Bilingual Minds

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Speaking two languages can be handy when traveling abroad, applying for jobs, or working with international colleagues. But research has revealed that bilingualism influences the way we think and process information. In the current issue of Psychological Science in the Public Interest, a journal of the Association for Psychological Science, a panel of distinguished psychological scientists examine the ways in which knowing two languages can change brain function, affecting cognitive processes involved in more than just communication. The differences between monolinguals (individuals who speak one language) and bilinguals (individuals who speak two languages) have implications for clinical work, research, and education policy. The authors are Ellen Bialystok (York University), Fergus I.M. Craik (Rotman Research Institute), David W. Green (University College London), and Tamar H. Gollan (University of California, San Diego).

Children learning two languages from birth achieve the same basic milestones (e.g., their first word) as monolinguals do, but they may use different strategies for language acquisition. Bilinguals tend to have smaller vocabularies in each language than do children who know one language. Although they may not know as many words as do monolinguals, bilinguals may have an advantage when it comes to certain nonverbal cognitive tasks–bilinguals outperform monolinguals on tasks that require inhibition of distractions and switching between tasks. We all have a network in place that helps in resolving conflict (e.g., Stroop task); research suggests that bilinguals may tap this same network to help with interference control–that is, limit interference from the second language when they want to speak using the first. In addition, there is another network that individuals use when switching between tasks and bilinguals may recruit this same system when switching from one language to another. Since bilinguals are constantly recruiting these networks for effective communication, they may become enhanced for other, non-language related cognitive processing. The bilingual advantage in attention and cognitive control may have important, long-term benefits. For example, preliminary evidence even suggests that their increased use of these systems may protect bilinguals against Alzheimer's.
The differences between monolinguals and bilinguals have important clinical and policy implications. For example, vocabulary tests are commonly used during neuropsychological assessments, and bilinguals' scores may not accurately reflect their language ability. Clinicians and researchers need to be aware of the potential to misinterpret bilinguals' test scores, and developing tests that specifically target bilingual populations may result in better outcomes for these patients. Foreign language immersion programs in schools may be beneficial for students, but more research is necessary to learn how to best implement these programs.

Editorial: The Consequences of Bilingualism for the Mind and the Brain

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