Pre-Registration Document

Project working title: Right Wing Authoritarianism, Rule Following, and Social Information Use

Date: 28th September 2020

A. Hypotheses

Hypothesis 1: Right Wing Authoritarianism will positively predict the probability of placing a ball in the "rule following" bucket in the Rule Following Task.

Hypothesis 2: Right Wing Authoritarianism will positively predict the propensity to use social information in the BEAST (Berlin Estimate AdjuStment Task).

B. Methods

Variables measured

The following table lists the variables from the New Zealand Attitudes and Values Study (NZAVS). A full data dictionary can be found here: https://www.psych.auckland.ac.nz/en/about/our-research/research-groups/new-zealand-attitudes-and-values-study/nzavs-tech-docs.html.

Variable	Variable name	Item text	Range
RWA1	Right Wing Authoritarianism	It is always better to trust the judgment of the proper authorities in government and religion than to listen to the noisy rabble-rousers in our society who are trying to create doubt in people's minds.	1-7
RWA2		It would be best for everyone if the proper authorities censored magazines so that people could not get their hands on trashy and disgusting material.	1-7
RWA3		Our country will be destroyed some day if we do not smash the perversions eating away at our moral fibre and traditional beliefs.	1-7
RWA4		People should pay less attention to The Bible and other old traditional forms of religious guidance, and instead develop their own personal standards of what is moral and immoral.	1-7
RWA5		Atheists and others who have rebelled against established religions are no doubt every bit as good and virtuous as those who attend church regularly.	1-7
RWA6		Some of the best people in our country are those who are challenging our government, criticizing religion, and ignoring the "normal way" things are supposed to be done.	1-7
SDO1	Social Dominance Orientation	It is OK if some groups have more of a chance in life than others.	1-7
SDO2		Inferior groups should stay in their place.	1-7
SDO3		To get ahead in life, it is sometimes okay to step on other groups.	1-7

SDO4		We should have increased social equality.	1-7
SDO5		It would be good if groups could be equal.	1-7
SDO6		We should do what we can to equalise conditions for different groups.	1-7
AGE	Age	What is your date of birth?	NA
GEN	Gender	What is your gender?	NA
ETHCAT	Ethnicity	Which ethnic group do you belong to? (NZ census question)	NA
NZREG	Education	*Ordinal-rank measure of level of attainment*	0-10
NZSEI	Socio-economic status	*Ordinal-rank measure of socio-economic status based on occupational categories*	10-90
NZDEP	Local deprivation	*Ordinal-rank deprivation score for each meshblock in New Zealand*	1-10

Alongside the Dictator Game, Trust Game, Public Goods Game, Ultimatum Game, Third-Party Punishment Game, and Second-Party Punishment Game, we will also measure the following behavioural variables.

Variable	**Variable name**	**Operationalised**	**Range**
RF	Rule Following Task	Ball placed in "rule following" bucket? (for 30 balls in total)	Binary (yes/no)
BEAST	Berlin Estimate AdjuStment Task (BEAST)	Average adjustment in estimate in response to social information (for 5 animal types in total)	0-1

Planned sample

Participants will be sampled from the 1007 participants from the New Zealand Attitudes and Values Study who completed the first wave of economic game data collection and stated that they would like to be invited to participate in additional similar online studies. All 1007 participants will be contacted. We expect a retention rate of around 80% for the second wave.

Exclusion criteria

As with the first wave, a participant's data will be excluded if the participant takes less than 5 minutes or more than 50 minutes to complete all the games. Also, for Analysis 2 specifically, we will exclude participants if they run out of time in the BEAST (15 second time limit for first estimate, 45 second time limit for second estimate).

Procedure

In the second wave of data collection, we replicate the pre-registered procedure from the first wave (https://osf.io/swkqc/). Participants play a series of one-shot economic games in oTree (Chen, Schonger, & Wickens, 2016), using the strategy method and presented in a random order with real-time post-hoc matching. However, we replace the two Stag Hunt games from Wave 1 (Stag Hunt Game and Stag Hunt Game with Punishment) with two different tasks. The first task is a rule following task (adapted from Kimbrough & Vostroknutov, 2018) which asks participants to click to place balls into one of two buckets, with each ball placement earning money. They can either follow an exogenously imposed rule (*e.g.* "place the balls in Bucket A") or break this rule for greater profit. The second task is the Berlin Estimate AdjuStment Task (BEAST; adapted from Molleman, Kurvers &

van den Bos, 2019) which asks participants to estimate the number of animals in a brief presentation of an image, and then revise their estimate based on social information from another previous participant.

C. Analysis Plan

Analysis 1

To test Hypothesis 1, we will fit a **Bayesian multilevel logistic regression model** with ball placement in each round of the Rule Following task as the outcome variable (0 = did not follow rule, 1 = followed rule). In a null model, we will include a random intercept and random slope for round number (1-30) grouped by participant. Then we will add mean RWA as a fixed-effect predictor. We will find support for Hypothesis 1 if (1) adding RWA to the model improves model fit as measured by leave-one-out cross-validation, and (2) the 95% credible interval for the RWA parameter is above zero.

In addition, we will add mean SDO, age, gender, ethnicity, education, socio-economic status, and local deprivation as covariates, individually and together in a full model. We expect the relationship between RWA and rule following to persist controlling for these covariates.

Analysis 2

To test Hypothesis 2, we will fit a **Bayesian multilevel beta regression model** with average estimate adjustment in BEAST (varying *S* between 0 and 1, where 0 = keeping first estimate and 1 = adjusting entirely to the other participant's estimate) as the outcome variable[1]. In a null model, we will include random intercepts for participant and animal type. Then we will add mean RWA as a fixed-effect predictor. We will find support for Hypothesis 2 if (1) adding RWA to the model improves model fit as measured by leave-one-out cross-validation, and (2) the 95% credible interval for the RWA parameter is above zero.

In addition, we will add mean SDO, age, gender, ethnicity, education, socio-economic status, and local deprivation as covariates, individually and together in a full model. We expect the relationship between RWA and social information use to persist controlling for these covariates.

[1] In keeping with previous analyses of BEAST data (Molleman *et al.*, 2019), we drop cases where individuals adjusted away or beyond the social information (*i.e.*, $S < 0$ or $S > 1$). We do not foresee this being an issue, as cases like these made up only a small percentage of the dataset (4%) in previous work.

References

Chen, D. L., Schonger, M., & Wickens, C. (2016). oTree-An open-source platform for laboratory, online, and field experiments. *Journal of Behavioral and Experimental Finance*, *9*, 88–97.

Kimbrough, E. O., & Vostroknutov, A. (2018). A portable method of eliciting respect for social norms. *Economics Letters*, *168*, 147-150.

Molleman, L., Kurvers, R. H., & van den Bos, W. (2019). Unleashing the BEAST: a brief measure of human social information use. *Evolution and Human Behavior*, *40*(5), 492-499.