

Supplementary Information for

**An fMRI dataset for investigating language control and cognitive
control in bilinguals**

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Table S1 and S2

Table S1. Normative percentile reference table for CET-4 reported scores.

Score	Percentile (%)	Score	Percentile (%)	Score	Percentile (%)
330	1	450	25	570	83
350	2	470	34	590	90
370	4	490	44	610	95
390	7	510	55	630	98
410	11	530	65	650	99
430	17	550	74		

Notes. If a candidate's reported score is 450, their corresponding percentile rank in the norming group is 25%, indicating that the candidate's English proficiency is better than 25% of the norming group but lower than 75% of it. Similarly, if a candidate's reported score is 500, their corresponding percentile rank in the norming group falls between 44% and 55%, meaning that the candidate's English proficiency is at least better than 44% of the norming group but not better than 55% of it.

Table S2. Data dictionary for .tsv files.

File Name	Column Name	Description
participants.tsv	participant_id	Unique identifier for each participant.
	age	The age of the participant at the time of the experiment.
	sex	Self-reported gender of the participant. "M" for male, "F" for female.
	task_order	Order of task administration. "Lan": the language control task was performed first; "Con": the cognitive control task was performed first.
	task_rule	Task rule mapping. "Red": the red color corresponds to "naming in L1" in the language control task and "pressing the same direction" in the cognitive control task; "Blue": the blue color corresponds to "naming in L1" in the language control task and "pressing the same direction" in the cognitive control task.
	raven_score	Score on the Raven test, a measure of cognitive ability. Full score is 60.
	AoA	Age of Acquisition (AoA), the age at which the participant began learning English.
	CET_4_score	Score on the College English Test Band 4 (CET-4), a standardized English proficiency test in China. Full score is 710.
	RT_[Condition]	Reaction time (ms) for the [Condition] in the language control task. Measured in the behavioral laboratory. "L1S": first language, switch; "L1NS": first language, non-switch; "L2S": second language, switch; "L2NS": second language, non-switch.

	ER_[Condition]	Error rate for the [Condition] in the language control task. Measured in the behavioral laboratory.
	Chinese_[Skill]	Self-rated proficiency in Chinese_[Skill] on a 10-point scale. "1": No proficiency; "5": Intermediate; "10": Expert. Applies to all skills.
	English_[Skill]	Self-rated proficiency in English_[Skill] on a 10-point scale.
*LanguageControl *_events.tsv	onset	The time in seconds from the start of the run when the stimulus presentation begins.
	duration	The duration of the stimulus presentation in seconds.
	trial_type	The specific condition of the trial. "L1S": first language, switch; "L1NS": first language, non-switch; "L2S": second language, switch; "L2NS": second language, non-switch.
	stimulus	The specific stimulus presented during the trial.
*CognitiveControl *_events.tsv	onset	The time in seconds from the start of the run when the stimulus presentation begins.
	duration	The duration of the stimulus presentation in seconds.
	trial_type	The specific condition of the trial. "CS": congruent, switch; "CNS": congruent, non-switch; "ICS": incongruent, switch; "ICNS": incongruent, non-switch.
	stimulus	The specific stimulus presented during the trial.
	accuracy	The correctness of the participant's response.
	response_time	The time in seconds from the stimulus onset to the participant's response.
group_T1w.tsv	bids_name	The BIDS-compliant identifier for the participant.
	cnr	The contrast-to-noise ratio (CNR). Evaluates the separation between gray matter (GM) and white matter (WM) distributions. Higher values indicate better quality.
	fwhm_avg	The average full-width at half-maximum (FWHM) of the spatial intensity profile. Lower values indicate sharper images; higher values suggest blurrier images.
group_bold.tsv	bids_name	The BIDS-compliant identifier for the participant.
	fd_mean	The average Framewise Displacement (FD). Expresses instantaneous head-motion.
	tsnr	The temporal signal-to-noise ratio (tSNR). Measures BOLD signal stability. Higher values are better.