Faith, Affect, and Cognition: The Palliative Effects of Belief in God

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ABSTRACT

While the evolutionary origins of religiosity are likely shrouded in prehistory, many hypotheses have been generated that suggest that it is either (1) a mechanism by which growing human populations formalized cooperation to protect the in-group from external threat or (2) a propensity to engage in an intuitive versus a rational cognitive style. In this study both of these "causes" were compared against each other to predict belief in God. The results reflect that both stronger in-group preferences, evidenced by higher Fear of Social Deviance and higher Binding Morality scores, and lower scores on Rational Cognitive Style are correlated with belief in god, though in-group preferences accounted for the majority of the variance.

KEYWORDS

Individual differences, affect, cognition, faith, evolutionary psychology

Although Belief in God (BiG) is not necessarily the same as religiosity, it is very closely associated, especially in the Abrahamic religions, with which the majority of participants in this study were aligned. Both belief in an all-powerful and protective god and religious participation have been associated with individual differences in propensity to engage in the evolutionarily older intuitive thinking style (Pennycook, Cheyne, Seli, Koehler, & Fugelsang, 2012; Shenhav, Rand, & Green, 2012; Watson, Morris, Hood, Miller, & Waddell, 1999) as well as with stronger in-group prosociality (Galen, Sharp, & McNulty, 2015; Johnson & Cohen, 2016; Purzycki et al., 2016) thought to have resulted from the need of larger and larger human population densities to react to both internal and external threats to social cohesion.

The need for increased in-group prosociality has largely followed from very real social and environmental threats. That is, when an in-group is subject to physical attack from human, or non-human, out-groups, religiosity and BiG tends to

increase (Harris, 2016). The same is true in cases of environmental threats such as floods, famines, hurricanes, tornadoes, volcanoes, and other ironically named "acts of god" (Dove, 2008; Jang & Wang, 2009).

However, there are individual differences in the perception of external social and environmental threats. Specifically, a single, often times ambiguous, situation can be interpreted as safe or dangerous by two different people, largely depending on the reactivity of their autonomic nervous systems (Barrett & Simons, 2015; Critchley & Harrison, 2013; Nardelli et al., 2015). It should follow that when one segment of a larger population is more sensitive to threat than another segment of that same population living in and experiencing the same environmental stimuli, the cause of the different appraisal should be individual differences in threat perception. Further, the more sensitive segment of the population should present a stronger in-group preference and stronger BiG (Harris, 2016).

In this study an analogous ethnic, cultural, and economic population (so chosen in an attempt to control for variation in environmental threat exposure) was asked to indicate their confidence in the existence of God, their fear of the environment, their preferences for in-group vs out-group moral inclusiveness, and to answer questions on a cognitive scale tapping preferences for rational vs experiential thinking styles.

It was predicted that higher fear of environmental threats, greater in-group preferences, and a weaker propensity to engage in rational thinking would account for differences in BiG among a population facing very similar (and low level) social and environmental threats.

METHOD AND MATERIALS

This study was conducted in a small northern New England (USA) city among introduction to psychology students in a mid-sized public college. Participants filled out a study packet consisting of a one-item "Belief in God" measure, a measure of moral sensitivity, a measure of fear sensitivity, and a measure of preferences for rational vs. experiential thinking style. Multiple linear regression was employed to help determine which of these variables could be used to predict the level of belief in god. All participants completed the packets and no cases were deleted from the analysis.

Belief in God

The "Dawkins 7", so called as it was obtained from The God Delusion (Dawkins, 2006) (see appendix A), is a single item seven point Likert scale Belief in God (BiG) item. Responses on the D7 were reverse-scored, with a higher score reflecting a lower belief in god (the lettered responses a. through g. correspond with scores of 1 through 7).

Moral Sensitivity

Moral sensitivity was measured with the Moral Foundations Questionnaire (MFQ: Haidt & Graham, 2007), a 40 item survey which taps subjects' likelihood of extending, or restricting moral sensitivity. The MFQ does not ask if any particular act is moral or not, rather, it asks if the subject believes that judging an act as (im)moral should depend on the relationship to the subject that the act might involve. For example, is something immoral if your friend does it versus if a stranger does it? The MFQ has five factors: harm to others (α = .62), fairness to others (α = .67), in-group solidarity (α = .59), preference for authority (α = .39), and purity/sanctity (α = .70). Because purity/sanctity items mention god a number of times, this factor was excluded. The remaining four factors were combined into two subscales: Individualizing Morality made up of harm and fairness, and Binding Morality made up of in-group and authority. Individualizing moral sensitivity extends to people outside of your group whereas binding morality is restricted to members of your in-group. Binding morality is thought to be more evolutionary ancient to humans and other group living species in that passing on genes should be more successful by trusting and helping kin, rather than trusting or sharing with non kin, especially in a dangerous environment (Lahti, 2009). Because individualizing and binding moral sensitives are orthogonal measures, a third variable was computed: individualizing minus binding scores, which gives a more accurate measure of in-group vs outgroup preferences.

Fear

All subjects completed the 108-item Fear Perception Index (FPI: Eigenberger, 1998). The FPI has three subscales: fear of being alone (α = .95), basic natural aversions (α = .92), and fear of deviant people (α = .93). While fear of being alone and basic natural aversions are endemic to the human species, fear of deviant people is specifically a threat from an out group member, or, from an in-group member who may threaten the stability of the group. It was thus predicted that fear of deviant people should account for more of the variance in moral sensitivity and in BiG.

Thinking Styles

Individual differences in thinking styles were measured with the Rational Experiential Inventory (REI: Pacini & Epstein, 1999). The REI is made up of two orthogonal measures, preference for rational thinking (α = .90) and preference for experiential thinking (α = .87). Experiential thinking is thought to be evolutionarily older in humans than rational thinking, and is based on feelings and personal experiences (Lindeman, 1988). While most of one's day to day problem solving is carried out with experiential thinking, it is prone to a number of cognitive biases and superstitions. Lindeman (1988) discusses how rational thinking is thought to be more recently evolved, more effortful in carrying out, and only used when the cost of

being wrong outweighs the effort needed to carry out the process. Previous research has found that experiential thinking is strongly correlated with BiG (Kenworthy, 2003; Pennycook et al., 2012).

PROCEDURE

Participation in this study was purely voluntary and confidential. Subjects in introduction to psychology classes were offered extra course credit for participating, but, were also offered an alternative if they did not want to participate. All of the items in this study were put together in a single package and handed out to subjects at the end of a regularly scheduled class by someone other than the professor of that class. The study was not timed, but overall, subjects took approximately 20 minutes to complete it. Subjects were debriefed in class at a later time.

RESULTS

Step-wise multiple regression was used to assess the relationship between the criterion variable (Belief in God) and eight predictor variables, among which fear, moral sensitivity, and cognitive style were predicted to be significantly related to BiG. The prediction model contained two of the eight predictors; Individualizing minus Binding (IminusB) moral sensitivity, and the deviance subscale of the FPI, and was reached in two steps with no variables removed. The two variables related to cognitive style were among four other excluded variables (Individualizing morality, Binding morality, Fear of alienation, and Fear of basic natural aversions). The model was statistically significant, $F(1, 164) = 28.935$, $p < .01$, and accounted for approximately 26% of the variance of Belief in God ($R^2 = .261$, $R^2_{adj} = .252$). Table 1 shows the correlations of the variables that made the regression model. Belief in God was primarily predicted by lower levels of IminusB and higher levels of fear of deviance (Table 2).

Table 1: Regression correlation table.

	1	2	3	4	5	6	7	8	9
1. BiG		0.374***	-0.088	0.351***	-0.361***	0.466***	-0.337***	-0.235**	-0.41***
2. Rational Cognitive Style			-0.339***	0.592***	-0.471***	0.709***	-0.292***	-0.453***	-0.371***
3. Experiential Cognitive Style				-0.294***	0.259***	-0.366***	0.296***	0.343***	0.267***
4. Individualizing morality					-0.14*	0.838***	-0.248**	-0.236**	-0.354***
5. Binding morality						-0.657***	0.343***	0.341***	0.398***
6. Individualizing minus Binding morality							-0.378***	-0.367***	-0.489***
7. Fear of Alienation								0.605***	0.713***
8. Fear of Basic Natural Aversions									0.659***
9. Fear of Social Deviance									

* < .05   ** < .01   *** < .001

Table 2: Regression model

Beta Value, Significance level, t Value, and Standard Error of the Final
Predictor Variables

Variable	Standarized Beta	Significance	t value	Standard error
IminusB	0.349	0.001	4.540	0.007
deviance	-0.240	0.002	-3.110	0.010

DISCUSSION

The history of morality and religiousness is strongly connected to the presence, or absence, of external threats. While external threats can, hypothetically, produce greater in-group cohesion in order to protect the members of the group, a larger group can also be more susceptible to both internal and external threats. Baumard and Boyer (2013) found strong evidence that the first significant demonstration of so-called "golden rule morality" developed in the first regions of the world to produce surplus food stores, thus reducing the existential anxiety of famine. They suggested that cultures which are able to reduce objective threats have the luxury of developing a more open and fair moral system, and tend to rely less on a punishing god. However, within any particular culture, some individuals perceive the same environmental stimuli as more dangerous than others. It was thus predicted that, controlling for environmental conditions by using an analogous subject pool living in the same region, differences in belief in god could be attributed to individual differences in fear perception.

In this study, individual differences in fear of external threats was strongly correlated with both the reduction of out-group moral sympathies and a stronger belief in god, confirming two of our three hypotheses. The third, that preference for a rational cognitive style would predict BiG, did not make the regression model, but was found to be significantly, positively correlated with reduced belief in god. While most studies look at religiousness and belief in god as either a lower level of rational cognitive processing or a reaction to objectively dangerous world, this study found that individual differences in perception of external threat accounted for the greater variance in belief in god. Future studies should include a comparison of more diverse populations to test the generalizability of these results. Since the population sampled was similar in age, economic, and environmental factors, a study analyzing subjects in different US states could be conducted to show how geographic variability might influence levels of belief. Future research should also observe the interaction of these variables on a global scale. Examinations of countries with different political and environmental climates, as well as different major belief systems, than the USA would give a more comprehensive view of the influence that

fear, in-group preference, and cognitive style have on religiosity and belief in (a) god.

REFERENCES

Barrett, L. F., & Simons, W. K. (2015). Interoceptive predictions in the brain. *Nature Reviews: Neuroscience, 16*(7), 419–429.

Baumard, N., & Boyer, P. (2013). Explaining moral religions. *Trends in Cognitive Sciences, 17*(6), 272-280.

Critchley, H. D., & Harrison, N. A. (2013). Visceral influences on brain and behavior. *Neuron, 77*(4), 624-638.

Dawkins, R. (2006). *The God delusion.* Boston: Houghton Mifflin.

Dove, M. R. (2008). Perception of volcanic eruption as agent of change on Merapi volcano, Central Java. *Journal of Vulcanology and Geothermal Research, 172*, 329-337.

Eigenberger, M. E. (1998). Fear as a correlate of authoritarianism. *Psychological Reports, 83*, 1395-1409.

Galen, L. W., Sharp, M., & McNulty, A. (2015). Nonreligious group factors versus religious belief in the prediction of prosociality. *Social Indicators Research, 122*(2), 411-432.

Haidt, J., & Graham, J. (2007). When morality opposes justice: Conservatives have moral intuitions that liberals may not recognize. *Social Justice Research, 20*(1), 98-116.

Harris, R. A. (2016). Can states exist without gods? *The International Journal of Religion and Spirituality in Society, 6*(3), 29-40.

Jang, L., & Wang, J. (2009). Disaster resilience in a Hakka community in Taiwan. *Journal of Pacific Rim Psychology, 3*(2), 55-65.

Johnson, K. A., & Cohen, A. B. (2016). Authoritarian and benevolent god representations and the two sides of prosociality. *Behavioral and Brain Sciences, 39,* 32.

Kenworthy, J. (2003). Explaining the belief in God for self, in-group, and out-group targets. *Journal for the Scientific Study of Religion 42(1),* 137-146.

Lahti, D. C. (2009). The correlated history of social organization, morality, and religion. *The Biological Evolution of Religious Mind and Behavior, The Frontiers Collection,* 67-88.

Lindeman, M. (1988). Motivation, cognition and pseudoscience. *Scandinavian Journal of Psychology, 39,* 257-265.

Nardelli, M., Valenza, G., Cristea, I. A., Gentili, C., Cotet, C., David, D., Lanata, A., & Scilingo, E. P. (2015). Characterizing psychological dimensions in non-pathological subjects through autonomic nervous system dynamics. *Frontiers in Computational Neuroscience, 9*, 1-12

Pacini, R., & Epstein, S. (1999). The relation of rational and experiential information processing styles to personality, basic beliefs, and the ratio-bias phenomenon. *Journal of Personality and Social Psychology, 76*(6), 972-987

Pennycook, G., Cheyne, J. A., Seli, P., Koehler, D. J., & Fugelsang, J. A. (2012). Analytic cognitive style predicts religious and paranormal belief. *Cognition, 123*, 335-346.

Purzycki, B. G., Apicella, C., Atkinson, Q. D., Cohen, E., McNamara, R. A., Willard, A. K., Zygalatas, D., Norenzayan, A., & Henrich, J. (2016). Moralistic gods, supernatural punishment, and the expansion of human sociality. *Nature, 530*, 327-330.

Shenhav, A., Rand, D. G., & Green, J. D. (2012). Divine intuition: Cognitive style influences belief in god. *Journal of Experimental Psychology: General, 141*(3), 423-428.

Watson, P. J., Morris, R. J., Hood, R. W., Miller, L., & Waddell, M. G. (1999). Religion and the experiential system: Relationships of constructive thinking with religious orientation. *The International Journal for the Psychology of Religion, 9*(3), 195-207.

APPENDIX A

The Belief in God Scale (Dawkins 7)

The following seven statements are meant to explore belief or faith that God exists. Of course there are no right or wrong answers for this section, just your own opinion.

Please write the letter of your choice on the separate response sheet statement that most closely resembles your position on the existence of God.

a. "I do not *believe* God exists, I know He does."

b. "I cannot know for certain, but I strongly believe in God and live my life on the assumption that He is there."

c. "I am uncertain, but I am inclined to believe in God."

d. "God's existence and non-existence are exactly equiprobable."

e. "I don't know whether God exists but I'm inclined to be skeptical."

f. "I cannot know for certain but I think God's existence is very improbable, and I live my life on the assumption that he is not there."

g. "I know there is no God."