Midterm: Physiological Arousal and Political Beliefs

Gabe Walker

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Abstract

I partially replicate "Physiological Arousal and Political Beliefs" by Renshon, Lee, and Tingley (2015). The main regression results (Table 1) appear exactly as in the original paper. I have improved the aesthetics of Figures 2 and 3 with a more minimal and unified style. Note that the results of Figure 2 are different than in the original. Though I find significantly different skin-conductance reactivities for each video treatment group, the overall conclusions are no different. Figure 3 results are the same as in the paper. For the original replication data, see Renshon, Lee, and Tingley (2014).

In my extension I attempt to confirm the main results of the paper using Bayesian linear models. I find that the new models produce findings equivalent to the original ones, which lends credence to the authors' argument that physiological reactivity mediates the relationship between induced anxiety and attitudes toward immigrants.

Table 1. Main Results: Physiological reactivity mediates the relationship between induced anxiety and attitudes toward immigrants.

	SC Reactivity	Immigration Preferences
	(1)	(2)
Anxiety Manipulation	0.339*	−0.277
	(0.195)	(0.178)
Story Condition		0.386**
		(0.176)
SC Reactivity while answering questions		0.232**
		(0.100)
Constant	0.115	1.983***
	(0.137)	(0.138)
N	81	81
R^2	0.037	0.120

*p < .1; **p < .05; ***p < .01

Note. Model (1) shows the effect of the treatment (anxiety) on physiological reactivity while Model (2) shows the effects of physiological reactivity on immigration preferences, controlling for the story condition. Both models include only *Neutral* & *Anxiety* conditions (the *Relax* condition is excluded).

Standard errors in parentheses.

Note that a higher coefficients correspond to *less* favorable views on immigration.

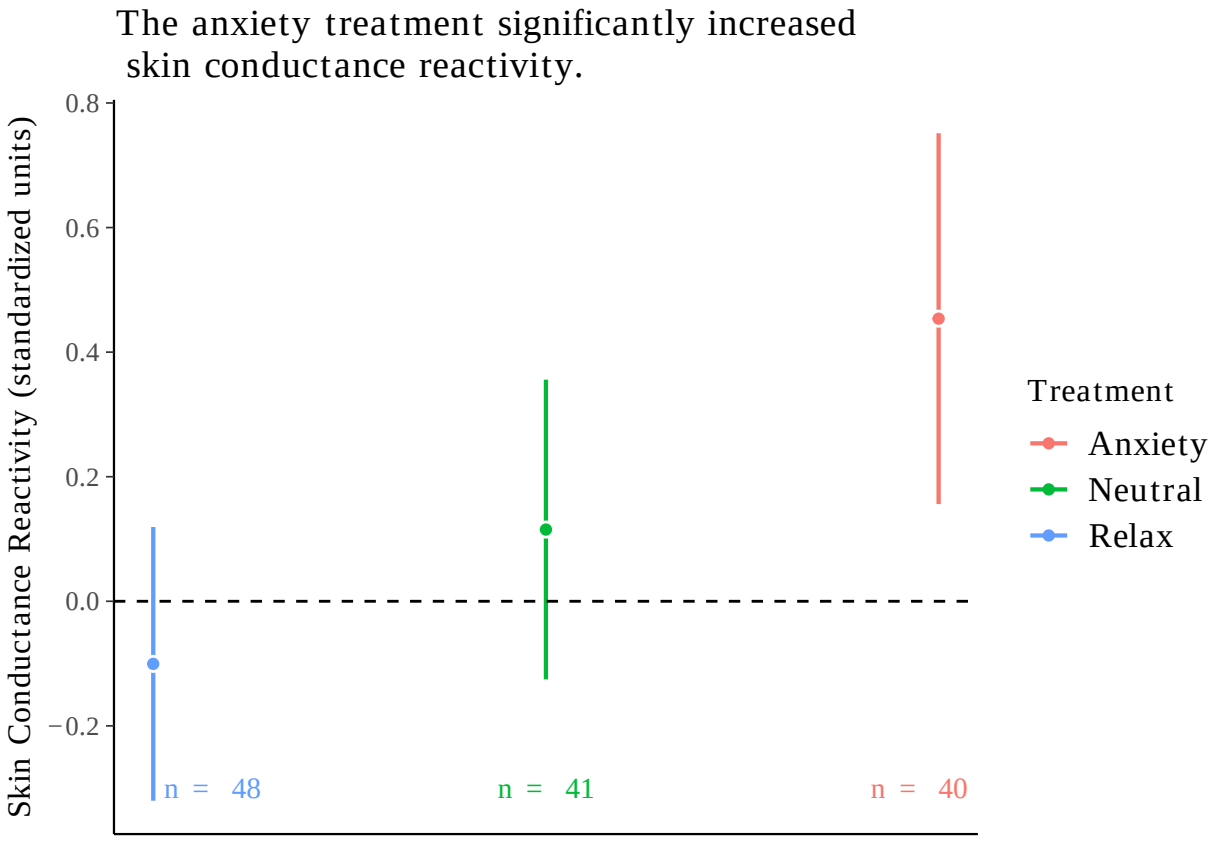


Figure 2. Means of skin-conductance reactivity by video condition. 95% confidence intervals shown.

Note that the means (and intervals) are quite different than those shown in the original paper. The overall conclusion, however, that the anxiety treatment significantly increased skin conductance reactivity, is no different.

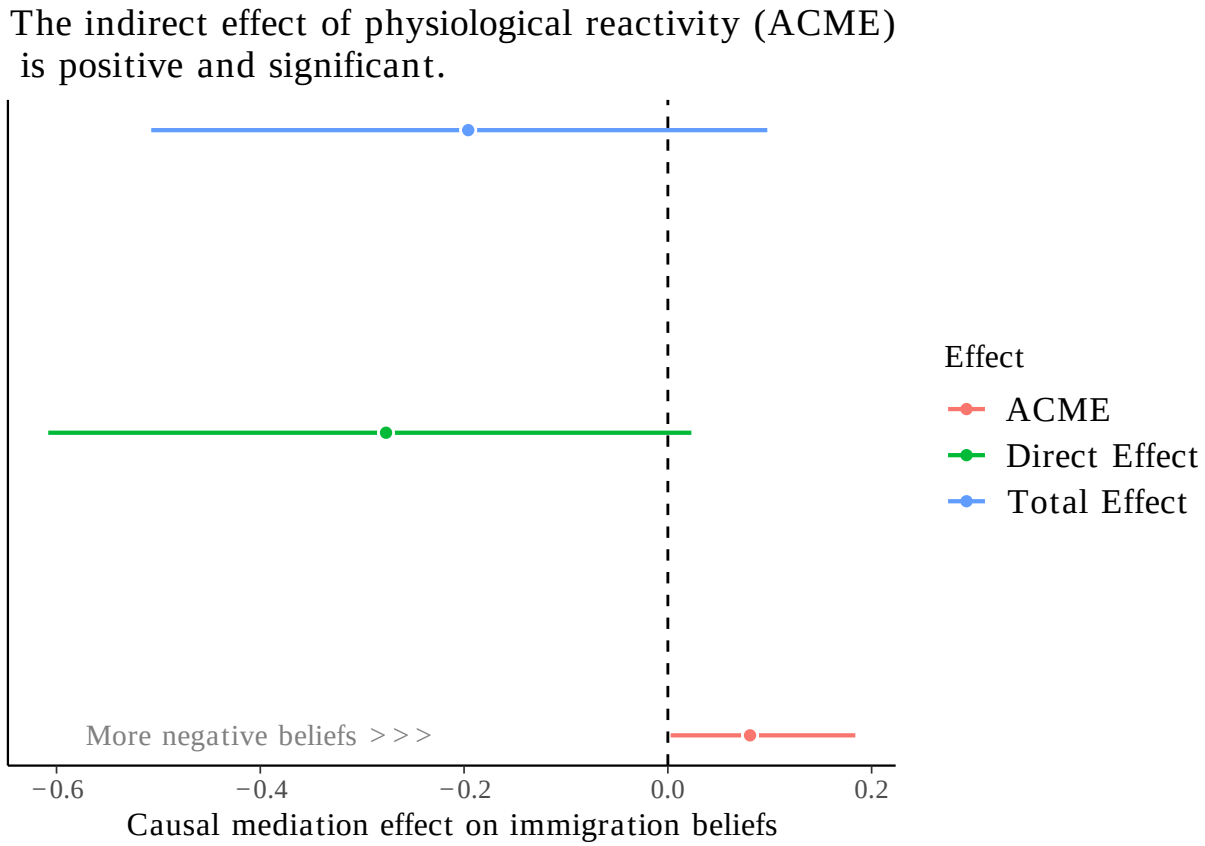
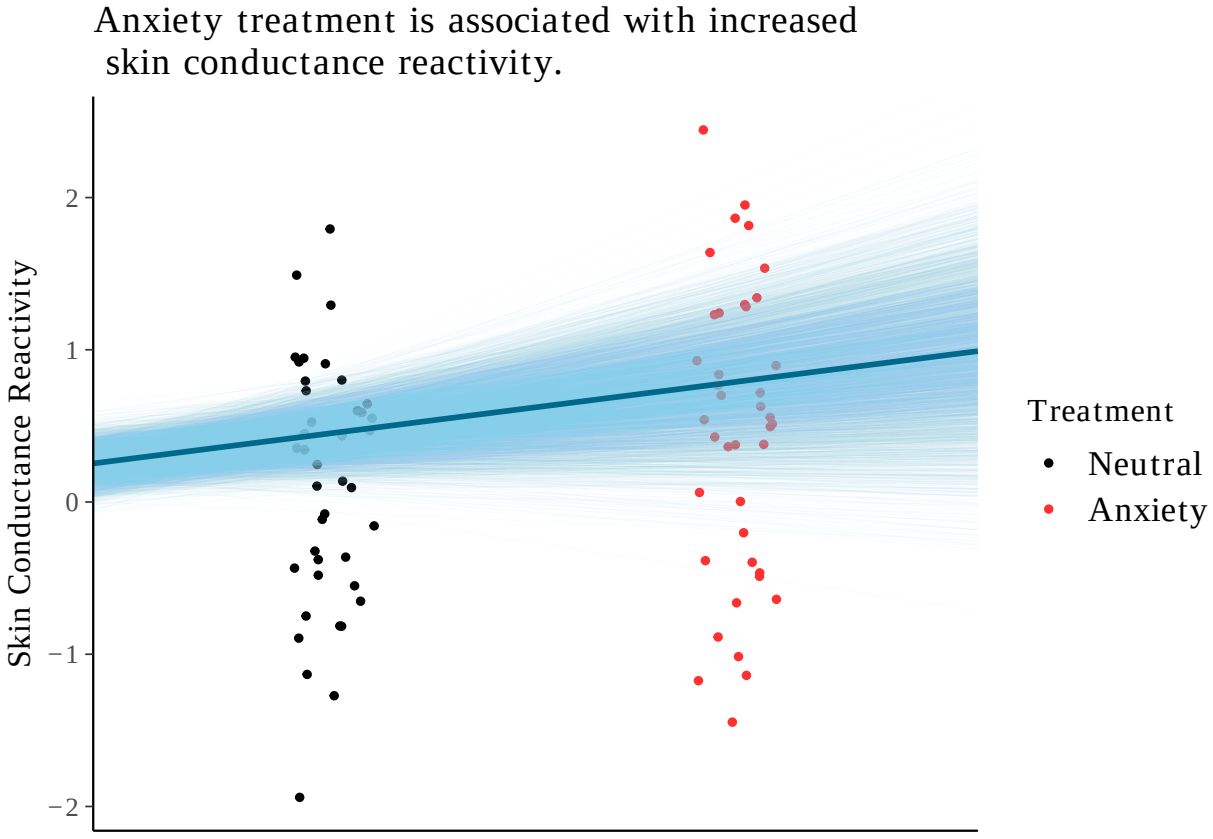


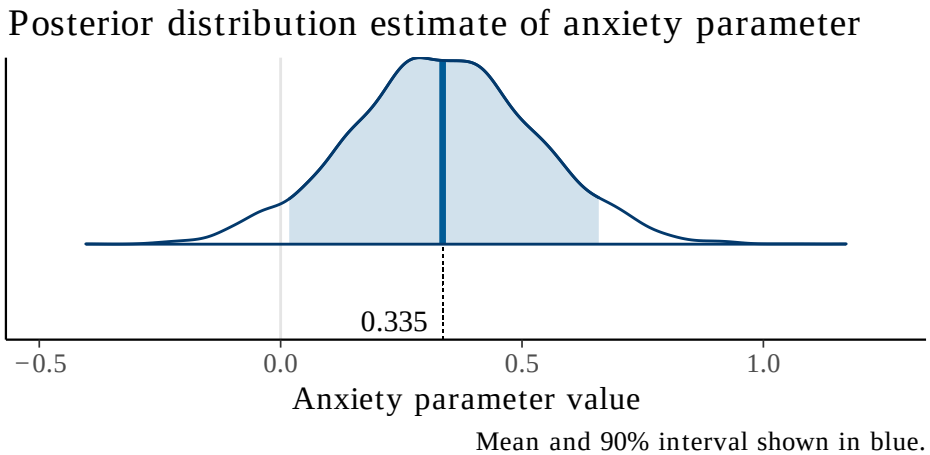
Figure 3. *Treatment* is the anxiety video manipulation (compared to the neutral condition), *Mediator* is skin conductance reactivity when answering immigration questions, and *Outcome* is composite variable of immigration preferences. Horizontal lines represent 90% confidence intervals around the mean estimates.

Note that ACME stands for *average causal mediation effect* and that higher coefficients correspond to less favorable views on immigration.

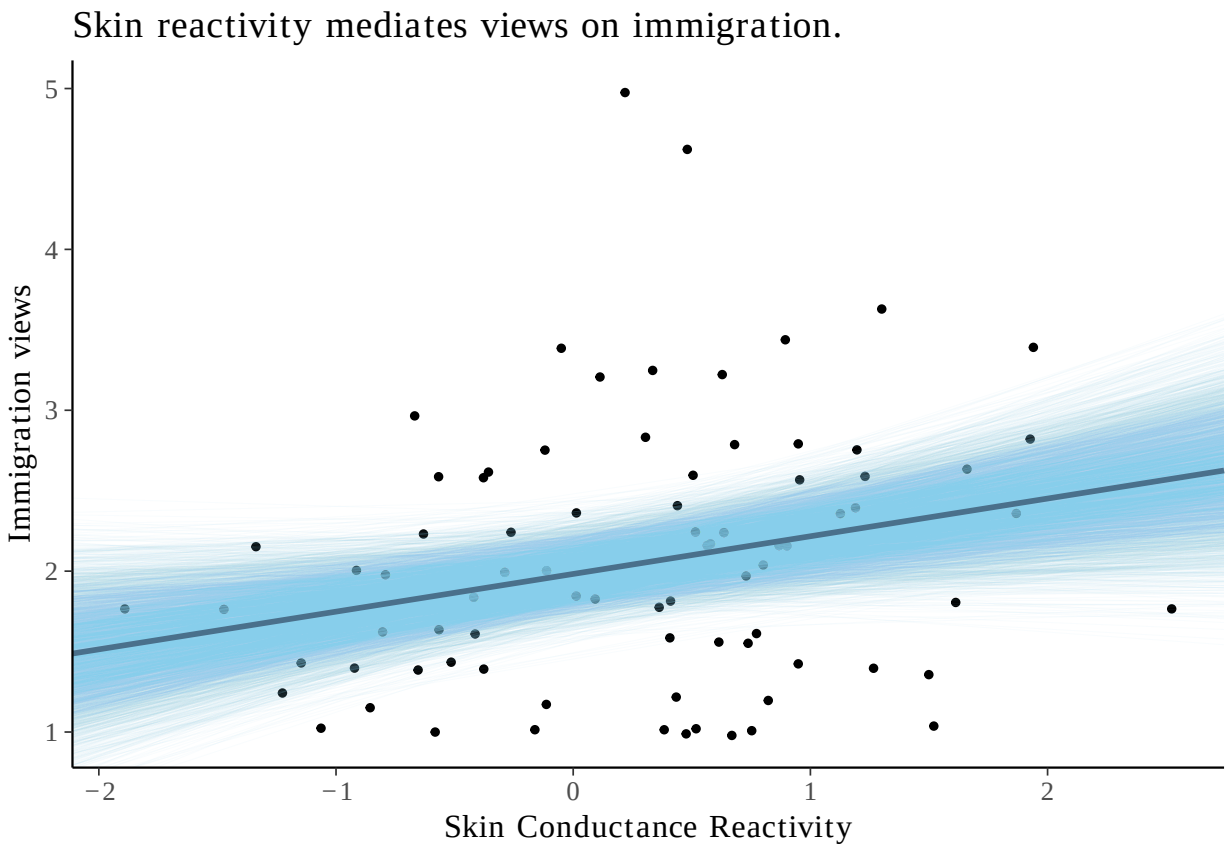
Extension

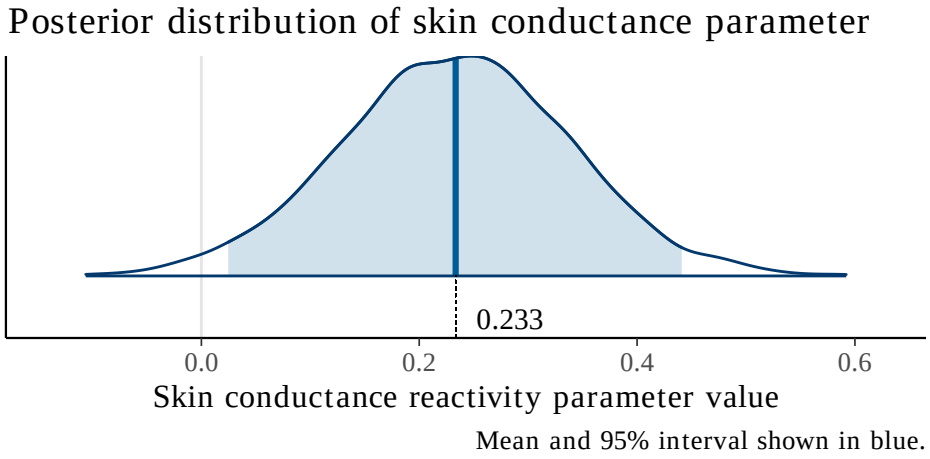
In this extension I attempt to confirm the main results of the paper using Bayesian linear models. I generally follow the guidelines provided in Gabry and Goodrich (2018) and add additional visualizations from the `bayesplot` package. The models here do reach the same general conclusions as those from the paper: the *Anxiety* treatment parameter is positive and significant in the first-stage model within a 90% confidence interval, and the skin conductance reactivity parameter is positive and significant in the second-stage model within a 95% confidence interval. This lends credence to the authors' argument that physiological reactivity mediates the relationship between induced anxiety and attitudes toward immigrants.





Note that the *Anxiety* parameter value is positive and significant within a 90% confidence interval.





Note that the skin conductance reactivity parameter value is positive and significant within a 95% confidence interval. This Bayesian model had the same controls as that of the original, namely anxiety manipulation and story condition.

References

Gabry, Jonah, and Ben Goodrich. 2018. "Estimating Generalized Linear Models for Continuous Data with Rstanarm." *The Comprehensive R Archive Network*. https://cran.r-project.org/web/packages/rstanarm/vignettes/continuous.html.

Renshon, Jonathan, Jooa Julia Lee, and Dustin Tingley. 2015. "Physiological Arousal and Political Beliefs." *Political Psychology* 36 (5): 569–85. doi:10.1111/pops.12173.

Renshon, Jonathan, Julia Lee, and Dustin Tingley. 2014. "Replication data for: 'Physiological Arousal and Political Beliefs'." Harvard Dataverse. doi:10.7910/DVN/24318.