

Table S2. Summary of the statistical tests for each experiment.

Experiment	Figure	Test	Sign	Condition	Statistical test	Eagle Test statistic	p	Peace Test statistic	p	Quick Test statistic	p	Tino Test statistic	p	Neri Test statistic	p	Thihra Test statistic	p
Experiment 1	Figure 3	Bye		Front	Binomial		0.0156		0.0010		0.0156						
				Back	Binomial		0.0010		0.0039		0.0039						
				Front vs Back	$\chi^2(1)$	16.000	0.0001	0.000	1.0000	0.000	1.0000						
		Talk		Front	Binomial		0.0156		0.0010		0.0156						
				Back	Binomial		0.0010		0.0352		0.0039						
				Front vs Back	$\chi^2(1)$	16.000	0.0001	14.318	0.0002	14.000	0.0002						
Experiment 2	Figure 4	Bye		Upright	Binomial				<0.0001		<0.0001						
				Inverted	Binomial				0.0033		0.0001						
				Upright vs Inverted	$\chi^2(1)$			7.536	0.0060	4.456	0.0348						
		Talk		Upright	Binomial				<0.0001		0.5000						
				Inverted	Binomial				0.0023		<0.0001						
				Upright vs Inverted	$\chi^2(1)$			25.337	<0.0001	11.652	0.0006						
Experiment 3	Figure5 (Left)	X●	BL	Upright	Binomial									<0.0001		<0.0001	
				Inverted	Binomial									<0.0001		<0.0001	
				Upright vs Inverted	$\chi^2(1)$									2.028	0.1544	0.000	1.0000
		X●		Upright	Binomial									0.0004		0.0001	
				Inverted	Binomial									0.4427		0.4427	
				Upright vs Inverted	$\chi^2(1)$									5.441	0.0197	8.711	0.0032
	Figure 5 (Right)	X●■	BL	Upright	Binomial												<0.0001
				Inverted	Binomial												<0.0001
				Upright vs Inverted	$\chi^2(1)$											3.446	0.0634
			Yes	Upright	Binomial												<0.0001
				Inverted	Binomial												<0.0001
				Upright vs Inverted	$\chi^2(1)$											0.000	1.0000
		■		Upright	Binomial												<0.0001
				Inverted	Binomial												<0.0001
				Upright vs Inverted	$\chi^2(1)$											1.005	0.3160
		HSR		Upright	Binomial												<0.0001
				Inverted	Binomial												<0.0001
				Upright vs Inverted	$\chi^2(1)$											2.844	0.0917
		X●		Upright	Binomial												<0.0001
				Inverted	Binomial												0.0967
				Upright vs Inverted	$\chi^2(1)$											17.423	<0.0001
Experiment 4	Figure 7	Overall		Left side vs Right side	M-H test, $\chi^2(1)$	5.683	0.0171	0.076	0.7834	0.413	0.5204						
	Figure 8	Talk	Left side	Congruent	Binomial		0.0002		0.0032		0.0005						
				Incongruent	Binomial		0.0002		0.0193		0.0032						
				Congruent vs Incongruent	$\chi^2(1)$	24.000	<0.0001	12.677	0.0004	19.326	<0.0001						
				Congruent	Binomial		0.0002		0.0002		0.0002						
		Right side		Incongruent	Binomial		0.0193		0.0002		0.6128						
				Congruent vs Incongruent	$\chi^2(1)$	2.182	0.1396	24.000	<0.0001	8.000	0.0047						
		Overall		Left vs Right	$\chi^2(1)$	4.689	0.0304	37.173	<0.0001	1.001	0.3170						
				Congruent vs Incongruent	M-H test, $\chi^2(1)$	20.676	<0.0001	0.321	0.5713	22.549	<0.0001						
Experiment 5	Figure 9	Overall		Left eye vs Right eye	M-H test, $\chi^2(1)$			17.364	<0.0001			24.357	<0.0001				
	Figure 10	Bye	Left eye only	Congruent	Binomial				0.0003				<0.0001				
				Incongruent	Binomial				0.2272				0.2272				
				Congruent vs Incongruent	B-D test, $\chi^2(1)$			4.571	0.0325			14.545	0.0001				
		Right eye only		Congruent	Binomial				0.0384				<0.0001				
				Incongruent	Binomial				0.0021				<0.0001				
				Congruent vs Incongruent	$\chi^2(1)$			0.821	0.3650			0.000	1.0000				
		Overall		Left vs Right	B-D test, $\chi^2(1)$			4.701	0.0301			4.103	0.0428				
				Congruent vs Incongruent	M-H test, $\chi^2(1)$			0.375	0.5405			11.414	0.0007				
		Talk	Left eye only	Congruent	Binomial				0.0003				0.2272				
				Incongruent	Binomial				0.0003				0.0106				
				Congruent vs Incongruent	$\chi^2(1)$			24.500	<0.0001			6.348	0.0118				
		Right eye only		Congruent	Binomial				0.1051				0.0021				
				Incongruent	Binomial				0.1051				0.4018				
				Congruent vs Incongruent	$\chi^2(1)$			0.000	1.0000			6.788	0.0092				
		Overall		Left vs Right	B-D test, $\chi^2(1)$			13.949	0.0002			0.032	0.8574				
				Congruent vs Incongruent	M-H test, $\chi^2(1)$			11.006	0.0009			10.960	0.0009				

Note. Binomial: Binomial test, $\chi^2(1)$: Chi-square test, M-H test: Mantel-Haenszel test, B-D test: Breslow-Day test