

Two is Better Than One
Bilingual children show superior attention control
by Lau Sin Hang

Bialystok & Martin (2004). Attention and inhibition in bilingual children: evidence from the dimensional change card sort task.

Did you know that more than half of the world's population speaks more than one language? Living in an era marked by globalization and technological advancements, we engage in intercultural communication much more often. Subsequently, being bilingual has been touted as a competitive edge over monolinguals, and a lot of bold claims have been made. For example, some claim that bilinguals are more attractive, smarter, more creative, and have better decision-making skills. This has compelled a lot of parents to encourage their children to learn foreign languages. On the other hand, some worry that a child's brain would not have enough capacity for two or more languages, causing confusion. Is two really better than one?

A research published in *Developmental Science* suggests that bilingual children do indeed have a cognitive advantage over their monolingual counterparts, particularly in disregarding misleading information. Ellen Bialystok and Michelle M. Martin at York University recruited 36 monolingual and 31 bilingual preschoolers to play several card-sorting games. Their whole project consisted of three studies with different purposes. The studies required children to recognize different dimensions of the cards and sort cards according to the experimenters' demand. In all three studies, children had to abide by one set of rules pertaining to one particular feature in the first half, while adhering to another in the second half.

The tweaking of rules in simple card-sorting games causes a great deal of cognitive burden to children. This is because children have to first reconsider their ideas about the cards. Then, they have to ignore the previously relevant information, selectively pay attention to the new features, and physically act accordingly. As the saying goes, old habits die hard, suppressing your habitual response or way of thinking may not be as easy as it seems. However, this difficult task is performed by bilinguals everyday. They have to constantly juggle between linguistic labels and rules from different languages regarding the same concept, and respond appropriately

according to the social circumstances and context. Does this help them become cognitively superior to monolingual children? If so, in what aspect?

In the first study, the children played four games on the computer. From the easiest to the most difficult, they were 1) the color game (red or blue), 2) the color-shape game (red or blue; circle or square), 3) the color-object game (red or blue; rabbit or flower), and 4) the function-location game (toy or wearable item; goes inside or outside the house). They were in an order of increasing difficulty as the first two games only required children to form ideas about their perceptual information but only differed by the number of dimensions, while the third one required them to identify a meaningful object, and the last required them to interpret meaning objects. The sorting boxes were also set to be distracting, e.g., sorting cards that are either red flowers or blue rabbits into boxes that are either blue flowers or red rabbits.

The results showed that everyone did better in the first halves than the second halves of the games, indicating that suppressing habitual response or adapting to new rules is somewhat challenging. Since the color game was only one dimension, only the ability to physically suppress habitual response was tested. The two groups did not vary in that ability. More importantly, bilinguals outperformed monolinguals in the color-shape and color-object games. In these games, the ability to ignore distracting information is particularly relevant. The higher average accuracy in bilingual children showed that they have better selective attention control than monolinguals. On the other hand, it is important to note that the two groups had similar performance in the complicated function-location game. The authors suggest that the difficulty in interpreting meaningful objects outweighs the bilinguals' advantage in ignoring useless information. This is because the function-location concepts are much more abstract and profound than perceptual objects such as shapes and meaningless objects in previous games. The other two studies replicated similar tasks but asked children to sort cards manually, as well as controlled the socio-economic and educational background of the two groups to be similar, and previous results were confirmed.

Although being bilingual does not give your child an advantage in thinking about complex ideas or having better motor control, he/she will most likely be better at selectively attending to useful information and ignoring the rest than monolinguals. This is not to say that

you should rush out and enrol your child in every foreign language class out there, because this advantage is only found in bilinguals with balanced competence in both languages, not just any language learner. All in all, two is indeed better than one, if you can master both languages, that is.