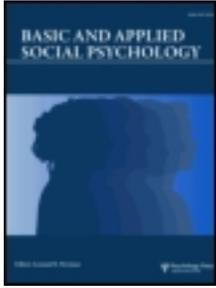


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### Religious Zeal and the Uncertain Self

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## Religious Zeal and the Uncertain Self

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In two studies, personal uncertainty threats caused compensatory religious zeal. In Study 1 an academic uncertainty manipulation heightened conviction for religious beliefs and support for religious warfare. In Study 2 a relationship uncertainty manipulation caused non-Muslim's to derogate Islam. Together, these findings demonstrate that two aspects of religious zeal—conviction for one's own beliefs and derogation of others—are caused by personal uncertainty.

The uncompromising attitude is more indicative of an inner uncertainty than of deep conviction. The implacable stand is directed more against the doubt within than the assailant without.

Eric Hoffer, 1954, p. 41

Some Christians were thrown to the lions by Romans, but far more were killed by other Christians over disagreements about the precise extent of Jesus' divinity (Durant, 1944). That people should so readily kill for their religious beliefs seems absurd to the outside observer. Yet religiously animated killings perennially blight human history. Still today, religious zeal continues to inspire killing in the Middle East and elsewhere. What is the psychological appeal of religious zeal? The present research investigates the idea that religious zeal is appealing because it helps people cope with personal uncertainty.

Uncertainty has been identified as the most basic cause of anxiety in humans, and indeed in all vertebrates. When an important goal is at risk of being blocked, but the organism is motivated to remain oriented toward the goal, an uncertain motivational state results in which approach and avoidance tendencies are simultaneously active. It is specifically this uncertain predicament that, if not resolved, results in

the experience of anxiety (Gray & McNaughton, 2000). Threats that are more certain, in contrast, activate different responses that are mediated by different brain systems. This important distinction between uncertain and certain threats is illustrated by the way a hungry, foraging rat responds to the *smell* of a cat (with anxiety) versus the *actual presence* of a cat (with fear). A hungry rat that smells a cat will continue to forage but will do so with periodic, vigilant, scanning behaviors that are relieved by anxiolytic drugs but not panicolytic drugs. In contrast, a rat confronted with an actual cat will show unconflicted fight, flight, or freeze reactions that are relieved by panicolytic drugs but not anxiolytic drugs.

In our research we use two experimental manipulations to induce a state of uncertainty in undergraduate psychology students. The first involves asking them to summarize an extremely complicated paragraph about a statistics procedure. We describe it as a common tool in psychology. We do not tell them that the paragraph is taken out of context from an advanced graduate text, with random sections deleted to make it bewildering to read. In a pilot study, after participants had completed either this bewildering statistics task or the simple control condition task, they rated how the manipulation had made them feel, using a 5-point scale. Participants reported that the difficult statistics manipulation made them feel significantly more uncertain ( $M=2.66$ ) than in the control condition ( $M=1.68$ ),  $t(113)=4.98$ ,  $p < .0005$ . Moreover, this effect on uncertainty was stronger than for any of the other adjectives assessed: good ( $p < .005$ ), successful ( $p < .005$ ), stupid ( $p < .05$ ), happy ( $p < .05$ ), smart ( $p < .05$ ), likeable (*ns*), empty

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( $p < .05$ ), meaningful (*ns*), anxious (*ns*), ashamed (*ns*), insecure (*ns*), lonely, (*ns*), out of control (*ns*). The only other adjectives that came close were frustrated ( $p < .001$ ) and confused ( $p < .001$ ), both of which are closely related to the experience of uncertainty. The effect on reported uncertainty also remained statistically significant ( $p < .001$ ), with all the other adjectives included as covariates.

In the second study, we rely on a manipulation of uncertainty that has been shown in past research to cause personal uncertainty but not general negative affect or lowered self-worth (McGregor, Zanna, Holmes, & Spencer, 2001). Thus, in addition to having strong face validity, the two manipulations of personal uncertainty have demonstrated past specificity for uncertainty related affect. Moreover, they are theoretically close to the very basic uncertainty processes described by Gray and McNaughton (2000). In both studies, participants are confronted with goal impedances that can not be simply fled from. Psychology students know that statistics is an important part of their chosen major, and dilemmas, by definition, involve goal conflicts that one feels caught up in. Although the uncertainty manipulations in both studies quite likely have downstream effects on a wide variety of negative thoughts in diverse content areas, there is good theoretical and empirical support for their primary effect on uncertainty.

The dependent variables in the two studies assessed aspects of religious zeal. Zeal refers to tenacious conviction and intolerance of dissent for an idealistic cause (McGregor, Gailliot, Vasquez, & Nash, 2007; McGregor & Marigold, 2003; McGregor, Nail, Marigold, & Kang, 2005). Social commentators and biographers have long observed that zeal erupts during periods of personal or cultural turbulence. Hitlers prototypical zeal, for example, coalesced during a phase of intense personal and national chaos, and the rise of fascism leading up to the Second World War has been similarly attributed to developmental, economic, and national insecurity (Adorno, Frenkel-Brunswick, Levinson, & Sanford, 1950; Fromm, 1941; Muslin, 1992). Personal uncertainty, in particular, has been implicated as an important cause of extreme and rigid patterns of thinking and acting (e.g., Baumeister, 1991; Durkheim, 1951; Kruglanski, 1989; McGregor, 2003, 2004). Correlational research has found links between various measures of uncertainty-aversion and extremity of conservative ideology (Jost, Glaser, Kruglanski, & Sulloway, 2003), and experimental research has found that zealous reactions are aroused by, and mask, personal uncertainty (McGregor, 2006b; McGregor & Marigold, 2003; McGregor et al., 2001, 2005; van den Bos, Poortvliet, Maas, Miedema, & van den Ham, 2005).

Our research focuses on personal uncertainty as a cause of *religious* zeal. Extreme instances of religious zeal also tend to erupt during personal and historical periods of heightened uncertainty, when identities are conflicted or threatened by competing worldviews (Armstrong, 2000; Durant, 1950; James, 1958; McCann, 1999). Surprisingly, however, there is no controlled experimental evidence implicating personal uncertainty as a cause of religious zeal. Experiments have found that other psychological threats can arouse *belief* in God, afterlife, and supernatural agency (Kay, Gaucher, Napier, Callan, & Laurin, in press; Norenzayan & Hansen, 2006; Willer, in press) and that religious controversy causes particularly extreme negative feelings among people who are most averse to uncertainty (van den Bos, van Ameijde, & van Gorp, 2006; see also van den Bos, 2001). Our research, however, is the first to assess religious *zeal* as a function of experimentally manipulated personal uncertainty. In Study 1 we manipulate academic uncertainty and assess participants' subsequent zeal for their own religious beliefs. In Study 2, for multimethod convergence we manipulate relationship uncertainty and assess participants' subsequent derogation of others' religious beliefs. Together, the two studies investigate both sharp edges of religious zeal: rigid conviction about personal opinions and derogation of competing claims.

## STUDY 1

### Method

Twenty male<sup>1</sup> volunteers in a large 2nd-year personality psychology course used electronic "clicker" devices to

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<sup>1</sup>Women also participated, but with null effects,  $|ts| < 1$ . Whereas for men random assignment resulted in 10 participants per condition, for women it resulted in 25 participants in the control condition but only 16 in the experimental condition, suggesting differential attrition (clicker pick-up was anonymous and participants could stop responding without being identified). Women may have been more threatened by the statistics materials than men. Only 28% of women, as compared to 70% of men, rated the control condition materials as "extremely easy" or "very easy." The differential attrition and difficulty ratings suggest that, perhaps because of the stereotype threat that women associate with math (see Spencer, Steele, & Quinn, 1999), female students may have found the statistics-related uncertainty materials too threatening to complete. This post hoc exclusion of women because of differential attrition in the two conditions is a limitation of Study 1. Past research under more controlled circumstances, however, has found the Study 1 uncertainty threat to cause other kinds of nonreligious zeal among both men and women (McGregor et al., 2005, Study 3). Study 2 used a different manipulation of uncertainty to conceptually replicate the results of Study 1 with a sample that included both women and men.

participate in the study. They anonymously picked up their clickers at the beginning of class after being told that the study would be related to that days lecture material. Questions were projected at the front of a lecture theatre, and clicker responses were wirelessly recorded on a central computer. After indicating their gender, participants viewed a list of prevalent religious orientations and indicated which they most identified with. Only participants who indicated definitive religious orientations were retained for the study—two who identified as “Pagan” and one who identified as “Other” were not included.

Participants randomly assigned to the *uncertainty condition* read over an extremely difficult passage taken out of context from a graduate statistics text. It was laden with imposing mathematical formulae and statistical symbols and truncated prematurely to render it incomprehensible. Participants were given 4 min to read it, to try their best to understand it, and then to indicate how easy it was for them to understand. Response options were skewed as follows to create the expectation that the passage should be easily understood: 1 (*extremely easy*), 2 (*very easy*), 3 (*easy*), and 4 (*hard*). Participants randomly assigned to the *control condition* received the same instructions as participants in the uncertainty condition, except they read a simple introductory passage from an undergraduate statistics text instead of the difficult one. (The materials for both conditions were on the back side of the lecture outline and had been shuffled and distributed at the beginning of the class.) This uncertainty manipulation targeted undergraduate psychology students’ common uncertainty about their math and statistic ability. In past research with psychology student participants this manipulation has caused self-reported confusion and defensive conviction for opinions about abortion, capital punishment, suicide bombing, and the U.S. invasion of Iraq (McGregor & Jordan, 2007; McGregor, Nail et al., 2005).

After the uncertainty manipulation, participants spent a few minutes using their clickers to answer questions about lecture topics. This delay was provided to allow time for defensive zeal reactions to emerge (Wichman, Brunner, & Weary, in press). And then for the dependent variable participants then rated their agreement with eight statements about their religious zeal ( $\alpha = .75$ ): I am confident in my belief system; I aspire to live and act according to my belief system; My belief system is grounded in objective truth; Most people would agree with my belief system if they took the time to understand it rather than just relying on stereotypes about it; If my belief system were being publicly criticized I would argue to defend it; I would support a war that

defended my belief system; If it came down to it I would sacrifice my life to defend my belief system; In my heart I believe that my belief system is more correct than others’. Ratings were made on the following 5 – point scale: 5 (*strongly agree*), 4 (*agree*), 3 (*neither agree nor disagree*), 2 (*disagree*), and 1 (*strongly disagree*). Participants were explicitly instructed to refer to their identified religious orientation when answering each question.

## Results

Religious belief system identifications were 5% Muslim, 10% Buddhist, 20% Jewish, 20% Atheist, and 45% Christian. The manipulation check revealed that participants in the academic uncertainty condition rated the statistics passage as “hard” ( $M = 3.70$ ), but in the control condition they rated it as “very easy” ( $M = 2.20$ ),  $t(18) = 4.57$ ,  $p < .001$ ,  $d = 2.15$ . As predicted, on the main dependent variable participants in the academic uncertainty condition reported more overall religious zeal ( $M = 3.60$ ) than participants in the control condition ( $M = 3.04$ ),  $t(18) = 2.40$ ,  $p < .03$ ,  $d = 1.13$ . Moreover, and particularly disturbing, exploratory analyses revealed that participants in the academic uncertainty condition reported that they were significantly more willing to support a war that defended their religious beliefs ( $M = 3.00$ ) than participants in the control condition ( $M = 1.80$ ),  $t(18) = 2.45$ ,  $p < .03$ ,  $d = 1.15$ . Thus, not only did the academic uncertainty manipulation cause participants to tend to “agree” with zealous statements about their religious beliefs, it further moved them toward equivocal “neither agree nor disagree” acceptance of religious war from their usual and more pacific “disagree” stance. Study 2 conceptually replicates and extends the results of Study 1 with male and female participants and provides multimethod convergence.

## STUDY 2

Whereas Study 1 assessed zeal about participants own religious beliefs, Study 2 assessed the tendency to derogate others’ religious beliefs. Specifically it assessed non-Muslim’s tendency to derogate Islam. Exaggerated consensus and intolerance of dissent are cardinal features of zeal (McGregor et al., 2001; 2005). Uncertainty not only motivates endorsement of extremes but also motivates delusion about how objective those extremes are and derogation of dissenters (McGregor & Jordan, 2007; McGregor et al., 2001). Indeed, delusional consensus was reflected in the Study 1 finding that after the academic uncertainty threat, participants rated their

religious beliefs as particularly objective and likely to garner the agreement of others.

In Study 2 we focus on uncertainty-motivated derogation of dissenting religious views. Non-Muslim participants ruminated about a relationship dilemma ongoing in their lives and then evaluated Islam. We expected the uncertainty manipulation to cause derogation of Islam.

## Method

Thirty-four female and 19 male non-Muslim undergraduates received either course credit or \$5 for their participation. The experiment was advertised as exploring “relationships, opinions, personality, and decisions” and was administered on computers in private cubicles in lab sessions with as many as 6 participants at a time. After answering gender, demographic, and personality questions that took approximately 10 min to complete, participants were randomly assigned to describe either a currently unresolved relationship dilemma of their own (uncertainty condition) or a relationship dilemma a friend was facing, for which the participant had a clear and certain opinion about what the friend should do (control condition). All participants were allocated 3 min to complete these materials, after which the computer automatically began the next portion of the experiment. Uncertainty and control condition materials were adapted from McGregor et al. (2001).

The main dependent variable was then assessed after 3 min of filler materials that provided the delay required for the onset of zealous reactions to uncertainty (Wichman et al., in press). Participants rated their agreement with the following statements about Islam: Most people who practice Islam value peace; Equality is an important concept in Islam; Islam promotes essentially the same good values as other world religions; The Qur’an and Bible contain similar stories; Islam promotes religious tolerance; Islam would be an okay religion if it did not have such oppressive rules; There is something in Islam that invites terrorism; Canada should have more stringent immigration regulations for people from Islamic countries; The majority of people who practice Islam are religious zealots; Islam is a cult on a larger scale. Participants rated each statement on a scale from 1 (*strongly disagree*) to 5 (*strongly agree*). The five positive and five reverse-scored negative items were averaged for a measure of Islam evaluation ( $\alpha = .80$ ). To afford a comparison between religious zeal and ingroup bias effects, the items assessing Islam evaluation were mirrored by a counterbalanced block of 10 questions that assessed participants’ evaluation of Canada. For the main analysis, we regressed Islam evaluation on manipulated uncertainty condition, with

Canada evaluation and gender as covariates (neither covariate interacted with condition,  $|ts| < 1$ ).<sup>2</sup>

## Results

Islam evaluations were significantly more negative in the uncertainty condition ( $M = 3.24$ ) than in the control condition ( $M = 3.53$ ),  $t(49) = 2.16$ ,  $p < .05$ ,  $d = .62$ . It is important to emphasize that this uncertainty effect was significant even when attitudes toward Canada (which were not affected by the uncertainty manipulation;  $p > .17$ ) were statistically controlled. Thus, uncertainty specifically caused zeal about religious beliefs. This lack of an uncertainty effect on Canadian national pride is the usual finding in our laboratory (McGregor, Haji, & Kang, in press). National pride may be too vague of a phenomenon to serve as a topic of zeal for Canadians (except perhaps during international hockey competitions).

## GENERAL DISCUSSION

Religious rapture, moral enthusiasm, ontological wonder, and cosmic emotion, are all unifying states of mind, in which the sand and grit of self-hood incline to disappear. (James, 1902, p. 240)

Personal uncertainty caused two aspects religious zeal. In Study 1 academic uncertainty increased conviction for religious beliefs and support for religious warfare. In Study 2 relationship uncertainty caused derogation of Islam among non-Muslims. These results extend the range of defensive zeal research. Past research has found that individuals respond to the same uncertainty manipulations used in the present research with defensive zeal about social issues (McGregor & Jordan, 2007; McGregor & Marigold, 2003; McGregor et al., 2001; 2005). Our research demonstrates that uncertainty-induced defensive zeal processes can also bias religious convictions. Indeed, religious ideology may be a particularly reliable and attractive domain for defensive zeal because religious ideals are difficult to objectively

<sup>2</sup>Although the Gender  $\times$  Uncertainty interaction effect did not predict Islam evaluation, there was a marginal effect of gender on Islam evaluation, such that women were marginally more negative toward Islam ( $M = 3.28$ ) than men did ( $M = 3.52$ ),  $t(49) = 1.75$ ,  $p < .10$ ,  $d = .50$ . This marginal tendency for non-Muslim women to like Islam less than men is potentially interesting in its own right, but the null Uncertainty  $\times$  Gender interaction effect is most important here, given that Study 1 only used male participants. The Study 2 result shows that at least one aspect of religious zeal after uncertainty occurs regardless of gender, which is consistent with the absence of gender effects in past research on zeal about nonreligious topics (e.g., McGregor et al., 2001).

refute. As such, religious zeal can provide a reliable safe haven of hopeful and certain ideals that one can focus on to make the “sand and grit of selfhood” disappear (James, 1902, p. 240). Our results help explain one piece of the puzzle of why religious conflicts can be so intractable. Religious zeal can be a motivated defense that people seize onto quell self-uncertainty.

This is an important finding because most people would likely be loathe to admit that the fervency of their religious ideals might be, at least in part, a psychological defense (McGregor, 2007). Moreover, given the social cost of religious extremism, and the dire need for clear illumination of the phenomenon, the direct causal demonstrations in our research could be particularly instructive.

At a more general level still, these findings add to a growing body of research demonstrating that various threats with links to uncertainty cause compensatory conviction and zeal about various topics that are far removed from the topics of the threats (reviewed in McGregor, 2006a). All of the threats that cause such defensive zeal reactions share a common property of being experiential threats to important goals or values from which one cannot easily disengage. All of the various zeal reactions reflect unconflicted ideals or actions, which can return the individual to an unconflicted state of unmitigated approach-motivation (McGregor et al., 2007). Ideals have been isolated, both theoretically and empirically, as being closely linked with approach-motivation processes (Amodio, Shah, Sigelman, Brazy, & Harmon-Jones, 2004; Higgins, 1997). Accordingly, we interpret the current results as reflecting a very basic kind of compensatory approach-motivation that people (and other animals; Sullivan, 2004) turn to for relief from the anxiety that can result from unresolved conflict and uncertainty. Future research assessing patterns of neural activation after uncertainty threats are currently under way to more directly assess this defensive approach-motivation hypothesis.

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