular, inner-city African-Americans in the USA and working-class whites in Britain – had poor language knowledge compared to standard English speakers.

The work of Labov (1970) and other linguistic researchers in the 1960s and 1970s, however, conclusively demonstrated that non-standard dialects of English are every bit as complex as standard dialect as typified by Midwest speech in America, for example and are linguistically comparable.

Positive Reports

More sophisticated investigations comparing the linguistic skills of monolinguals and bilinguals have been made. One long-term study by Bruck (1976) with native English-speaking children in a French immersion program found that, by the fourth or fifth grade, the second-language French skills, including reading and writing, were almost as good as those of native French-speaking children. Importantly, all of this was achieved at no loss to their English native language development (as compared to a control group of English monolingual children). In addition, the immersion group did better than the English monolingual group on creativity tests. In many cases, their mathematics and science scores were also higher. However, other research demonstrated that in some aspects these students do not achieve native levels in productive skills such as speaking and writing. This may be because they were only exposed to classroom language. Without a great degree of interaction with native speakers over a long period of time, native-speaker proficiency is not easily achievable.

Positive Effects with Very Different Languages

The studies reviewed above discuss bilingualism in terms of two similar languages, English, and French. What about the effects of bilingualism in terms of two languages that are quite different? For example, English and Japanese not only have completely different syntactic structures, but they also have completely different writing systems. Regarding syntax, for example, Japanese uses a Subject–Object–Verb ordering. It also differs from English in that English is a right-branching language where relative clauses follow the noun they modify, e.g. ‘the dog *which Mary bought* was a happy dog’, while Japanese is a left branching language where modifying clauses precede the noun. Regarding the writing systems, while English uses a relatively simple Roman type of alphabet, Japanese writing is complex, using Chinese characters along with two different syllabaries (a syllabary being a system in which each sign represents a syllable).

In a study of the first English immersion program in Japan, Bostwick (1999) compared two groups of Japanese students in the same elementary school. One group consisted of children learning the elementary school curriculum through the medium of English; this was the experimental immersion group. The other group, the control group, consisted of children learning through the regular medium of Japanese. The results revealed no negative effects on first-language acquisition. Furthermore, both groups performed equally well on tests of academic achievement. The results showed that, the immersion students scored better on tests of English. Thus, the

Japanese–English immersion students equaled their Japanese monolingual peers in first-language learning and academic achievement, while at the same time they learned a foreign language.

2. Effects on Intelligence

Does learning a second language at an early age, while the child is still in the process of acquiring some aspects of the native or first language, have a positive or negative effect on a child's intelligence, thinking ability, creativity, or cognitive functions such as mathematics? As was the case in considering the effects on the development of language, most early research tended to find a negative effect. The possibility that learning a second language could in some way have a *positive* effect on intelligence was not something that was considered tenable until relatively recently.

Negative Reports

Perhaps the earliest study on bilingualism and intelligence was done in America. Goddard (1917) gave the English-language version of the Binet intelligence test to 30 recently arrived adult immigrants at Ellis Island. On the word-fluency portion of the test, it was found that less than half of the adult immigrants could provide 60 words, a figure much below the 200 words that 11-year-old American children could provide. Based on these results, Goddard classified 25 of the 30 people as 'feeble-minded'. Similar results were found in comparisons of monolinguals and bilinguals in Wales. 1400 children between the ages of 7 and 14 had a test on intelligence and based on the higher scores for monolinguals on IQ tests, he concluded that bilinguals' thinking processes were confused by the use of two languages.

What is wrong with these and other similar studies is the fact that knowledge of the target language itself plays a great role in determining the outcome of scores on the intelligence test. Since language is crucial in order to comprehend questions and to understand the multiple-choice answers, a low level of language knowledge will result in a low score and hence a low level of intelligence. The failure of the test makers and givers of intelligence tests to take into account the role of language in influencing scores greatly biased the tests. Not surprisingly, immigrants and non-standard English speakers fared especially badly.

Positive Reports

It was only in the 1950s that psychologists seriously began to realize that test items that required knowing language was not a fair measure of intelligence and that the content of items in many widely used intelligence tests was culturally biased. Once these methodological errors began

to be taken into account, research studies found no disadvantage for bilinguals. More than that, there was good evidence of a positive effect! One of the first studies to find positive effects on intelligence for bilingualism was that of Peal and Lambert (1962). They concluded that bilingualism results in greater mental flexibility and abstract thought. Furthermore, they suggested that rather than the two languages causing ‘confused thinking’, bilingualism improved thinking. This idea is supported by an impressive amount of recent studies where it was argued that if children have more than one language to analyze, they pay more attention to structural patterns and functions of words, which, in turn, has a crucial effect on further reading and academic success.

To date, one of the most impressive studies in the field has been that of Bain and Yu (1980). They compared monolingual and bilingual young children in different parts of the world (Alberta, Canada; Alsace, France; and Hong Kong). The tests that Bain and Yu used involved puzzles and having to carry out verbal instructions. Some of the instructions were quite linguistically complex for a 4-year-old; for example, the child was told, ‘When the red light goes on, say “squeeze”, and squeeze the ball’. By the time the children were around 4 years old, the results of some cognitive performance tests showed the bilinguals to be superior to the monolinguals, in addition to their having acquired two different languages.

Conclusion

It is unlikely that learning a second language negatively affects intelligence or first language acquisition in a permanent or important way. In fact, some research suggests there may even be beneficial effects. Given the advantages of knowing another language and of young children’s propensity for speedy language acquisition, there is good reason to favor early bilingualism.