Rationale

The text type of my written task is an interview, and the task was written for Part 1: Language in cultural context of the Language & Literature course. It is an interview with a leading linguist describing the effects of bilingualism on the human brain, taking inspiration from research she has published linking bilingualism to slowed cognitive decline during aging. I chose the format since I think it is a good way of making the research accessible for readers without having to read a 12-page paper on it, and I am personally interested in doing research on bilingualism in future. Additionally, choosing an interview as the text type of my written task allowed me to posit follow-up questions that show an understanding of the material. I believe my learning outcome, to demonstrate an awareness of how language and meaning are shaped by context and culture, is shown throughout the text in the given answers and posited follow-up questions, for instance when answering the question of how language is processed in bilingual minds, where the answer states how there is a measure of activation of both known languages, even when speaking in a monolingual context, contrary to what you may initially believe.

IB Language Written Task

An Interview with a linguist on the effects of bilingualism on the mind

by Sam van Kampen

As a slightly cheeky way of celebrating this year's International Mother Language Day, we have gotten the chance to sit down with one of the most proficient researchers in contemporary linguistics: Dr. Ellen Bialystok, PhD, a Distinguished Research Professor of Psychology at York University in Toronto, Canada. Her ongoing research concerns the cognitive effects of bilingualism from childhood through adulthood and old age.

Sam: So, doctor, Happy International Mother Language Day! Do you traditionally do anything special today?

Dr. Bialystok: Thank you very much! Our department has been celebrating with cake, but I personally have just been working on my research as a way of celebrating.

Over your career you have published many papers on bilingualism and have become an expert in the field. What properties of bilingualism are you investigating now, compared to when you started researching bilingualism?

When I started researching bilingualism thirty years ago, I concentrated mostly on the cognitive structure of language in the human brain. Nowadays, I am mostly researching its effects on cognition in general, using my earlier research and that of other pioneers in the field to dissect the results. My latest paper, "Bilingualism: Consequences for Mind and Brain", which I co-wrote with my respected colleagues Drs. Craik and Luk, gives a general overview of these effects.

In the paper, you first assert the differences between monolingual and bilingual minds.

Yes. When I started researching bilingualism there was a widespread belief that childhood bilingualism affected developing minds negatively – it would confuse children's language learning. However, when testing various groups of children on both verbal language tasks and nonverbal spatial awareness tasks, researchers found that bilingual children scored better on most tasks, contrary to their expectations that there would be lower scores on the language tasks.

Over the course of the next few decades, research on adult bilinguals showed that bilinguals are generally weaker when it comes to specific language skills. For instance, vocabulary size of both the first, dominant language and the second language in bilingual speakers proved smaller than their monolingual counterparts. Bilingual speakers also proved slower in verbal fluency tests, where they are asked to generate as many words as possible that conform to certain semantic or phonological cues.

So if you want to be a vocabulary wizard, don't learn a second language?

Well, you should at least be prepared to put in more effort than a monolingual speaker.

But in practice, those synthetic tasks don't say much about language usage in practice. And bilinguals at all ages proved to have better executive control skills – switching attention, working memory, et cetera – a group of skills which declines early in aging and supports activities like high-level thinking and sustained attention. These skills are central to academic success, which in turn is a significant indicator of later health and well-being. This advantage has helped protect against cognitive decline, which we speak of in more detail in the rest of the paper.

Further into the paper, you explain the way language is processed in bilingual minds.

Right, so if you imagine you are speaking to your Dutch grandma and she asks you if you want a cup of tea, you have no reason to think of how to reply in English, right? Conversely, in this interview, you have no reason to formulate the questions in Dutch in your mind. However, that turns out not to correspond with the way the bilingual mind works. Instead, bilinguals show some measure of activation of both of the languages they know, even when the context that they are using language in is monolingual.

This joint activation of languages creates a problem for bilingual speakers that does not exist for monolingual speakers: in addition to all of the other areas of language the brain needs to devote attention to, it also has to select the correct language from competing options.

Could this be the reason bilinguals score worse on the synthetic language tests you describe earlier?

It may very well explain part of the score on those tests, and it means bilinguals are at a disadvantage there. But the need to resolve competition in non-linguistic tasks is primarily the responsibility of executive functions, and the increased need for such conflict resolution in linguistic tasks when it comes to bilinguals may explain the increased function of executive control areas. So the disadvantage of language inhibition when it comes to the synthetic tasks could be compensated by an advantage when it comes to executive control.

And you link this advantage to postponing cognitive decline in the rest of your paper?

We posited that this increase in executive control function hinted that bilingualism may be one of the environmental factors that contribute to cognitive reserve – the idea that engagement in stimulating physical or mental activity can act to maintain cognitive function and postpone the onset of symptoms when it comes to dementia.

To test this, we studied hospital records of monolingual and bilingual patients diagnosed with various types of dementia. While equivalent in other cognitive functions, bilingual patients were diagnosed approximately 3 – 4 years later than the monolinguals. A replication of the study with Alzheimer's Disease patients confirmed these results.

Really, it should not be surprising that the intense and sustained experience of using multiple languages has had an effect on our brains. The neural connections that come from practice are surely changed by it, and undoubtedly change through use. But the assumption has long been that these effects would be negative; I remember a researcher from the early twentieth century linking bilingualism to intellectual disabilities. But the weight of scientific evidence supports the idea that bilinguals have more "mental flexibility" and less neurodegeneration in old age, and that bilingualism in fact increases cognitive function.

Thank you so much for having this interview, and I look forward to reading more of your research!

It has been my pleasure.

Sources:

Bialystok, E., Craik, F. I. M., Luk, G. (2013). *Bilingualism: Consequences for Mind and Brain* https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3322418/pdf/nihms365696.pdf