

## SOCIAL STUDIES (SAT)

This passage is adapted from Viorica Marian and Anthony Shook, "The Cognitive Benefits of Being Bilingual."

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. 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. . . . 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. . . .

Technological advances have allowed researchers to peer deeper into the brain to investigate how bilingualism interacts with and changes the cognitive and neurological systems. 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. . . .

Bilingual people often perform better on tasks that require conflict management. In the classic Stroop task, people see a word and are asked to name the color of the word's font. When the color and the word match (e.g., the word "red" printed

in red), people correctly name the color more quickly than when the color and the word don't match (e.g., the word "red" printed in blue). This occurs because the word itself ("red") and its font color (blue) conflict. The cognitive system must employ additional resources to ignore the irrelevant word and focus on the relevant color. The ability to ignore competing perceptual information and focus on the relevant aspects of the input is called inhibitory control. Bilingual people often perform better than monolingual people at tasks that tap into inhibitory control ability. Bilingual people are also better than monolingual people at switching between two tasks; for example, when bilinguals have to switch from categorizing objects by color (red or green) to categorizing them by shape (circle or triangle), they do so more rapidly than monolingual people, reflecting better cognitive control when changing strategies on the fly. . . .

Furthermore, the benefits associated with bilingual experience seem to start quite early—researchers have shown bilingualism to positively influence attention and conflict management in infants as young as seven months. In one study, researchers taught babies growing up in monolingual or bilingual homes that when they heard a tinkling sound, a puppet appeared on one side of a screen. Halfway through the study, the puppet began appearing on the opposite side of the screen. In order to get a reward, the infants had to adjust the rule they'd learned. Only the bilingual babies were able to successfully learn the new rule. . . .

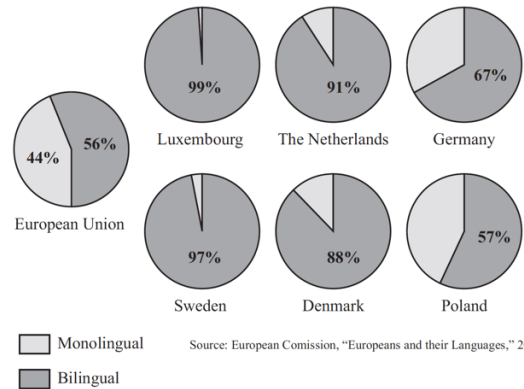
The cognitive and neurological benefits of bilingualism also extend into older adulthood. Bilingualism appears to provide a means of fending off a natural decline of cognitive function and maintaining what is called "cognitive reserve." Cognitive reserve refers to the efficient utilization of brain networks to enhance brain function during aging. Bilingual experience may contribute to this reserve by keeping

the cognitive mechanisms sharp and helping to recruit alternate brain networks to compensate for those that become damaged during aging. . . .

In addition to staving off the decline that often comes with aging, bilingualism can also protect against illnesses that hasten this decline, like Alzheimer’s disease. In a study of more than 200 bilingual and monolingual patients with Alzheimer’s disease, bilingual patients reported showing initial symptoms of the disease at about 77.7 years of age—5.1 years later than the monolingual average of 72.6. . . .

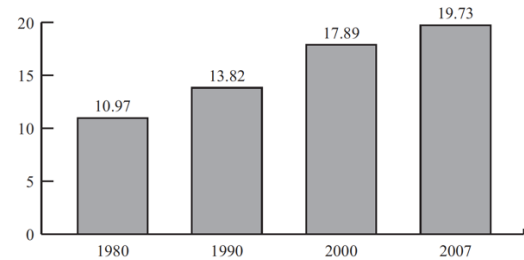
The cognitive and neurological benefits of bilingualism extend from early childhood to old age as the brain more efficiently processes information and staves off cognitive decline. What’s more, the attention and aging benefits discussed above aren’t exclusive to people who were raised bilingual; they are also seen in people who learn a second language later in life.

Figure 1  
Percentage of Bilingual Speakers in Some European Nations and the European Union



Source: European Commission, “Europeans and their Languages,” 2006.

Figure 2  
Percentage of U.S. Population Who Speaks a Language Other than English at Home by Year



Source: U.S. Census Bureau, 2007 American Community Survey

Figure 1 and 2 adapted from U.S. National Library of Medicine, National Institutes of Health (2012). “The Cognitive Benefits of Being Bilingual.”  
Image source: <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3583091/>

Source: Marian, Viorica, and Anthony Shook. “The Cognitive Benefits of Being Bilingual.” US National Library of Medicine, National Institutes of Health. 2012.

- The authors use the word “you” in lines 31-34 mainly to
  - persuade readers to accept their argument.
  - establish an emotional connection with readers.
  - show readers how their work affects real people.
  - make a complex idea more accessible to readers.
- In the passage, the authors contend that the Stroop task reveals bilingual people’s ability to
  - adapt to new rules.
  - filter out irrelevant data.
  - recognize word parts.
  - preserve brain function.

- What can reasonably be inferred about people who are bilingual from the passage?
  - Bilingual people are better at settling disputes than monolingual people.
  - Bilingual people are more likely to live longer than monolingual people.
  - Bilingual people are more flexible in their thinking than monolingual people.
  - Bilingual people are better at putting events in order than monolingual people.
- Which choice provides the best evidence for the answer to the previous question?
  - Lines 22-27 (“Research . . . order”)
  - Lines 39-40 (“Bilingual . . . management”)
  - Lines 58-67 (“Bilingual . . . on the fly”)
  - Lines 98-101 (“In addition . . . disease”)

5. As used in line 87, “natural” most nearly means

- A) normal.
- B) realistic.
- C) sincere.
- D) unrefined.

6. The authors refer to a study involving bilingual and monolingual Alzheimer’s patients (lines 101-107) primarily to

- A) illustrate the need for bilingual education for senior citizens.
- B) emphasize the benefits of bilingualism to neurological health.
- C) argue for more research into the long-term effects of bilingualism.
- D) compare bilingual abilities early in life to bilingual abilities later in life.

7. Based on the information in the passage, with which statement would the authors of the passage most likely agree?

- A) Only children should be exposed to another language from birth.
- B) Only children should learn another language from their parents at home.
- C) People of all ages should be encouraged to learn a second language.
- D) People should experience a variety of languages from around the world but needn’t learn those languages.

8. Which choice provides the best evidence for the answer to the previous question?

- A) Lines 1-4 (“We use . . . us”)
- B) Lines 13-17 (“Even in . . . in 2007”)
- C) Lines 68-73 (“Furthermore . . . months”)
- D) Lines 112-117 (“What’s more . . . life”)

9. Which of the following choices is supported by the data in the first figure?

- A) People in Poland are less likely to grow up in bilingual households than are people in the European Union.
- B) The majority of people in Luxembourg speak more than one language.
- C) People in the Netherlands are more likely to learn another language at school than are people in Denmark.
- D) The number of bilingual people in Sweden and Germany is roughly the same.

10. Which idea from the passage is supported by the data in the two figures?

- A) Bilingualism provides people with many unforeseen benefits.
- B) Most people around the world learn a second language at home.
- C) Bilingualism may be important to understanding brain function.
- D) Many people in the world can speak two or more languages.