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# Bilingualism Improves Cognitive, Executive and Social Function in Children

**Georgiana Filip**

## Language and Literacy



## **Introduction**

Recent literature has shown that bilingualism can shape brain plasticity, improve the executive functions, increase attention span, and enhance inhibitory control (Bialystok, 2001). Learning a second language is an experience that brings benefits to nonverbal cognitive performance as it engages the majority of the brain: frontal, temporal, parietal lobes and part of the posterior regions (Friederici, 2011). Moreover, in a bilingual's brain, there is an interference between the two languages, both of them seem to be active to a certain degree, even though only one of them is being currently used (Weinreich, 1953). However, empirical evidence demonstrates that the benefits of bilingualism can be attributed to the joint activation theory. According to that, bilinguals have to regulate their attention in order to constantly select and swap between the languages as required, a language-specific process that is not known by monolinguals (Bialystok, 2001).

Infants that are raised in a bilingual environment have been shown to pay more attention to visual cues for detecting linguistic information. Evidence shows that bilingual infants are able to determine when a speaker switches from one language to another in a silent video up to one year old compared to monolinguals that can detect this alteration up to 7-month-old and only based on hearing phonetic variations (Weinkum et al., 2007). Other studies indicate evidence that bilingual infants display better attention and use of memory when responding to a non-verbal stimulus (Singh et al., 2015; Kocacs & Mehler, 2009).

In children, bilingualism represents the key to better mental flexibility and abilities, and is linked to higher levels of concept formation. Vygotsky (1962: 110) defined it as the capacity to acknowledge "[...] language as one particular system among many, to view its phenomena under more general categories, and this leads to awareness of his linguistic operations". As

previous studies showed, the ability to differentiate words and their meaning and use them to form new connections for an enriched cognitive functioning is more complex in bilingual children (Bialystok, 2001). As such, the more accurate response in this metalinguistic task came from bilinguals, who are more capable of controlling their attention and have a greater insight to the form.

### **Intervention**

The current selective-type intervention is designed for children aged 5 to 11 years and should be delivered in two phases. Following the Bronfenbrenner (1979) ecological system model, the first phase will focus on the school and family environment and will be aimed at teachers and parents, respectively (microsystem). The second phase will be directed at the individual, and will involve attitudes, behaviours and skills, that will be measured independently.

The ultimate, long-term aim of this programme is children learning a second language ideally in primary school to subsequently benefit from all the advantages of bilingualism. Intermediate outcomes that occur in individuals in the long-run implies better cognitive performance with superior levels of controlled attention and inhibition correlating with executive functioning. Also, other major benefits of being bilingual include adaptability and enhanced social interaction (Sun et al., 2020). Based on my own experience, I strongly believe that the best way to learn a second language is to experience it both at school and at home. This intervention requires the engagement of teachers, parental support and the individual to learn and subsequently shape behaviour in order to provide the best and most efficient outcomes.

Family environment plays an active role in this programme as the more the child experiences both languages at home, the better it contributes to a superior linguistic proficiency (De

Houwer, 2007). As this intervention is generally targeted at monolingual English families (but not only), there are lower chances that the parents will speak a second language, at least fluently. As such, valuable activities that can be done by parents at home include shared reading, watching TV shows and cartoons, listening to songs and memorizing the lyrics, and playing video games. According to Clark and Foster (2005), children are more likely to enjoy to read magazines, websites, text messages, jokes and books/magazines about TV programmes.

When the child enters primary school, their language input is mostly influenced by teachers and peers who play a substantial role in their linguistic acquisition (De Houwer, 2018). Interestingly, teachers' language expertise has a major impact on delivering good quality teaching sessions in class and subsequently acts on the children's vocabulary acquisition (Unsworth et al., 2015). I strongly believe that schools should give sufficient thought to children to encourage learning a new language as part of an enjoyable, social activity. Learners need accurate guidance from enthusiastic tutors that are capable to influence and ultimately change one's behaviour. Thus, an annual recurrent session incorporating new methods based on recent studies should be given to teachers to achieve their optimal level of delivering information. As clearly noted in one study carried out in 2011, behavioural change is possible only if a person has the skill, opportunity and motivation to do so (Michie et al., 2011).

Furthermore, Unsworth and colleagues (2015) concluded language learners who were trained in schools more than 60 minutes per week were more likely to get remarkably higher scores in receptive vocabulary. This could be divided into two sessions per week to make it easier for children to stay attentive through the whole duration of the class and to achieve higher engagement.

Regarding the individual's motivation and skill, the child should be able to choose their resources. As long as the experience is enjoyable and can be shared with peers and family, the outcome will be stronger. Feedback about the intervention from children will be provided by questionnaire and interviews before and after every school term. To gain sufficient data from teachers and parents and draw significant conclusions focus groups will be lead annually.

To conclude, bilingualism is an essential tool in improving cognitive skills and executive functioning especially when is encountered at early stages of development. This intervention has its weaknesses. It is mainly designed for monolingual English children coming from middle class family. Therefore, more research is needed with more diverse groups. Overall, it is developed for children to learn a second language mainly for pleasure, leading to improved cognitive, executive, and social functions.

## References:

- Bialystok, E. (2001). *Bilingualism in development: Language, literacy, and cognition*. New York: Cambridge University Press.
- Bialystok, E. (2017). The bilingual adaptation: How minds accommodate experience. *Psychological Bulletin*, 143(3), 233–262. <https://doi.org/10.1037/bul0000099>
- Bronfenbrenner, U. (1977). Toward an experimental ecology of human development. *American Psychologist*, 32(7), 513–531. <https://doi.org/10.1037/0003-066X.32.7.513>
- Clark, C. & Foster, A. (2005). *Children's and young people's reading habits and preferences: The who, what, why, where and when*. London: National Literacy Trust.
- De Houwer, A. (2007). Parental language input patterns and children's bilingual use. *Applied Psycholinguistics*, 28(3), 411–424. doi: 10.1017/S0142716407070221
- De Houwer, A. (2018). *The role of language input environments for language outcomes and language acquisition in young bilingual children*. In D. Miller, F. Bayram, J. Rothman & L. Serratrice (Eds.), *Bilingual Cognition and Language: The State of the Science Across its Subfields* (pp.127-154). Amsterdam, the Netherlands: John Benjamins.
- Friederici, A.D. (2011). The brain basis of language processing: from structure to function. *Physiological Reviews*; 91:1357–1392.
- Kovacs, A.M., Mehler, J. (2009) Cognitive gains in 7-month-old bilingual infants. *Proceedings of the National Academy of Science*; 106:6556–6560.
- Michie, S., M. M. v. Stralen and R. West (2011). The behaviour change wheel: A new method for characterising and designing behaviour change interventions. *Implementation Science* 6(42): 11 pages. Available at <http://www.implementationscience.com/content/pdf/1748-5908-6-42.pdf>

- Singh, L., Fu, C. S. L., Rahman, A. A., Hameed, W. B., Sanmugam, S., Agarwal, P., Jiang, B., Chong, Y. S., Meaney, M. J., Rifkin-Graboi, A., & GUSTO Research Team. (2015). Back to basics: A bilingual advantage in infant visual habituation. *Child Development*, 86(1), 294–302. <https://doi.org/10.1111/cdev.12271>
- Sun, H., Ng, S. C., O'Brien, B. A., & Fritzsche, T. (2020). Child, family, and school factors in bilingual preschoolers' vocabulary development in heritage languages. *Journal of Child Language*, 47(4), 817-843. <https://doi.org/10.1017/S0305000919000904>
- Unsworth, S., Persson, L., Prins, T. & de Bot., K. (2015). An investigation of factors affecting early foreign language learning in the Netherlands. *Applied Linguistics*, 35(5), 527–548.
- Vygotsky, L.S. (1962). *Thought and language*. Cambridge, MA: MIT Press.
- Weikum, W. M., Vouloumanos, A., Navarra, J., Soto-Faraco, S., Sebastián-Gallés, N., & Werker, J. F. (2007). Visual language discrimination in infancy. *Science*, 316(5828), 1159. <https://doi.org/10.1126/science.1137686>
- Weinreich, U. (1953) Languages in contact. *New York: Linguistic Circle of New York*.