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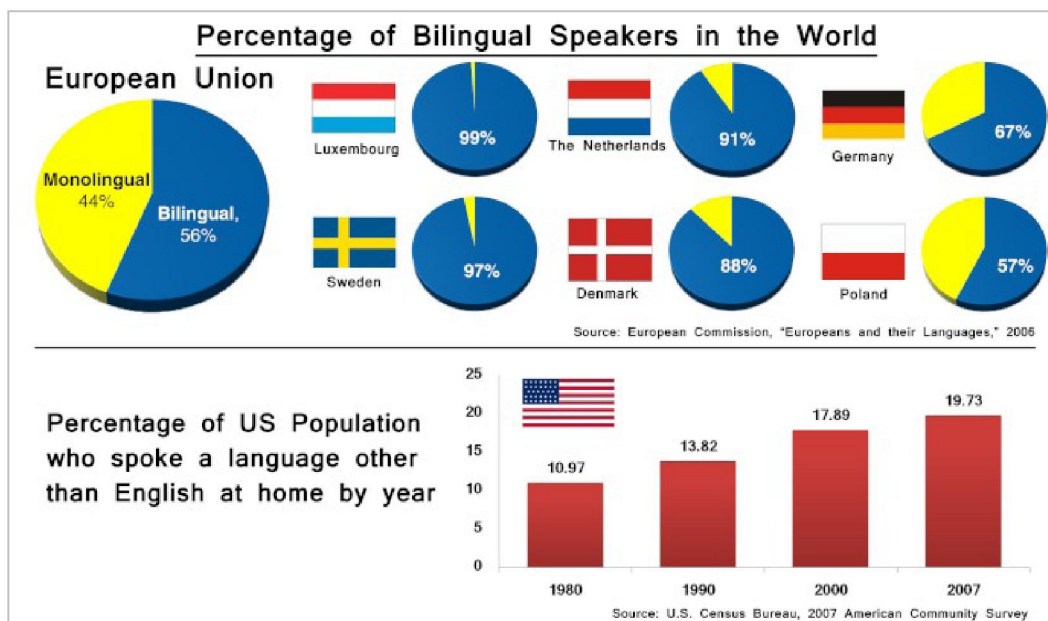
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BILINGUALITY: ADVANTAGES IN LIFE AND EDUCATION

Abstract. Nowadays researchers pay more attention on advantages of early training of the child foreign language. Researches show that bi-lingual children pass the most important stages of development of the speech (the first words, the first phrases) in the same age, as their "monolingual" peers. They also note that early SLA increases a little risk of development of stutter which usually extends to both languages. At the same time numerous researches of the last years speak about huge advantage of bilingual children at school. The young bilingual school students find the best ability to focus on a task, without being distracted by foreign irritants. Similar results was found in another study bilingual students showed better scores in ability to concentrate – sign of good working memory – was also inherent also in adult bilinguals, those who has freely mastered two languages in early years. In other research was shown that the children using in the life two languages during the entire period aged from five up to ten years show better results at implementation of cognitive tests, including attention and perception, simpler and quicker make decisions and better react to feedback, than their monolingual peers. According to functional MRT at bilingual children higher level of activity of a prefrontal zone of the cerebral cortex which is responsible for executive functions is noted. Neurobiological researchers have found out that bilinguals adult have more dense gray substance of a brain, especially in the left hemisphere which is responsible for the majority of language and communication functions. Other researchers prove that the bilingualism can slow down and remove development of age dementias, including Alzheimer's disease.

Keywords: bilingualism, language, memory, thinking.

We are surrounded by language during nearly every waking moment of our lives. We use language to communicate our thoughts and feelings, to connect with others and identify with our culture, and to understand the world around us. And for many people, this rich linguistic environment involves not just one language but two or more. In fact, the majority of the world's population is bilingual or multilingual. In a survey conducted by the European Commission in 2006, 56 percent of respondents reported being able to speak in a language other than their mother tongue. In many countries that percentage is even higher—for instance, 99 percent of Luxembourgers and 95 percent of Latvians speak more than one language.[1] Even in the United States, which is widely considered to be monolingual, one-fifth of those over the age of five reported speaking a language other than English at home in 2007, an increase of 140 percent since 1980.[2] Millions of Americans use a language other than English in their everyday lives *outside* of the home, when they are at work or in the classroom. Europe and the United States are not alone, either. The Associated Press reports that up to 66 percent of the world's children are raised bilingual.[3] Over the past few decades, technological advances have allowed researchers to peer deeper into the brain to investigate how bilingualism interacts with and changes the cognitive and neurological systems.



Picture 1 - Percentage of bilingual speakers in the World

Bilingualism (Latin *bi* - "two" + *lingua* - "language") or bilingualism — free knowledge of two languages (native and nonnative) and their alternate use in everyday life.

Research has overwhelmingly shown that when a bilingual person uses one language, the other is active at the same time. When a person hears a word, he or she doesn't hear the entire word all at once: the sounds arrive in sequential order. Long before the word is finished, the brain's language system begins to guess what that word might be by activating lots of words that match the signal. If you hear "can," you will likely activate words like "candy" and "candle" as well, at least during the earlier stages of word recognition. For bilingual people, this activation is not limited to a single language; auditory input activates corresponding words *regardless* of the language to which they belong. [4]

Bilingualism is pervasive throughout the world, but it varies according to

- 1) the conditions under which people become bilingual,
- 2) the uses they have for their various languages,
- 3) the societal status of the languages.

For example, in postcolonial Africa, students may be educated in English or French while another language is spoken in the home, and yet another (e.g., Swahili in eastern Africa) may be used in public encounters and institutional settings, such as the courts (Fishman, 1978). In officially bilingual countries such as Switzerland, children use one language at home and for most schooling, but, at least if middle class, are expected to acquire competence in at least one other official language; French and German are of equivalent social status and importance to success. Yet another set of conditions is created in bilingual households, where parents who are native speakers of two different languages choose to use both in the home. Finally, bilingualism is often the product of migration. Immigrants frequently continue to use their native language—which may be of low status and not institutionally supported—at home, and learn the dominant language of their new society only as required for work, public encounters, or schooling. The children of such families, for whom school is the primary social context, may end up fully bilingual, bilingual with the new language dominant, or having little knowledge of the parental language. They are the children of particular interest in this report [5,6].

A number of typologies of bilingualism have been offered. A major distinction among these typologies is that some focus their explanation at the individual and others at the societal level.

Individual Level

Weinreich (1953) distinguishes among compound, coordinate, and subordinate bilinguals, who differ in the way words in their languages relate to underlying concepts. In the compound form, the two languages represent the same concept, whereas in the coordinate form, the concepts themselves are independent and parallel. In the subordinate form, the weaker language is represented through the stronger language. These different forms are clearly related to the social circumstances in which the two languages are learned, but the distinction also reflects an individual's mental makeup. Weinreich's distinction led to a number of studies seeking behavioral differences reflecting this typology (e.g., Lambert et al., 1958). Though such attempts were essentially abandoned because of the difficulty of

operationalizing the distinction, speculation that different bilingual experiences result in different cognitive and neural organization persisted [7].

The emergence of procedures for seeing what prior stimuli facilitate the recognition of words presented later (called "lexical priming") has renewed interest in the possibility that we can tap the differential mental processes of the different types of bilinguals (Larsen et al., 1974).

A basic distinction at the individual level is that between simultaneous and sequential bilingualism: the former begins from the onset of language acquisition, while the latter begins after about age 5, when the basic components of first-language knowledge are in place (McLaughlin, 1984a). In the sequential type, a distinction is made between early and late bilinguals, according to the age at which second-language acquisition occurred (Genesee et al., 1978). [8]

In general, research on distinctions among different types of bilingual individuals has failed to find consistent differences in task performance or processing variables. Much recent information-processing work has focused on the question of whether bilinguals process information in their two languages independently or interdependently—the findings not being related to any particular bilingual typology.

The above findings are important for discussion later in this report that addresses whether the linguistic outcomes of different types of education programs might result in qualitatively different types of individual bilinguals. They suggest, by and large, that bilingualism attained through different conditions of exposure will not be different in its fundamental cognitive organization.

Social Level

Typologies of bilingualism based on societal variables have focused mainly on the prestige and status of the languages involved. Fishman et al. (1966) draw a distinction between "folk" and "elite" bilingualism, referring to the social status of the bilingual group. The "folk" are immigrants and linguistic minorities who exist within the milieu of a dominant language and whose own language is not held in high esteem within the society. The "elite" are those who speak the dominant language and whose societal status is enhanced through the mastery of additional languages.

Similarly, Lambert (1975) distinguishes "additive" from "subtractive" bilingualism. This distinction focuses on the effect of learning a second language on the retention of the native language. In additive bilingualism, the native language is secure, and the second language serves as an enrichment. Canadian French immersion programs for the English-speaking majority are a prime example of additive bilingualism. In subtractive bilingualism, the native language is less robust; society assumes that it will be used only temporarily until replaced by the dominant language as the group assimilates. Most immigrants to the United States, Canada, and Australia experience this latter form of bilingualism.

These broader social distinctions can help us understand how differences in individual-level bilingualism relate to cultural setting. As macro-level descriptions, they are difficult to test, but they help explain why programs that seem quite similar can have such divergent effects in different social settings—for example, why an immersion program in Canada succeeds in teaching French to English-speaking students who continue to maintain full proficiency in English and to function at a high academic level, while an immersion program to teach English to Spanish-speaking immigrants in the United States often results in both a shift to monolingualism in English and academic failure. (Immersion programs in both cases are sensitive to the fact that the students are all non-native speakers of the language; however, they differ considerably with respect to the populations they serve and their ultimate goals regarding the development of the native language.)

Consequences of Bilingualism

A commonly expressed fear about childhood bilingualism is that it could confuse the child, both linguistically and cognitively. This fear is rooted in an extensive literature on intelligence testing from the early 1900s (see Diaz, 1983, for a review), when psychometricians compared the performance of bilingual immigrant children and U.S.-born children on various measures of intelligence and found that the monolinguals outperformed the bilinguals. Two explanations for this discrepancy were offered: that the bilinguals (who at that time were predominantly from southern and eastern European countries) were genetically inferior to the western European monolinguals, or that the attempt to learn two languages caused mental confusion. This narrowly construed set of negative interpretations was captured well by noted psychologist Goodenough (1926). Observing a highly negative correlation between the extent to which different language groups used their native language in the home and the mean IQ scores for these groups, she concluded: "This might be considered evidence that the use of a foreign language in the home is one of the chief factors producing mental retardation as measured by intelligence tests. A more probable explanation is that those nationality groups whose average intellectual ability is inferior do not readily learn the new language" (p. 393) [9].

The above literature has been largely discredited because of its failure to control for important variables, such as socioeconomic status, as well as the criteria used to select the bilingual samples (some studies, for example, used the students' last names as the basis for deciding whether they were bilingual). When such factors were controlled for, the results were reversed in favor of bilinguals. Indeed, Peal and Lambert (1962), widely credited for introducing important controls in monolingual-bilingual comparisons, describe a bilingual child as "a youngster whose wider

experiences in two cultures have given him advantages which a monolingual does not enjoy. Intellectually his experience with two language systems seems to have left him with a mental flexibility, a superiority in concept formation, a more diversified set of mental abilities" (p. 20). Peal and Lambert's study gave rise to a large number of studies that selected bilinguals on a more considered basis. Generally, the results of these studies showed the bilingual groups to be superior on a variety of measures of cognitive skill, in particular, metalinguistic abilities (see Reynolds, 1991, for a review). Much research in this tradition employs between-group comparisons. To control for confounding factors in such comparisons, other studies have used within-group variation in the degree of bilingualism and looked at the predictive value of this variation for cognitive outcomes (Duncan and DeAvila, 1979; Galambos and Hakuta, 1988; Hakuta, 1987). Such studies continue to show positive relationships between degree of bilingualism and outcome measures [10].

Another tradition of research comes from case studies of individual children exposed to two languages at home. The earliest among these can be credited to the French linguist Ronjat (1913), but the seminal work even to this date is by Werner Leopold, who published a four-volume study of his German-English bilingual daughter Hildegard. Ronjat's and Leopold's detailed studies of their own children gave rise to a rich tradition of linguists following their children around with notebooks (and later, tape recorders and video recorders). This literature has been reviewed most recently by Romaine (1995). Generally, the studies suggest that children can become productive bilinguals in a variety of language-use settings, though exposure to a language for less than 20 hours a week does not seem sufficient for a child to produce words in that language, at least up to age 3 (Pearson et al., in press). Very few cases of what might be considered language confusion are reported [11].

Physiological studies have found that speaking two or more languages is a great asset to the cognitive process. The brains of bilingual people operate differently than single language speakers, and these differences offer several mental benefits.

Below are seven cognitive advantages to learning a foreign language. Many of these attributes are only apparent in people who speak multiple languages regularly – if you haven't spoken a foreign tongue since your A levels, your brain might not be reaping these bilingual benefits. However, people who begin language study in their adult lives can still achieve the same levels of fluency as a young learner, and still reap the same mental benefits, too.

Speaking a foreign language improves the functionality of your brain by challenging it to recognise, negotiate meaning, and communicate in different language systems. This skill boosts your ability to negotiate meaning in other problem-solving tasks as well.

Students who study foreign languages tend to score better on standardised tests than their monolingual peers, particularly in the categories of maths, reading, and vocabulary.

Multilingual people, especially children, are skilled at switching between two systems of speech, writing, and structure. According to a study from the Pennsylvania State University, this "juggling" skill makes them good multitaskers, because they can easily switch between different structures. In one study, participants used a driving simulator while doing separate, distracting tasks at the same time. The research found that people who spoke more than one language made fewer errors in their driving.

Several studies have been conducted on this topic, and the results are consistent. For monolingual adults, the mean age for the first signs of dementia is 71.4. For adults who speak two or more languages, the mean age for those first signs is 75.5. Studies considered factors such as education level, income level, gender, and physical health, but the results were consistent [12].

Educators often liken the brain to a muscle, because it functions better with exercise. Learning a language involves memorising rules and vocabulary, which helps strengthen that mental "muscle." This exercise improves overall memory, which means that multiple language speakers are better at remembering lists or sequences. Studies show that bilinguals are better at retaining shopping lists, names, and directions.

A study from Spain's University of Pompeu Fabra revealed that multilingual people are better at observing their surroundings. They are more adept at focusing on relevant information and editing out the irrelevant. They're also better at spotting misleading information. Is it any surprise that Sherlock Holmes and Hercule Poirot are skilled polyglots? [13]

According to a study from the University of Chicago, bilinguals tend to make more rational decisions. Any language contains nuance and subtle implications in its vocabulary and these biases can subconsciously influence your judgment. Bilinguals are more confident with their choices after thinking it over in the second language and seeing whether their initial conclusions still stand up.

Learning a foreign language draws your focus to the mechanics of language: grammar, conjugations, and sentence structure. This makes you more aware of language, and the ways it can be structured and manipulated. These skills can make you a more effective communicator and a sharper editor and writer. Language speakers also develop a better ear for listening, since they're skilled at distinguishing meaning from discreet sounds.

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ПРЕИМУЩЕСТВА БИЛИНГВИЗМА

Аннотация. Билингвизм. Все больше исследователей задают себе о вопросы, о преимуществах раннего обучения ребенка иностранным языка. Исследования показывают, что дети-билингвы проходят важнейшие этапы развития речи (первые слова, первые фразы) в том же возрасте, что и их «одноязычные» сверстники. Они так же отмечают, что раннее изучение второго языка несколько повышает риск развития заикания, которое обычно распространяется на оба языка. При этом многочисленные исследования последних лет говорят об огромном преимуществе двуязычных детей в школе. Двуязычные младшие школьники обнаруживают лучшую способность сосредоточиться на задании, не отвлекаясь на посторонние раздражители. Похожее увеличение способности концентрироваться – признак хорошей рабочей памяти – также присуще и взрослым билингвам, тем, кто свободно овладел двумя языками в ранние годы. В другом обширном исследовании говорится о том, что дети, использующие в своей жизни два языка в течении всего периода в возрасте от пяти до десяти лет, в среднем показывают более высокие результаты при выполнении когнитивных тестов, лучше концентрируют внимание и сопротивляются отвлекающим факторам, проще и быстрее принимают решения и лучше реагируют на обратную связь, чем их одноязычные сверстники. При использовании функционального МРТ у детей-билингвов отмечается более высокий уровень активности префронтальной зоны коры головного мозга, отвечающей за исполнительные функции. Нейробиологические исследования выяснили, что взрослые билингвы имеют более плотное серое вещество мозга, особенно в левом полушарии, отвечающем за большинство языковых и коммуникационных функций. Другие исследователи доказывают, что билингвизм может замедлять и отодвигать развитие возрастных деменций, включая болезнь Альцгеймера.

Ключевые слова: билингвизм, язык, память, мышление.

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БИЛИНГВИЗМНІҢ АРТЫҚШЫЛЫҚТАРЫ

Аннотация. Билингвизм. Зерттеушілер өздеріне баланы ерте жастан шетел тіліне үйрету артықшылықтары туралы мәселелер бойынша көп сұрақтар қояды. Зерттеулер көрсетіп отырғандай, билинг балалар бір тілді жолдастарымен бірдей жас шамасында сөйлеу тілінің дамуындағы маңызды кезеңдерден өтеді (алғашқы сөздер, алғашқы сөз тіркестерін). Олардың пайымдауынша, екінші тілді ерте жастан үйрену кекештенуді дамытады және ол әдетте екі тілге де таралуы мүмкін. Бұл ретте соңғы жылдардағы зерттеулер мектептегі екі тілді балалардың үлкен артықшылыққа ие екенін көрсетеді. Екі тілді кіші оқушылардың бөгде жайттарға алаңдамай тапсырмаларға жақсы көңіл бөлу қабілеті анықталды. Белгілі нәрсеге назарын аудару қабілетінің артуы – жақсы есте сақтау белгісі бұрын екі тілді меңгерген ересек билингвалдарға тән. Бұдан ауқымды зерттеулерде бес жастан он жасқа дейін екі тілді меңгерген балалар бір тілді жолдастарына қарағанда когнитивті тестерде жоғары нәтиже көрсетеді, бөгде нәрсеге алаңдамай, назар салып, тез шешім қабылдап, кері байланысқа да шапшаң жауап беретіні анықталған. Функционалдық МРТ қолданғанда билинг балалардың орындау функцияларына жауап беретін ми қыртысының префронталды аймағының жоғары деңгейдегі белсенділігі анықталды. Нейробиологиялық зерттеулер ересек билингвалдардың миында тығыз сұр зат бар екенін, әсіресе тілдік және коммуникациялық функцияларға жауап беретін бастың сол жақ жарты шарында екенін анықтады. Басқа зерттеушілер билингвизмнің Альцгеймер ауруымен қатар жас дамуын баяулату мүмкін екендігін дәлелдеді.

Тірек сөздер: билингвизм, тіл, жады, ойлау.