Appendix

Table A1. *Descriptive statistics for BSQ scales*

Scales	Mean	SD	Reliability	
			Alpha	**CI 90%**
L1S	9.22	2.02	0.77	(0.75, 0.77)
L2S	11.12	1.7	0.81	(0.77, 0.81)
CS	10.07	2.38	0.72	(0.69, 0.73)
US	7.09	2.38	0.72	(0.69, 0.73)
OS	37.5	5.62	0.54	(0.53, 0.55)

Note. Internal consistency (alpha) of scales also reported above. *L1S* (switch to Spanish); *L2S* (switch to English); *CS* (contextual switch); *US* (unintended switch); *OS* (overall switch score).

Table A2. *Variance Inflation Factor (VIF) Values*

Predictor	VIF (ACC)	VIF (RT)
Order	1.25	1.12
Language	1.1	1.0
AY*	2.4	1.06
BSQ (L2S)	1.12	1.12
Dominance	1.07	1.03
Order × Language	1.22	1.02
Order × AY*	2.44	1.02
Language × AY*	2.49	1.03
Order × Language × AY*	2.49	1.01

Note. VIF values computed for fixed effects included in Accuracy and RT models. All values are less than 5, indicating low multicollinearity and model robustness. AY*; AY Errors variable was used in the Accuracy model, AY RTs variable was used in the RT model.

Table A3. *Estimated Coefficients from the (Simple) Mixed-Effects Logistic Regression Model on Picture Naming Accuracy*

Fixed effects	Estimate	SE	z-values	p	95% CI
(Intercept)	2.95	0.19	15.57	**<.001**	2.58 – 3.33
Order	-0.23	0.18	-1.29	0.2	2.58 – 3.33
Language	1.67	0.34	4.96	**<.001**	1.01 – 2.33
AY Errors	-0.09	0.09	-0.99	0.32	-0.26 – 0.09
Order × Language	0.26	0.18	1.49	0.14	-0.08 – 0.6
Order × AY Errors	0.15	0.18	0.87	0.39	-0.19 – 0.5
Language × AY Errors	0.17	0.09	1.98	**<.05**	0.002 – 0.34
Order × Language × AY Errors	-0.55	0.17	-3.15	**<.01**	-0.89 – -0.21

Random effects	Variance	SD			
Intercept | Item	3.08	1.75			
Intercept | Participant	0.33	0.57			

Note. Model formula: *glmer(Accuracy ~ Order*Language*AY Errors + (1|Participant) + (1|Item))*. Confidence intervals (CI). Language Dominance based on BLP responses. Intercept is scaled accuracy for picture naming. Bolded *p*-values are statistically significant from zero.

Table A4. *Estimated Coefficients from the (Simple) Linear Mixed-Effects Model on Picture Naming Reaction Times*

Fixed effects	Estimate	SE	t	p	95% CI
(Intercept)	3.08	0.009	359.7	**<.001**	3.06 – 3.10
Order	-0.02	0.01	-1.28	0.21	-0.05 – 0.01
Language	-0.05	0.01	-4.89	**<.001**	-0.08 – -0.03
AY Errors	-0.004	0.007	-0.59	0.56	-0.01 – 0.02
Order × Language	-0.04	0.006	-6.98	**<.001**	-0.05 – -0.03
Order × AY Errors	-0.01	0.01	-0.59	0.56	-0.03 – 0.01
Language × AY Errors	-0.01	0.003	-2.71	**<.01**	-0.02 – -0.01
Order × Language × AY Errors	0.004	0.006	0.63	0.53	-0.01 – 0.02

Random effects	Variance	SD			
Intercept	Item	0.004	0.06		
Intercept	Participant	0.002	0.05		

Note. Model formula: *lmer(Reaction Times ~ Order *Language*AY Errors + (1|Participant) + (1|Item))*. Confidence intervals (CI). Language Dominance based on BLP responses. Intercept is log reaction times for picture naming. Bolded *p*-values are statistically significant from zero.

Table A5. *Descriptives of Language Production Measures: Verbal Fluency*

Variable	Order	Min	Max	Mean	Median	SD
Verbal Fluency						
Spanish exemplars	English-first	16	60	42.1	42	9.82
Spanish exemplars	Spanish-first	29	72	44	45	16.4
English exemplars	English-first	24	74	50.8	50.5	11.0
English exemplars	Spanish-first	28	64	46	51	15.4

Note. Mean and standard deviations for language production measures by each task and divided by order of presentation.

Table A6. *Linear Model Predicting English Verbal Fluency*

Fixed effects	Estimate	SE	t	p
(Intercept)	44.76	2.47	18.1	**<.001**
Order	6.34	3.44	1.84	0.07

Note. Model formula: *lm(English Verbal Fluency ~ Order)*. Intercept is the predicted number of exemplars produced in English for participants in the Spanish-first group (Order = 0). Bolded *p*-values are statistically significant from zero.

Table A7. *Linear Model Predicting Spanish Verbal Fluency*

Fixed effects	Estimate	SE	t	p
(Intercept)	44.1	2.45	17.98	**<.001**
Order	-2.3	3.41	-0.67	0.5

Note. Model formula: *lm(Spanish Verbal Fluency ~ Order)*. Intercept is the predicted number of exemplars produced in Spanish for participants in the Spanish-first group (Order = 0). Bolded *p*-values are statistically significant from zero.

Table A8. *Descriptives of AX-CPT Measures*

Variable	M	SD
BSI Composite Score	0.17	0.26
AY Trials		
Reaction times (ms)	679	516
Error rates	0.26	0.21
BX Trials		
Reaction times (ms)	432	315
Error rates	0.25	0.27

Note. Mean and standard deviations for AX-CPT measures. The composite score for the BSI based on correct reaction times was calculated using (AY - BX)/(AY + BX).
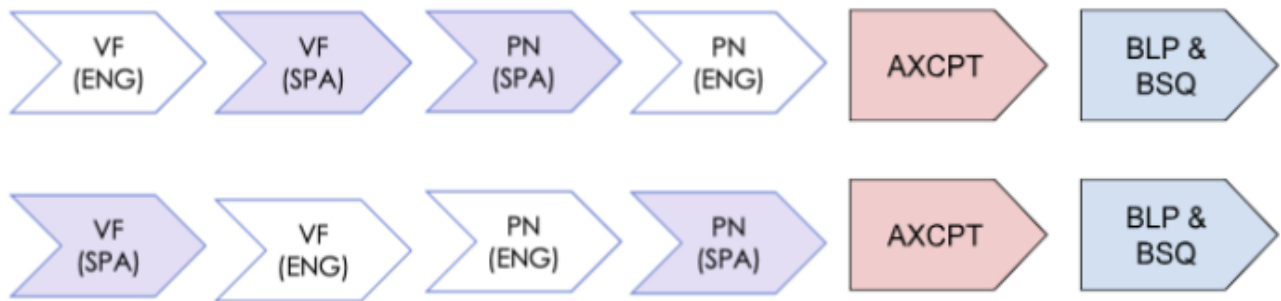
Figure A1. Experiment procedure. Participants first completed two blocks of the verbal fluency task in each of their languages. Participants in the "Spanish-first" condition completed the first block of picture-naming in Spanish. Conversely, participants in the "English-first" condition completed the first block in English. All participants completed the AX-CPT task and the questionnaires at the end of the session.
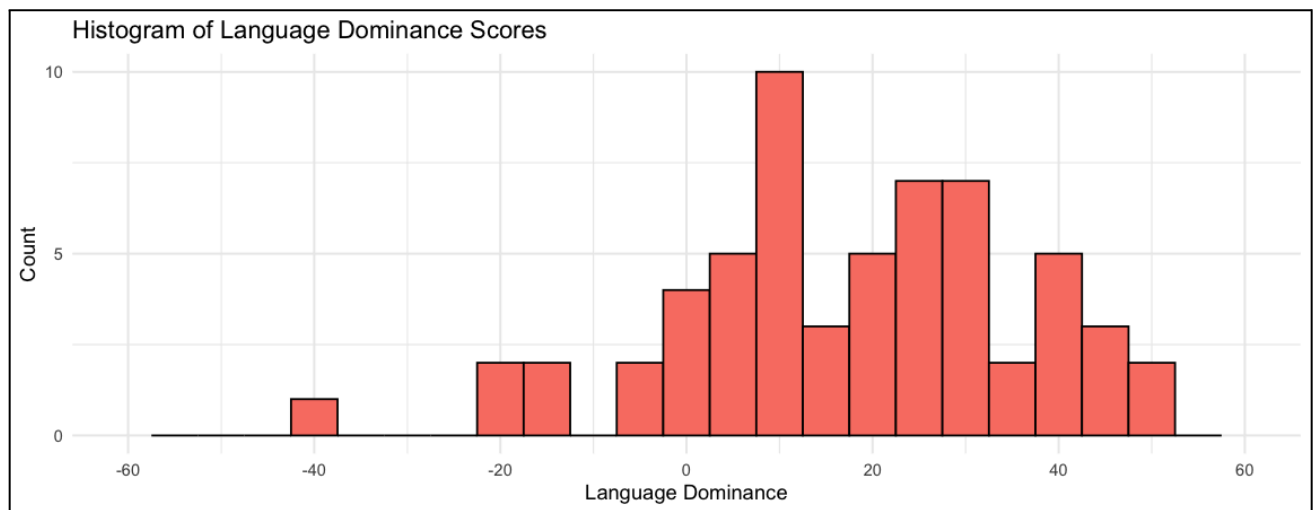

Figure A2. Histogram of language dominance scores. Positive language dominance scores indicate English-dominance (negative scores indicate Spanish-dominance) and scores closer to 0 indicate balanced bilingualism.
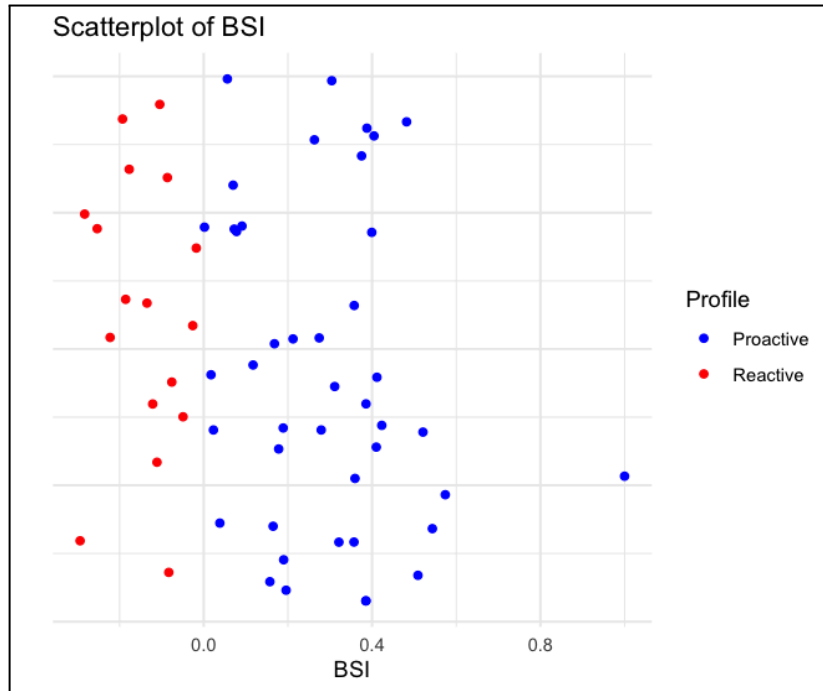
Figure A3. Spread of BSI scores for participants in our sample. Possible scores range from -1 to +1. A positive BSI indicates reliance on proactive control and a negative BSI indicates reliance on reactive control.

Figure A4. Main effect of dominance (standardized) on reaction times ($p < .05$). The average raw dominance score for our sample was 17.25, standard deviation = 18.66. Raw dominance scores for individuals 1 SD below the mean are less English-dominant and more Spanish-dominant (above the mean, more English dominant).