## Sources of Variability in Language Activation and Control in Spanish/English bilinguals and L2 learners

Teresa Bajo Center for Mind, Brain and Behaviour University of Granada

Proactive and reactive attentional processes have been proposed as candidate mechanisms for language control in bilingual language selection (Braver, 2012; Morales, Yudes, Gómez-Ariza & Bajo, 2015). In fact, the bilingual's superiority in some cognitive tasks has been associated to the use of language control mechanisms that act to prevent interference from the unintended language (e.g. Bialystok, Craik & Luk, 2012). In the present investigation, we provide data suggesting that in many situations language control is achieved by means of inhibitory mechanisms (reactive control) that suppress activation of the non-target language, but that there also situations where control is achieved by using proactive strategies for language selection. By using procedures that permit to asses both activation and inhibition of the non-intended language (negative priming with interlingual homographs, repeated naming and recall, etc.), we provide data indicating that inhibitory/proactive effects are not always evident and that their presence depends on the activation of the non-intended language and on the bilinguals' language experience. Thus, in agreement with some theoretical proposals (Green & Abulatebi, 2013) our data suggests that factors such as L2 fluency, immersion in L2 and training in translation influence the processes involved in language selection, and that these differences in language control also generalize to the type of executive functions that are enhanced by the bilingual experience. Finally, we also provide evidence that individual differences in proactivity modulate high-order processes during L1 and L2 language processing.

## References

- Bialystok, E., Craik, F.I.M., & Luk, G. (2012). Bilingualism: Consequences for mind and brain. *Trends in Cognitive Sciences*, 16, 240-250.
- Braver, T. S. (2012). The variable nature of cognitive control: a dual mechanisms framework. *Trends in Cognitive Sciences*, *16*(2), 106-113.
- Engel de Abreu, P.M.J., Cruz-Santos, A., Tourinho, C.J., Martin, R., & Bialystok, E. (2012). Bilingualism enriches the poor: Enhanced cognitive control in lowincome minority children. *Psychological Science*, 23, 1364 - 1371.
- Green, D. W., & Abutalebi, J. (2013). Language control in bilinguals: The adaptive control hypothesis. *Journal of Cognitive Psychology*, 25, 1-16.
- Morales, J., Yudes, C., Gómez-Ariza, C. J., & Bajo, M. T. (2015). Bilingualism modulates dual mechanisms of cognitive control: Evidence from ERPs. *Neuropsychologia*, 66, 157-169.