

# Neurocognitive, Social, and Personal Benefits of Bi/Multilingualism

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## Overview

Contrary to the stereotype that contact with multiple languages during infancy muddles the development of cognition and language, new findings reveal that individuals profit from such exposure, with increased openness to new learning and other languages. Instead of being a hurdle, research suggests that multilingualism offers advantages to individuals throughout all stages of their lifespan, from infancy, children, childhood, adolescence and from early to late adulthood. Young children do not get confused from hearing two or multiple languages instead, develop abilities to distinguish the languages they are exposed to, becoming more open to learning new languages than those monolingually exposed. Adult learners have been proven to obtain sensitivity to the second language grammar regardless of their ages. In old age, actively using two or more languages seems to protect against cognitive debility. Such shelter is apparent in healthy aging and most intensely in balancing for pathology symptoms in those developing dementia or recuperating from stroke. Code-switching and language mixing which are common features in bilingual discourse, is rule-presided, and indicates a complex cognitive strategy that facilitates listeners to utilize bilingual speech features as speech is constructed. Growing research presents compelling evidence to prove the benefits of multilingualism in

neurocognitive advancement, personal and societal growth, and lifelong learning.

## **Neurocognitive Research and Bi/multilingualism**

Language has power to model behavior, cognition, as well as brain form and function. A vital multilingual cognition feature is that two or more languages could be activated simultaneously, demanding mechanisms to regulate interference (Hayakawa & Marian, 2019). Consequently, vast experience handling multiple languages could affect cognitive processes and their neural correlates. Multilingualism has extensive impacts on functions including cognitive regulation, speech processing, and language learning. Research connects bi/multilingualism to advanced cognitive reserve and improved executive control performance, relative to monolinguals (Kharkhurin, 2012). Practice managing multiple languages results in structural and functional alterations to the brain (Hayakawa & Marian, 2019). According to Maschio et al. (2018), the lifelong practice of handling two languages results in changes in brain structure and function. Bi/multilinguals exposed subjects' MRIs show greater gray matter volume, mainly in perceptual regions, superior white matter integrity, and bigger gray matter regions' functional connectivity than monolinguals (Maschio et al., 2018). Pliatsikas (2020) provides that bilingual children demonstrate augmented fractional anisotropy (FA) in the left inferior front occipital fasciculus (IFOF) as compared to monolingual children (Pliatsikas, 2020). A study found thinner cortex in temporal and frontal regions and more putamen volume in bilingual children. Studies on healthy aging adults underscore the significance of multilingualism in brain restructuring (Pliatsikas, 2020). In most studies, the effects of multilingualism are not showing an increase in grey matter in multilinguals, but a decrease of it in monolinguals (Pliatsikas, 2020). Thus, multilingualism has a neuroprotective effect, which offers increased resistance to age-related grey matter loss.

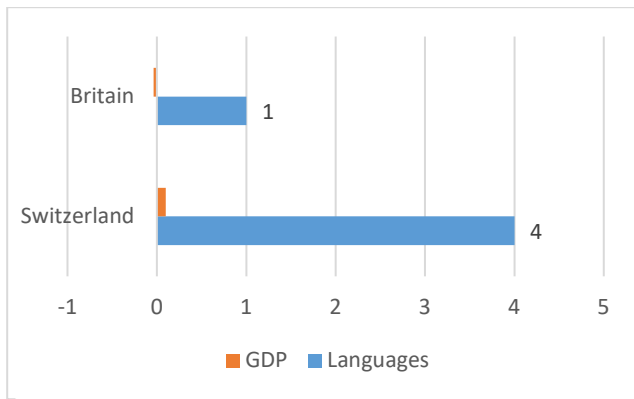
Bi/multilingualism research document a four to five years delay in Alzheimer's symptoms onset for bilingual people compared to education and age-matched monolingual individuals. Multilingualism does not directly affect Alzheimer's, yet research suggests that it impacts the disease's symptoms. This way, life as a bilingual protects the cognitive mechanisms which enable individuals to negotiate the disease's adverse consequences, perhaps similarly to how previous, continuous physical exercise might assist individuals dealing with injuries. In incidents of cognitive resources stress, by pathology presence, life as a multilingualism or bilingualism person might present similar protection. Just as concerning research with young children, there have been doubts about the validity, reliability and generalizability of findings on multilingualism's effect on cognitive decline. There have been speculations that multilingualism delays the inception of dementia symptoms in people developing Alzheimer's only in relatively well-educated and affluent adults (Kroll & Dussias, 2017). However, two different studies, conducted in 2013 and respectively 2015 on relatively large samples, prove the four to five years delay in the start of symptoms for multi-linguals compared to monolinguals. Most significantly, the noted delay was independent of literacy, education, and other socioeconomic factors (Kroll & Dussias, 2017). Other similar studies have reproduced the 4-5-year lag of symptoms of dementia for bi/multilingual people in various language contexts and for various pairings of language. Thus, bi/multilingualism's effect on delayed neurocognitive decline is a benefit proved by contemporary research.

## **Benefits and Necessity for Personal and Societal Growth**

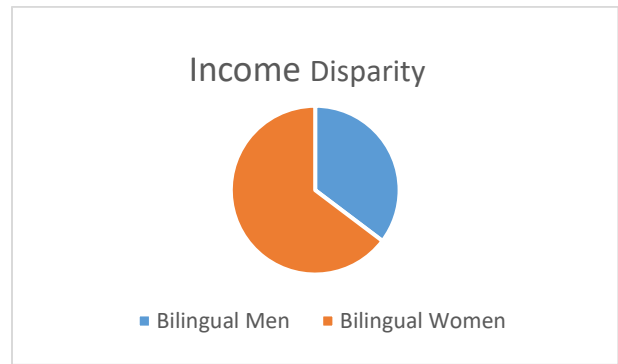
Multilingualism is believed to have several potential community and societal benefits including better economic and social inclusion, cultural vitality, enhanced school achievement, and informed and empowered citizens. Røyneland and Blackwood (2021) argue that in

the continually globalized society, coupled with immigration, it is essential to adopt new beliefs and attitudes. Multilingualism is not only a way to acquire foreign languages to help communicate with others, but also a complex and essential phenomenon of tolerance and intercultural openness that is necessary in building better societies (Røyneland & Blackwood, 2021). Multilingualism is empowering as a tool in cultural integration in an increasingly multicultural society.

Research suggests that bi/multilingualism is beneficial for the economy. Nations that actively cultivate different languages obtain a range of benefits, including successful exports and an increased innovative workforce (Hardach, 2018). For example, Switzerland accredits ten percent of its Gross Domestic Product (GDP) to multilingual culture (**Figure 1**) (Hardach, 2018). Switzerland has four national languages: French, Romansh (an ancient Latin-based language), Italian, and German. Conversely, Britain, which has only English as the official language, is projected to lose a parallel of 3.5% of its GDP each year, as a result of relatively poor language skills of the population (**Figure 1**) (Hardach, 2018). This phenomenon is partly attributable to languages' role in building trade relations. Research on medium-sized and small companies in France, Sweden, Denmark, and Germany discovered that those that invested in languages more exported more products. German companies which heavily invested in multilingual employees added ten countries to their export market. Companies with less investment in multilingual employees failed to acquire such contracts (Hardach, 2018; Oluoch-Suleh & Ekene, 2017). Multilingualism is essential for lingua franca as central to international trade relations and the current global economy.



**Figure 1: Multilingual investment and GDP for Switzerland and Britain**



**Figure 2: Annual Income Disparity for Bilinguals in Florida**

Further, bi/multilingualism fosters personal economic well-being, and a few research shows that bi/multilingualism boost earning power. In Florida, employees able to speak English and Spanish earn an increment of \$7,000 on their annual income, as compared to exclusive English speakers. A study in Canada found that bilingual women earn 6.6 percent and bilingual men earn 3.6 percent more than their English monolingual colleagues (**Figure 2**) (Hardach, 2018). This study found that even when bilinguals did not use the alternate language at work, they still earned more than monolinguals. Thus, for career prospects and improved income, bi/multilingualism is beneficial for personal growth.

Also, multilingualism is said to have additional personal benefits. Bi/multilingualism is said to be beneficial for brain health through neurocognitive decline delay. It is also associated with enhanced concentration abilities and an improved capacity to process information. For example, a one-week rigorous language course enhanced attention an effect which stayed stable nine months later in individuals who trained five hours or more a week (Hardach, 2018). The benefits are most apparent for individuals who were multilingual from young ages, although even acquiring languages later is noted to be significant.

## **Bi/multilingualism Benefit and Long-Life Learning**

Lifelong learning also known as continuing education through the life course is now a necessity in navigating rapidly changing technological, social, and economic landscapes. Multilingualism is increasingly becoming a part of many nations' education strategy programs owing to the growing influence of globalization and transnational migration (Chibaka, 2018). Quality in education is a philosophy and a process encompassing all cultural and linguistic resources accessible to learners. In contexts where cultural diversity and multilingualism are common and considered as resources for social cohesion and individuals, a multilingual ethos can direct educational practice and policy (Chibaka, 2018). Such a tenet does not distinguish between languages. Instead, it assists learners to develop language awareness, learn multiple languages and build respect for various cultures. It helps learners understand how cultures and languages in contact supplement each other, becoming skillful communicators in multilingual environments. Multilingual ethos practice and policy show that the diversity principle as a quality component for learning and education encourages tolerance, stimulates personal growth, and endorses active societal participation. Multicultural and multilingual proficiencies are considered communicative aptitudes necessary for individuals to function fully in the 21st century (Sahoo et al., 2021). Multilingualism enables individuals to learn, throughout their lives, integrating new cultures and embracing changes in society.

Furthermore, multilingualism ensures lifelong personal growth, added opportunities, and mobility for individuals. Becoming a multilingual person, requires invest of numerous efforts to develop the necessary skills and seeking to understand the environment which contributes to the mastery of language (Senda, 2020). Thus, most multilingual become so through lifelong learning of various languages to develop proficiency (Sahoo et al., 2021). Moreover, socio-cultural

contexts play a significant role in an individual's adaptation to new cultures (Senda, 2020). In this regard, multilingualism becomes a lifelong learning in which individuals constantly improve their languages by working with others to boost their proficiency. The lifelong learning perspective focuses on how the skills and knowledge acquired are relevant to learners' lives (Kharkhurin, 2012; Røyneland & Blackwood, 2021). Quality learning is not only about increasing one's competence, polyvalence and productivity. It incorporates fostering diversity and being well-founded in traditions and cultures. Multilingualism provides individuals with the ability to learn skills and knowledge relevant while maintaining a connection to cultures and traditions throughout one's life.

## **Conclusion**

The literature discussed in the article reveals that multilingualism offers remarkable outcomes throughout the lifespan going beyond the rewards of acquiring more than one language available for communication. Possessing two or more languages improves opportunities for social connections, economic advancement, and increases intercultural tolerance and understanding. Further, bilingualism and multilingualism alter the brain and mind in ways that build resilience under stressful conditions as well as countering the deleterious effects disease. The potential to delay neurocognitive declines, improve personal and societal well-being, and the benefits of lifelong learning benefits clearly highline the incomparable benefits of bi/multilingualism.

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