

# Your brain on a second language: Bilingualism and brain power

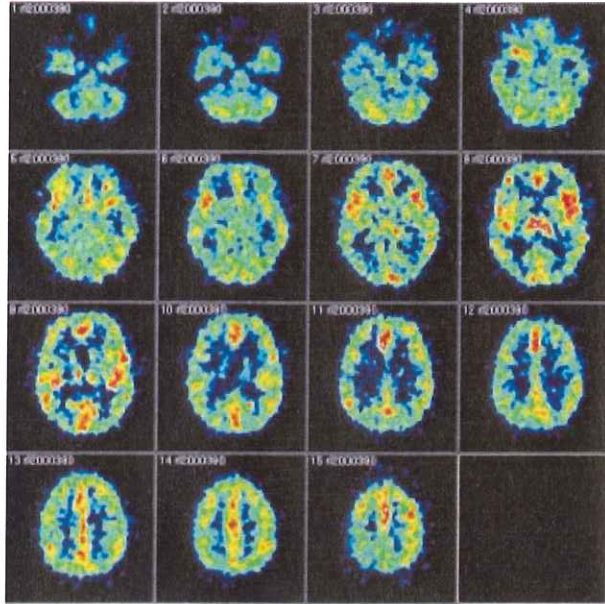


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Does being bilingual really make you smarter? Science staff writer Yudhijit Bhattacharjee made a good argument for it in the *Sunday New York Times*, citing several studies in recent years which suggest that the ability to speak a second language indeed boosts cognitive skills.

Key to the most recent understanding of how this works is a reversal in attitudes toward a second language being an “interference.” Once thought to have hindered academic and intellectual development, this factor turns out not to be such a bad thing after all. Bhattacharjee writes:

*They were not wrong about the interference: there is ample evidence that in a bilingual's brain both*

*language systems are active even when he is using only one language, thus creating situations in which one system obstructs the other.*

*But this interference, researchers are finding out, isn't so much a handicap as a blessing in disguise. It forces the brain to resolve internal conflict, giving the mind a workout that strengthens its cognitive muscles.*

What this translates into, according to the science that he cites, is greater problem-solving skills. Bhattacharjee writes about how “the bilingual experience improves the brain’s so-called executive function – a command system that directs the attention processes that we use for planning, solving problems and performing various other mentally demanding tasks.”

This doesn’t necessarily manifest itself in terms of academic performance or language ability, but in cognitive advantages that are harder to quantify. These include staying focused, holding information in one’s mind (like directions, for example), and a heightened ability to monitor one’s environment, all stemming from bilinguals’ ability to quickly switch languages and the mental focus that such a task requires.

Some educators have been buying into bilingualism in terms of dual-immersion language classes, a cousin of sorts to bilingual education, although their use is still fairly limited. In Southern California and elsewhere, a growing number of schools have added dual-immersion language programs for schoolchildren, citing the brain-power argument as good enough reason for kids to be fluent in a second language. Curiously, the benefits don’t automatically translate into higher test scores. Research on these programs suggests a so-called “lag effect” in lower grades, which eventually dissipates as the bilingual students catch up and surpass monolingual peers.

Still, there continue to be skeptics. In 2007, an article in *Developmental Science* drawing from Canadian data suggested that bilinguals’ cognitive advantage may also be linked to socioeconomic

status and its advantages, since in Canada “wealthier families may be more likely to speak both French and English.” But this wouldn’t necessarily ring true elsewhere.

And in a curious 2009 study that relied on a different kind of cognitive test, in which bilinguals and monolinguals had to track flashing Os and Xs on a screen, some bilinguals made more errors.

But the general consensus in recent years has been that bilingualism boost brain power, even later in life, with research suggesting that it can help some delay Alzheimer’s symptoms. An article in Science Daily last year reported findings of a study that involved CT scans:

*Dr. Schweizer’s team studied CT scans of patients who had been diagnosed with probable Alzheimer’s disease and who had similar levels of education and cognitive skills, such as attention, memory, planning and organization. Half were fluently bilingual; the other half unilingual.*

*Despite the fact that both groups performed equivalently on all measures of cognitive performance, the scans of the bilingual patients showed twice as much atrophy in areas of the brain known to be affected by Alzheimer’s.*

*...Dr. Schweizer said that because bilingual people constantly switch from one language to another or suppress one language to speak in the other, their brains may be better prepared to compensate through enhanced brain networks or pathways when Alzheimer’s sets in.*

*Previous observational studies have found that bilingualism delays the onset of Alzheimer’s symptoms by up to five years, but this is the first to find physical proof through CT scans.*

Cognitive benefits aside, there are undeniable practical benefits to speaking a second language. I can tick off a long list of them – in English or Spanish.