

## DIFFERENT LANGUAGE CONTROL MECHANISMS IN COMPREHENSION AND PRODUCTION: EVIDENCE FROM PARAGRAPH READING

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We investigated similarities versus differences in language control mechanisms across comprehension and production in-context. In Experiments 1 and 2, Chinese-English bilinguals that were dominant in Chinese (N = 24 in each experiment) read paragraphs with language switches using a rapid serial visual presentation (RSVP) paradigm silently while ERPs were measured (Exp 1) or read them aloud (Exp 2). Each paragraph was mainly written in either Chinese or English. In switch conditions, there were eight words switch to the other language in each paragraph, and these switch words were either content words with rich semantic properties or function words with rich syntactic properties. In nonswitch conditions, all words were in the same language. In both experiments, each word was presented for 250 ms, followed by a 250 ms blank. Each participant read six paragraphs in each condition with the Latin-square design (36 paragraphs in total). We examined how switch direction and part of speech affect language switch costs in comprehension (Exp 1) and production (Exp 2).

Function Word Switch to English	现在告诉 <b>me</b> 它在哪里
Content Word Switch to English	现在 <b>tell</b> 我它在哪里
Nonswitch all Chinese	现在告诉 <b>我</b> 它在哪里
Function Word Switch to Chinese	Now <b>tell</b> 我 where it is
Content Word Switch to Chinese	Now 告诉 <b>me</b> where it is
Nonswitch all English	Now <b>tell</b> me where it is

In Experiment 1, we compared ERPs of switch words with their corresponding control words in the nonswitch condition. Language switches elicited an early, long-lasting positivity when switching from the dominant language Chinese to the nondominant language English; in the other switch direction, the positivity started at a later stage, and the size of the effect was smaller than or equal to that when switching to the nondominant language in the three time windows. In addition, switch effects on function words were not significantly larger than those on content words in any time window, in either switch direction. In contrast, in Experiment 2,

participants produced more cross-language intrusion errors (e.g., saying *me* when seeing 我) when switching to the dominant language Chinese than to the nondominant language English, and more errors on function words than content words, suggesting larger switch costs when switching to the dominant language and on function words. We did not measure ERPs in Experiment 2 due to massive artifacts of articulatory movement in connected speech. However, the qualitative differences across experiments in the present study still suggest that switch direction and part of speech affect comprehension and production differently. Switching to the nondominant language elicited larger switch costs in comprehension while switching to the dominant language elicited larger costs in production; there was no clear part of speech effects in comprehension, while the effects were salient in production. These qualitative differences suggested different language control mechanisms across modalities.

