

Replication of ‘Physiological Arousal and Political Beliefs’

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Abstract

This is a replication of the article “Physiological Arousal and Political Beliefs” using code and data available through the public Harvard Dataverse. Below are replications of Figure 2, Table 1, and Figure 3. Several alterations are made to the replicated figures. Figure 2 is first presented in its original form then in a boxplot transformation in order to convey more distributional information. Two additional models, which include subject fixed effects, were added to table 1 to examine robustness. Finally, Figure 3’s results were replicated using Bayesian distributions rather than frequentist. Formatting was improved for all three.

As an extension of the article’s work, several interaction models, building upon the authors’ work by integrating racial-group-specific treatment effects, are explored. These models suggest potentially interesting racial differences in treatment effects, but the power of these results are limited by a scarcity of observations.

Video Condition Significantly Affects Physiological Anxiety Response

As measured by skin conductance reactivity

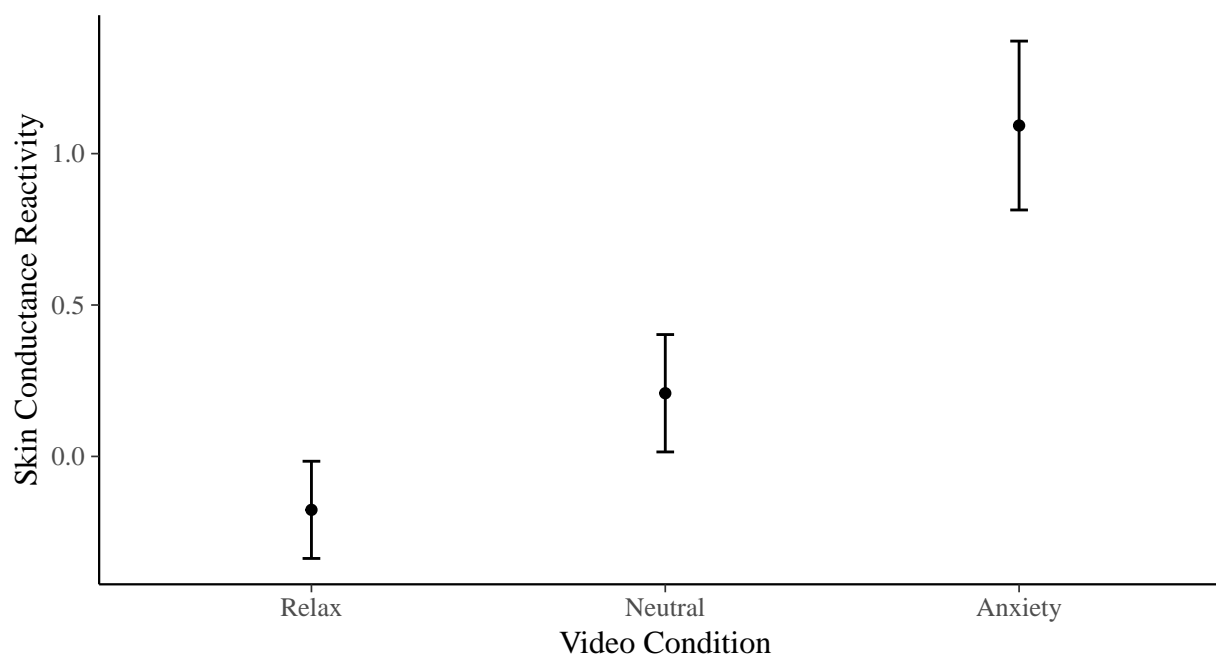


Figure 2. Means of skin–conductance reactivity by video condition. 95% confidence intervals are presented in black. These distributions suggest that in a simple analysis of treatment group means, we find significantly different (i.e. non–overlapping CI) physiological responses.

Boxplot Analysis Paints a Far Murkier Picture

Observational distributions display significant overlap

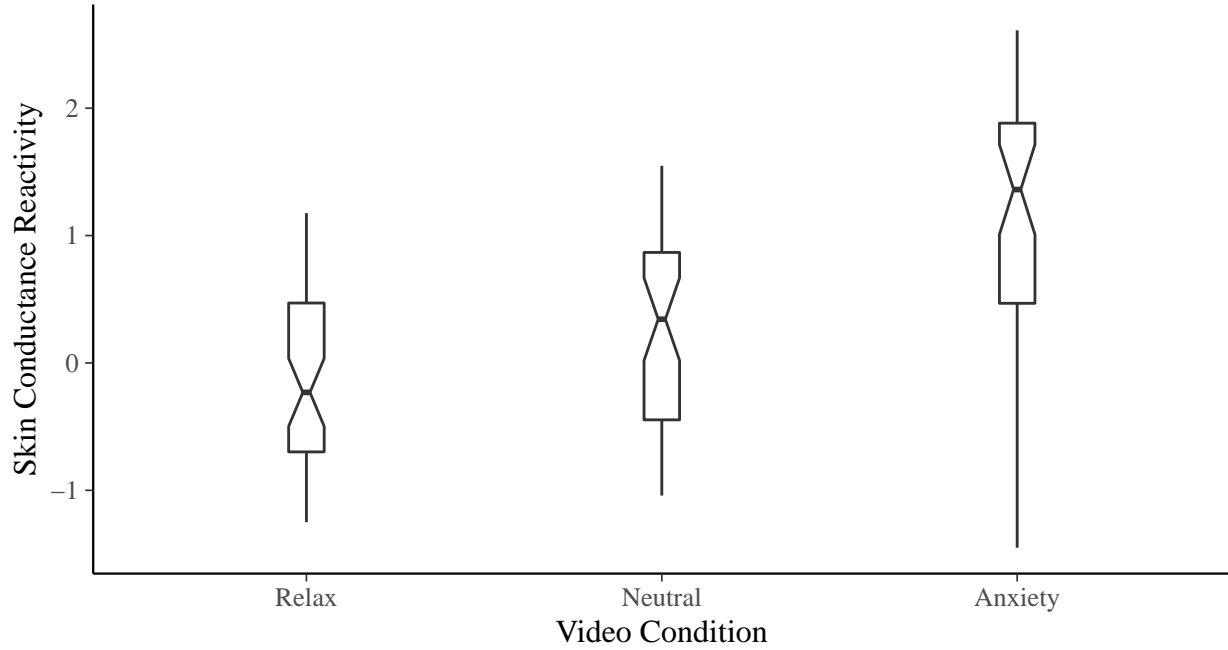


Figure 2 Extension. Boxplots of skin–conductance reactivity by video condition. Box midpoints signify group medians (rather than means). Notches signify median 95% confidence intervals. Overall data variability appears to be greater than one might expect from Figure 2 alone.

Table 1: Main Results

	<i>Dependent variable:</i>			
	SC Reactivity (1)	Immigration Preferences (2)	SC Reactivity+ (3)	Immigration Preferences+ (4)
Anxiety Manipulation	0.339* (0.195)	−0.277 (0.178)	0.280 (0.204)	−0.449** (0.178)
Story Condition		0.386** (0.176)		0.347** (0.172)
SC Reactivity		0.232** (0.100)		0.202** (0.101)
Subject Fixed Effects			✓	✓
Observations	81	81	81	81
R ²	0.037	0.120	0.140	0.277

Notes: Models (1) and (3) show the effect of the treatment (anxiety) on physiological reactivity while Models (2) and (4) show the effects of physiological reactivity on immigration preferences, controlling for the story condition. Models (3) and (4) include subject fixed effects for political ideology, age, income, race, and educational attainment. The significance of Model (4) suggests robustness to these fixed effects.

*p<0.1; **p<0.05; ***p<0.01

Anxiety Conditions Affect Immigration Stance Through Physiological Activation

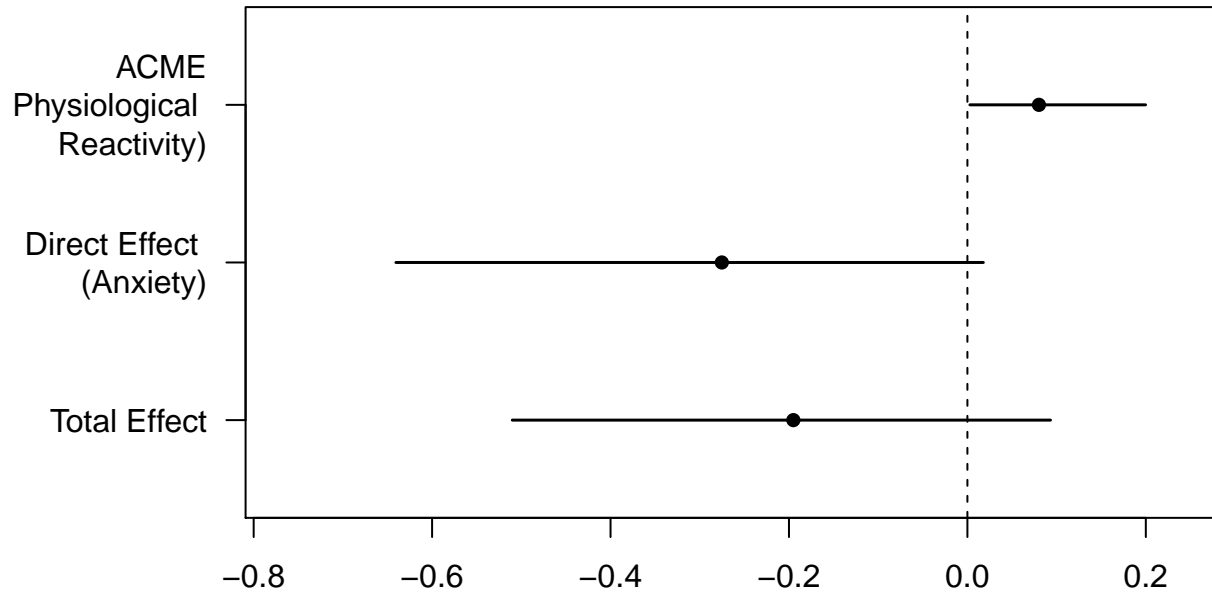


Figure 3. Causal mediation plot. Treatment is anxiety video manipulation (compared to neutral condition), Mediator is skin conductance reactivity when answering immigration questions, Outcome is composite variable of immigration preferences. Horizontal lines represent 90% confidence intervals for estimates. Analysis was done using bayesian methodology, iteratively developing posterior data using model parameters.

Table 2: Grouped Results

	<i>Dependent variable:</i>		
	Immigration Preferences		
	(1)	(2)	(3)
Anxiety Manipulation	−0.133 (0.908)	−0.038 (0.900)	0.168 (0.895)
Story Condition		0.286 (0.179)	0.321* (0.179)
SC Reactivity			0.186* (0.105)
raceAfricanAmerican	2.109*** (0.237)	2.005*** (0.243)	1.880*** (0.253)
raceAsian	3.000*** (0.393)	2.857*** (0.399)	2.782*** (0.395)
raceCaucasian	2.200*** (0.164)	2.100*** (0.174)	2.059*** (0.173)
raceHispanic	1.400* (0.786)	1.400* (0.778)	1.478* (0.768)
anxcond:raceAfricanAmerican	−0.296 (1.002)	−0.344 (0.992)	−0.561 (0.996)
anxcond:raceAsian	−0.812 (1.017)	−0.895 (1.008)	−1.187 (1.011)
anxcond:raceCaucasian	−0.067 (0.937)	−0.232 (0.933)	−0.462 (0.928)
anxcond:raceHispanic	1.633 (1.323)	1.395 (1.318)	0.895 (1.327)
Observations	83	83	81
R ²	0.891	0.895	0.899

Notes: Models (1), (2), and (3) utilize racial interaction effects to examine the differences between treatment effects by racial group. These results suggest, interestingly, that the anxiety treatment might decrease exclusionary attitudes in hispanics, and increase those attitudes in all others. Anxiety might increase immigrant-exclusionary attitudes in non-immigrant groups while decreasing immigrant-exclusionary attitudes in populations with traditionally high rates of immigration. This analysis is speculative and is likely biased by the scarcity of hispanic subjects (only 3 study participants). *p<0.1; **p<0.05; ***p<0.01