Preregistration

Explaining Atheism: Pilot 1 Preregistration

Connair J. S. Russell[1], Jon Lanman[1], Aiyana Willard[2], Adam Baimel[3]

[1] Queen's University Belfast

[2] Brunel University London

[3] Oxford Brookes University

INSERT DATE

Study Information

Title	Explaining Atheism: Pilot 1 Preregistration

Description	The present work is part of the broader Explaining Atheism project, which looks to examine popular and scientific causes of belief/non-belief and how these vary across cultures.
	Across 3 stages we will examine variables which have been argued in popular and scientific discourse to cause belief and non-belief. In this initial pilot we will look at the largest number of variables in order to test some of the clearest hypotheses and to run explanatory tests to exclude possible variables for the later stages of the project which will have larger samples and a greater proportion of confirmatory tests.
	Additional preregistration for this initial pilot, and follow on pilots can be found on our pages on the Open Science Framework, our Figshare, and on my personal GitHub.

This pre-registration is for analysis of our first pilot data, with analyses looking to include or exclude variables for later stages. Here we look at the most popular explanations of belief/non-belief and whether they predict a number of different measures related to belief/non-belief

---

Hypotheses

The current pre-registration is for exploratory analyses, as such no explicit directional hypotheses are tested. We will instead be testing the hypotheses of our explanatory variables having an effect on one or more outcome variables.

Specifically, we will look at whether the following clusters of explanatory variables (see "Variables" below) have an effect on the following outcome variables:

Morals/ Values:

Belief in God; Agnosticism; Religious Identity; Religious Attendance; Moral Vitalism

Cognitive Styles:

Belief in God; Agnosticism; Religious Identity; Religious Attendance; Religious Tokens; Karma

Socialisation

Cognitive Biases

Motivational

Design Plan

Study type   **Observational (Survey) Study**

Blinding   No blinding is involved in this study.

Study design   This study uses a survey design.

This pilot will run 5 separate surveys, one for each of the explanatory variable clusters, in the UK, Japan and Brazil. Survey 5 will also be run in Denmark. The results in 16 independent survey samples.

Randomization	INSERT RANDOMISATION INFO

Sampling Plan	We will collect representative samples for each survey for each nation. This will be done by an independent survey company, and the samples will be representative for the national population by Age, Sex and Geographic Region.

Existing data	**Registration prior to creation of data**.
	As of the date of submission of this preregistration, the data have not yet been collected, created, or analysed.

Data collection procedures	Participants are recruited by the independent survey company, Savanta Comres, from their pool of participants. Participants will be paid a local rate for their participation, and will be selected to meet representativeness requirements outlined above.
	Exclusion criteria

Sample size	The sample size used is 500 per survey per nation.
	Brazil = 2500
	UK = 2500
	Japan = 2500
	Denmark = 500

Sample size rationale	Samples are the maximally viable sample for the financial means of the project.

Variables

Please find below a list of each variable measured in the study. A background for each of these, along with their operationalisations, subscales, and scripts to score these can be found in the codebook accompanying the pre-registration.

Explanatory Variables

Morals/ Values

- Individualism and Collectivism
- Rebelliousness
- Individual Choice Norms

Cognitive Style

- Tolerance of Ambiguity
- Thinking Style
- Non-Verbal Reasoning
- Moralisation of Rationality
- Importance of Rationality

Socialisation

- CREDs
- CRUDs
- Non-theistic Socialisation
- Normativity of Religion
- Religious Emphasis
- Familial Dysfunction

Motivational

- Social Desirability

- Existential Security
- Need for Structure
- Death Anxiety
- Social Network Size
- Need for Meaning
- Disgust Sensitivity

Cognitive Bias

- Anthropomorphism
- Mentalizing
- Dualism
- Pattern Perception
- Promiscuous Teleology
- Schizotypy
- Vividness of Mental Imagery
- Dissociative Absorption

Outcome Variables

ISSP

- Belief in God (categorical)

Religious Identity

- Religious Membership
  - If so which

Religious Practice

- Service attendance
- Prayer frequency
- Religious objects

Supernatural Belief

- Life After Death
- Astrology Belief
- Mystical Powers Belief
- Universal Forces Belief
- Karmic Belief
- Supernatural Beings Belief
- Afterlife Belief
- Evil Eye Belief
- Luck Belief

General Belief

- Belief in God (continuous)
- Confidence in Belief
- Anti Religiosity
- Religious Apatheism
- Agnosticism
- Possibility of Knowing

Indices   Code and scoring methods are included for each variable in the accompanying codebook.

Analysis Plan

Exploratory Analysis Plan

Statistical models   To examine the possible relationships between our explanatory and our outcome variables we will run bayesian multiple regression models using the 'brms' package.

For binary outcomes we will use logistic regression. For example, the following logistic model of the binary "Religious Identification" outcome variable and Morals/Values explanatory variables might be specified roughly as follows:

```
library("brms")


exampleLogisticModel<-
  brm(formula = religiousIdentification ~ individualism +
                                          rebelliousness +
                                          choiceNorms,
      prior = prior,
      data = data,
      family = bernoulli(link = "logit"),
      iter = 10000,
      seed = 2023)
```

For ordinal outcomes (likert responses) we will use logistic regression. For example, the following logistic model of the binary "Religious Identification" outcome variable and Morals/Values explanatory variables might be specified roughly as follows:

Priors

We will set the following uninformative priors for our outcome variables:

Transformations	Enter your response here.
Inference criteria	
Data exclusion	Enter your response here.
Missing data	Enter your response here.
Exploratory analyses (optional)	Enter your response here.

Other

Other (Optional)   Enter your response here.

References