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The effect of code-switching experience on the dual mechanism of cognitive control: A comparison between early and late Japanese-English bilinguals

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Abstract

This study attempts to gain novel insights into the mechanisms underlying the bilingual advantage in cognitive control and investigates the effect of code-switching experience in daily life, rather than considering only language proficiency, on these underlying mechanisms. We compared the performances of early and late Japanese-English bilinguals on the AX-Continuous Performance Task. We found early and late bilinguals show different cognitive control mechanisms to cope with interference: with the late bilinguals, the more frequently they switched languages, the better they performed in the proactive control tasks. Conversely, with the early bilinguals who are generally more proficient, the frequency of code-switching did not modulate their dual mechanism of cognitive control any better, showing little correlation with the ability of proactive control. These findings verify the role of switching frequency in the development of cognitive control and suggest a better understanding of the nature of mechanisms regulating early and late bilinguals' brains.