

Decoding Language Switching in the Bilingual Brain

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Presentation Abstract Summary For a bilingual individual, every utterance requires a choice about which language to use. For people who speak two languages, switching from one language to another inherently means that they concurrently turn one language “off” and the other “on”. This simultaneousness has made it impossible to answer a fundamental question about bilingual language control: are these two actions directed by the same set of control processes or is there a fundamental difference between the “off” and “on” procedures involved in switching? In this experiment we separated these two computations by having American Sign Language (ASL) - English bimodal bilinguals switch between producing ASL, English or both simultaneously (code-blending). Additionally, given recent evidence suggesting that bilinguals use proactive control to prepare for the upcoming language, we targeted whether we could decode language before lexical retrieval started. Our results showed that turning languages on and off relies on two independent processes and that distinct activity can be found for different languages even before lexical access processes are initiated. In all, our results provide crucial evidence to understand the processes involved in bilingual language representation, switching, and control.

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