

# Midterm 1

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## **Abstract:**

Below is a replication of the tables and figures from J. Renshon, J. Lee, and D. Tingley's "Physiological Arousal and Political Beliefs" (Renshon, Lee, and Tingley 2014a). This replication draws from code taken from the Dataverse (Renshon, Lee, and Tingley 2014b) on the paper, but builds on it. The intention of this replication is to provide a better understanding and present the data and tables in a more appealing way. In addition to this, the code was remade using R rather than the original mixed use of Stata and R but also refines the existing code base for the existing paper. In the paper, there are three figures and one table. Figures 2 and 3 and Table 1 can be replicated completely, although I chose to make some modifications to their appearance and presentation. Figure 1 cannot be reproduced using R or any type of statistical or quantitative coding as it is diagram of the experiment's procedures. In the experiment, Renshon, Lee, and Tingley (2014b) finds that physiological reactivity mediated the relationship between anxiety and political attitudes through treatment conditions. I also extended the modelling done in the paper by considering ideology as a factor in the immigration preferences, examining mediation effects, and also by performing Bayesian modelling rather than the simple linear modelling done in the paper. Even when including ideology, the result remained that physiological reactivity played a role in the mediation of effects. Additionally, ideology played a slight role in the determination of immigration preferences, but not of significance.

## Replications:

Figure 2

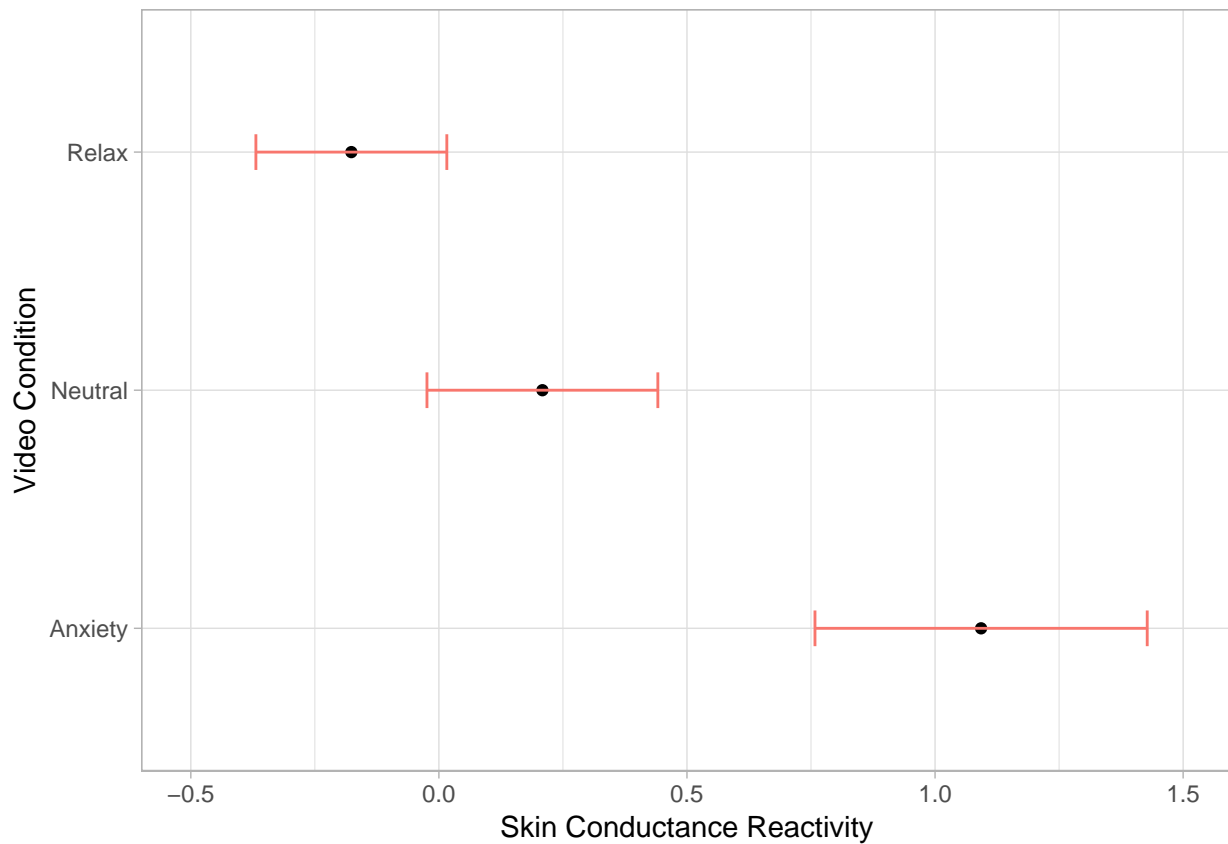


Figure 2: Means of skin-conductance reactivity by video condition. 95% confidence intervals are in red.

This plot shows mean skin conductivity when the subject was undergoing the video treatment. The confidence interval shows the range of skin conductivity for those of the different video treatments and see that an increase in anxiety is associated with an increase in skin conductivity.

**Table 1**

Table 1:

	SC Reactivity	Immigration Preference
	(1)	(2)
Anxiety Manipulation	0.339* (0.195)	-0.277 (0.178)
Story Condition		0.386** (0.176)
SC Reactivity while answering questions		0.232** (0.100)
Constant	0.115 (0.137)	1.983*** (0.138)
N	81	81
R <sup>2</sup>	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 includes only Neutral & Anxiety conditions (Relax condition is excluded). Standard errors in brackets.

Figure 3

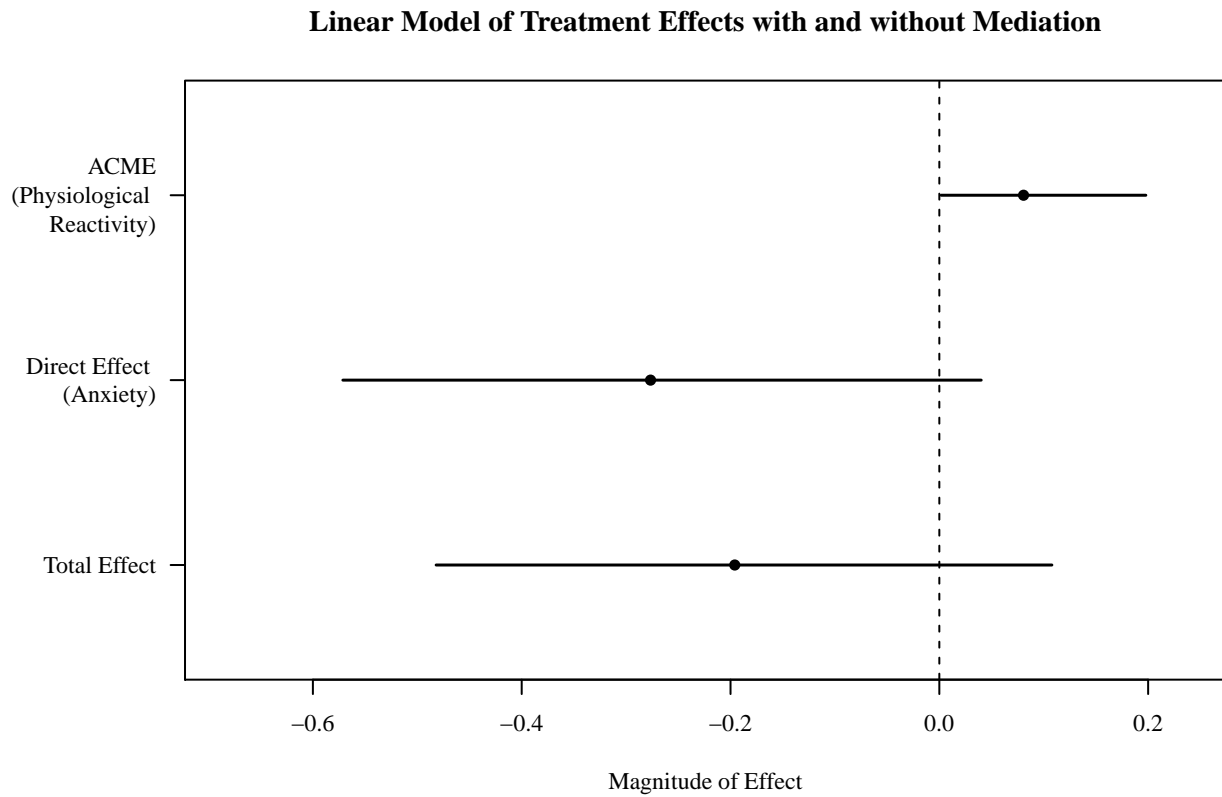
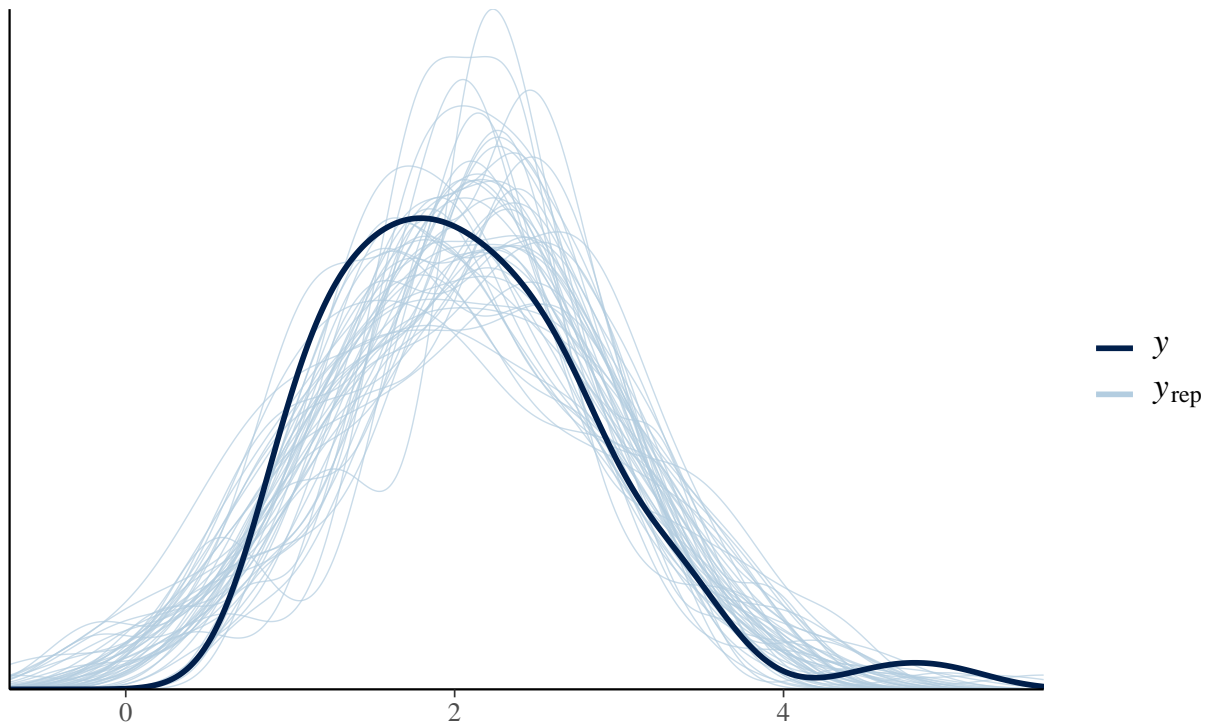


Figure 3. Causal mediation plot. Treatment is anxiety video manipulation (compared to neutral condition), Mediator is skin conductance reactivity when answering immigration questions, Outcome is composite variable of immigration preferences. Horizontal lines represent 90% confidence intervals for estimates.

This plot is used to show that skin conductivity served as a mediator between anxiety and immigration preferences in treatment conditions. The direct effects are also quantified under “Immigration Preferences” in Table 1.

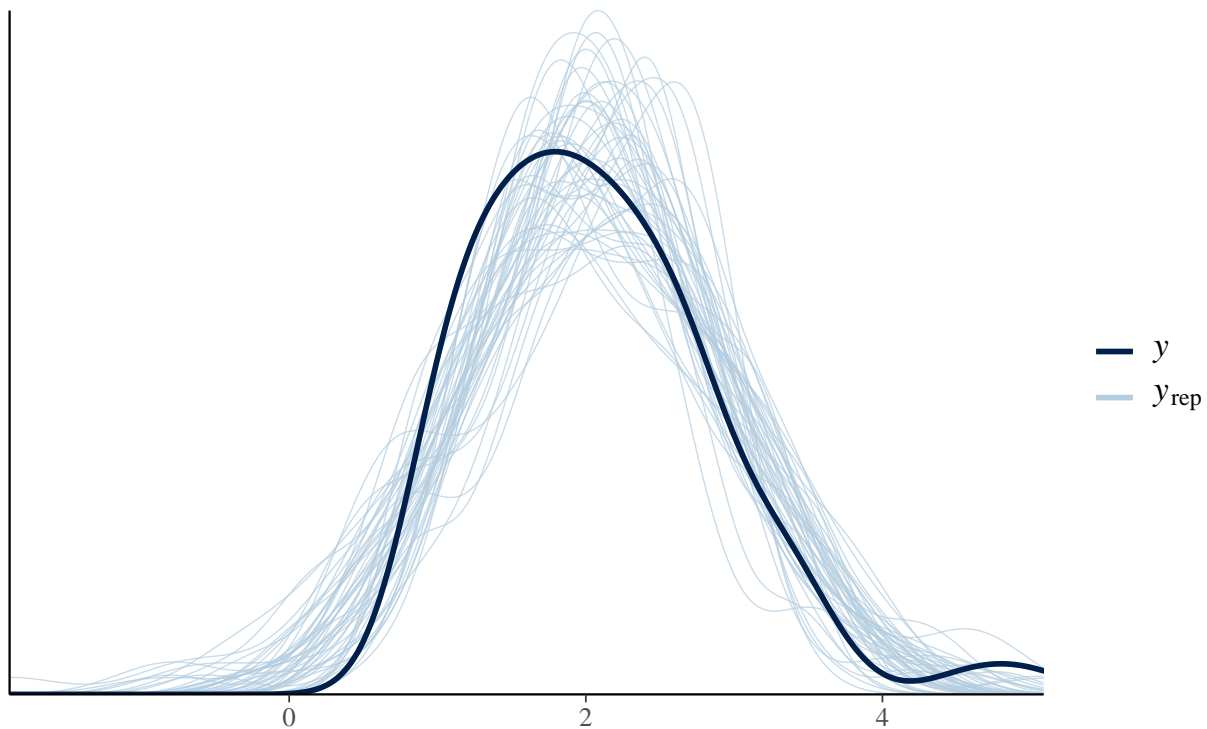
## Extension: Bayesian Models and Comparisons

### Immigration Preferences Distribution: Actual vs. Bayesian Linear Model Predictions



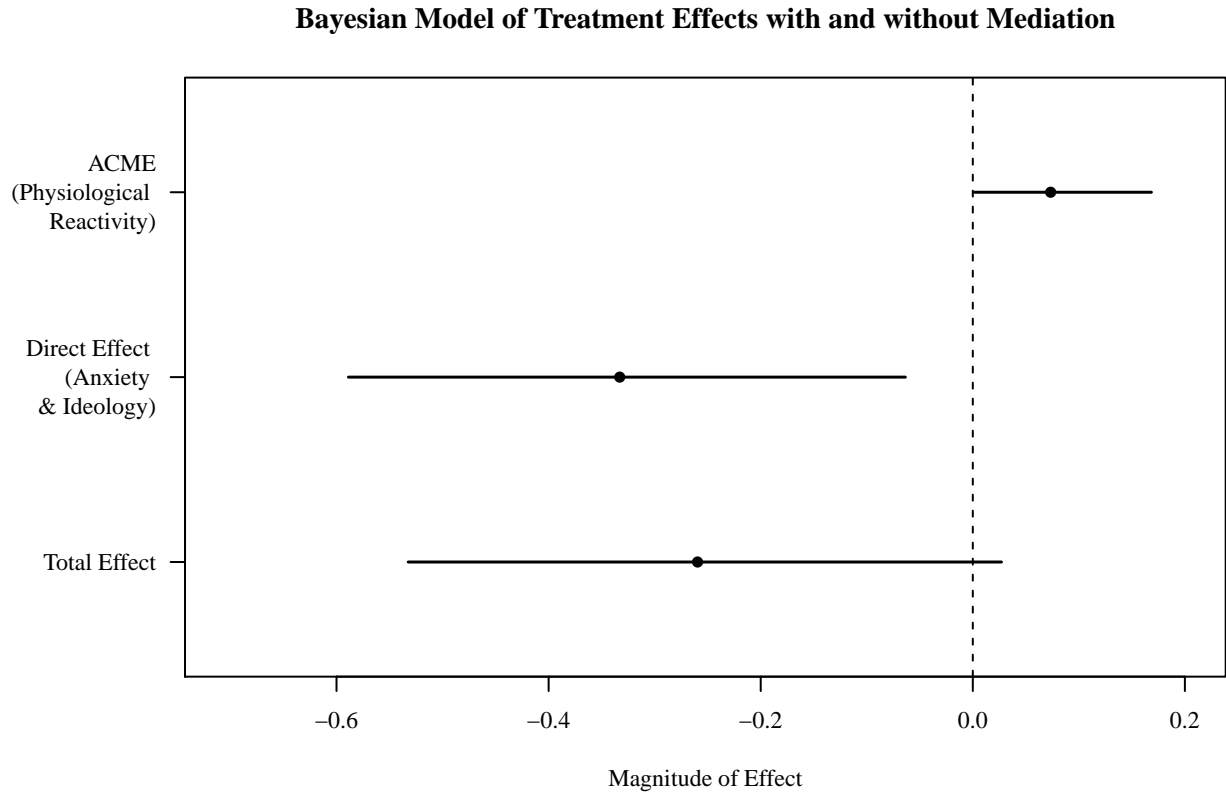
The Bayesian doesn't perform as well as it should because the bounds of immigration preference weren't set to be between 1–5 for the model.

### Immigration Preferences Distribution: Actual vs. Bayesian (Ideology Inclusive) Linear Model Predictions



This Bayesian has a larger tailing on the left, which is undesirable but the model fits well.

## Mediation Effects on Bayesian Model, Inclusive of Ideology



Extension of Figure 3: This is a causal mediation plot for the Bayesian model of immigration preferences inclusive of ideological effects. The horizontal lines represent 90% confidence intervals for estimates. We see that the Direct Effects are lower as a result of the introduction of ideology as a factor on immigration preferences, but that the ACME (average causal mediation effect) is largely unchanged). This plot still shows that physiological reactivity mediated the relationship between anxiety and political attitudes.

## Model Predictivity: With and Without Ideology

Stats	Magnitude
Model Fit	2.30
Standard Error	2.93

Since the model fit is positive when doing a leave-one-out comparison on the original paper's model to a new model where ideology is considered in immigration preferences, this means that the model which considers ideology is a better predictor of immigration preferences than the original paper.

## References

- Renshon, Jonathan, Jooa Julia Lee, and Dustin Tingley. 2014a. “Physiological Arousal and Political Beliefs.” *Political Psychology* 36 (5): 569–85. <https://doi.org/10.1111/pops.12173>.
- Renshon, Jonathan, Julia Lee, and Dustin Tingley. 2014b. “Replication data for: ‘Physiological Arousal and Political Beliefs’” Harvard Dataverse. <https://doi.org/10.7910/DVN/24318>.