1   **Interbrain Synchrony Mitigates the Polarizing Effect of Echo Chambers**

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3   **Supplementary Material**

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5   **Supplementary Figure 1.**

6   *A moral dilemma and the moral appropriateness scale*

Enemy territory:

Baxter is the leader of a small group of soldiers. He and his soldiers are on their way back from a completed mission deep in enemy territory when Chris, one of Baxter's men has stepped in a trap that has been set by the enemy and is badly injured. The trap is connected to a radio device that by now has alerted the enemy to the soldier's presence. The enemy will soon be on their way. If the enemy finds the injured man, they will torture him and kill him. He begs Baxter not to leave him behind, but if Baxter tries to take him with him, the entire group will be captured. The only way to prevent this injured soldier from being tortured is for Baxter to shoot him himself.

Is it morally appropriate for Baxter to shoot this soldier in order to prevent him from being tortured by the enemy?

1	2	3	4	5	6	7	8
Completely morally inappropriate	Morally inappropriate	Somewhat immoral	Slightly immoral	Slightly moral	Somewhat moral	morally appropriate	Completely morally appropriate

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8   *Note.* A screenshot of a computer screen in which one dilemma (out of ten) is presented

9   to the participants in our study. Underneath is the interactive moral appropriateness scale. Note

10   that the content in the screen is translated here to English, whereas the actual content in our

11   study was in either Hebrew or Arabic.

Supplementary Table 1

Comparing Interbrain synchrony levels between real and pseudo groups across all ROI pairs and across both experimental conditions.

Condition	ROI pair	β₁	SE	DF	*T* value	*P* Value	bonferroni corrected sig.
Discussion	Left dlPFC (BA46)	0.0134	0.0032	877.31	4.3822	< .001	TRUE
Discussion	Right dlPFC (BA46)	0.0106	0.0027	896	3.8308	< .001	TRUE
Discussion	Left dlPFC (BA9)	0.0138	0.0029	887.09	4.7806	< .001	TRUE
Discussion	Right dlPFC (BA9)	0.0125	0.0027	883.79	4.5388	< .001	TRUE
Discussion	Left pars opercularis	0.0126	0.0028	897	4.3856	< .001	TRUE
Discussion	Right pars opercularis	0.0114	0.0027	896	4.1522	< .001	TRUE
Discussion	Left pars triangularis	0.0109	0.0027	887.56	4.0225	< .001	TRUE
Discussion	Right pars triangularis	0.0163	0.0028	887.62	5.7698	< .001	TRUE
Discussion	Left premotor cortex	0.0104	0.0028	887.74	3.7337	< .001	TRUE
Discussion	Right premotor cortex	0.0133	0.0029	886.41	4.6044	< .001	TRUE

Fixation	Left dlPFC (BA46)	0.0062	0.0044	876.6	1.3973	0.1626	FALSE
Fixation	Right dlPFC (BA46)	0.0054	0.0040	885.53	1.3373	0.1814	FALSE
Fixation	Left dlPFC (BA9)	0.0085	0.0041	886.4	2.0659	0.0391	FALSE
Fixation	Right dlPFC (BA9)	0.0067	0.0039	885.29	1.6984	0.0897	FALSE
Fixation	Left pars opercularis	0.0071	0.0039	886.56	1.791	0.0736	FALSE
Fixation	Right pars opercularis	0.009	0.0042	885.5	2.1517	0.0316	FALSE
Fixation	Left pars triangularis	0.0107	0.0040	886.37	2.6735	0.0076	FALSE
Fixation	Right pars triangularis	0.0103	0.004192	886.42	2.4659	0.0138	FALSE
Fixation	Left premotor cortex	0.01	0.0043	886.42	2.3165	0.0207	FALSE
Fixation	Right premotor cortex	0.0051	0.0042	885.25	1.2041	0.2288	FALSE

Note. This table summarizes the results of the twenty combarsions comparing interbrain synchrony value in real groups (dummy coded as 1) to pseudo groups (dummy coded as 0), across various ROI pairs and in both experimental conditions. That table includes the estimate of beta (synchrony in real groups minus synchrony in pseudo groups), standard error (SE), degrees of freedom (DF), t-value, p-value, and whether or not the p-value is significant compared to a Bonferroni corrected critical p.

Supplementary Table 2

Model comparisons between the ten separate H1 models and their corresponding null models.

ROI pair	Model	N paramters	AIC	BIC	Chi square	DF	p value
Left dlPFC	Null Model	5	904.785	925.162			
(BA46)	H1 Model	7	895.597	924.125	13.187	2	0.0013
Right dlPFC	Null Model	5	927.1426	947.6217			
(BA46)	H1 Model	7	929.080	957.751	2.0619	2	0.3566
Left dlPFC	Null Model	5	923.408	943.876			
(BA9)	H1 Model	7	926.684	955.339	0.7242	2	0.6961
Right dlPFC	Null Model	5	919.187	939.643			
(BA9)	H1 Model	7	921.541	950.180	1.6461	2	0.439
Left pars	Null Model	5	928.323	948.814			
opercularis	H1 Model	7	932.202	960.889	0.121	2	0.9412
Right pars	Null Model	5	926.143	946.622			
opercularis	H1 Model	7	929.962	958.633	0.1808	2	0.9135
Left pars	Null Model	5	926.396	946.875			
triangularis	H1 Model	7	929.047	957.718	1.3491	2	0.5093
Right pars	Null Model	5	922.767	943.224			
triangularis	H1 Model	7	925.579	954.218	1.1883	2	0.552
Left premotor cortex	Null Model	5	925.905	946.3729			
	H1 Model	7	925.882	954.537	4.0227	2	0.1338
Right premotor cortex	Null Model	5	916.065	936.499			
	H1 Model	7	917.485	946.092	2.5807	2	0.2751

Note. This table summarizes the results of the ten model comparisons.