

The Influence of Sacred Beliefs in Environmental Risk Perception and Attitudes

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Abstract

Elements of the natural world, such as mountains, rivers, and forests, are often seen as sacred in many cultural traditions. Recent conservation movements have even begun to draw on spiritual and religious beliefs to promote issues of environmental sustainability. The straightforward assumption in these cases is that sacred beliefs (compared with secular ones) will hold greater sway in alerting people to various environmental perils. However, environmental risk perception is a complex process, and we find that, in some cases, viewing natural resources as sacred may lead to a diminished perception of environmental risks such as pollution. Across three studies, we show that sacred beliefs may inure participants to the harmful effects of pollution in the Ganges River. Implications of these sacred value–based risk perceptions for conservation movements are discussed.

Keywords

culture, environmental concern, ecological risk, sacred values, water pollution

Introduction

The social sciences have made great contributions to understanding environmental risk perception. Work from behavioral economics and psychology has shown why (or how) laypeople fail to understand or accept experts' estimations

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of risk. For instance, while experts rate nuclear technology to be fairly safe, public perception does not seem to follow because the idea of a nuclear meltdown still evokes greater feelings of dread (Slovic, 1987, 2000). Other theories propose that risk perception should be viewed as a social process where cultural and ideological worldviews determine what should be feared and why (Dake, 1992; Douglas & Wildavsky, 1983). In this article, we demonstrate that ecological risk perception and sociocultural systems of meaning interact in powerful ways. We particularly examine how culturally constructed sacred beliefs about natural resources may attenuate the perceived danger of environmental hazards.

Sacred Beliefs and Environmental Risk Perception

The sacred and secular aspects of social life are often experienced as fundamental contradictions (Durkheim, 1912/1995; Eliade, 1959; Tetlock, 2003). Sacred objects are thought to be essentially pure and worthy of reverence (Belk, Wallendorf, & Sherry, 1989). The sacred has mostly been studied in the context of religious beliefs, for example, the sacrosanctity of particular holy lands, temples, mosques, or symbols such as the Christian cross, but cultural or national symbols such as a flag can also be viewed as sacred. One common distinction in the behavioral sciences is that while secular objects can have instrumental or material value, sacred objects have transcendent meaning that cannot be quantified on a pecuniary metric. For instance, while it is relatively straightforward to judge the value of a car, it can seem blasphemous to assess the value of World Trade Center's Ground Zero or the ashes of a loved one (Belk et al., 1989; Dehghani, Gratch, Sachdeva, & Sagae, 2014). Sacred objects and values are seen as essentially pure, and therefore, any adulteration from the secular world feels like an insult (Tetlock, 2003; Tetlock et al., 2000). Sacred values are seen as symbols of a group's identity and often bind communities together. As field studies show, they can be powerful motivators of action and even intergroup conflict (Ginges & Atran, 2011).

Within the environmental domain, although it is clear that natural resources are regularly consumed as secular goods, whether they are bought and sold as economic commodities or used to support ordinary livelihoods (Pearce & Turner, 1990), nature is often also seen as a manifestation of the sacred (Frazer, 1996). Mountains, forests, land, rivers, and livestock are seen as sacred in several cultures across the world (Bernbaum, 2006; Gadgil & Vartak, 1976; Harris et al., 1966; Lebbie & Guries, 1995; Sosis, 2011). The sacredness of these natural resources is often sought out through immersion experiences and ritual and worship practices, which serve to cultivate and maintain notions of purity. While the secular perception of nature is mired in

“brute physicality,” the sacred aspect of nature is transcendent and pure and can be the means to a spiritual (though not necessarily religious) experience (Frazer, 1996; McFague, 2008; Williams & Harvey, 2001).

Despite identifying these fundamentally different ways of thinking about the natural world, not much is known about the implications of these sacred and secular perceptions on environmental risk perception and attitudes (Ignatow, 2006). One potential implication is that because sacred objects are deemed worthy of protection, viewing nature as sacred will yield positive consequences for environmental protection (Gadgil & Vartak, 1976; Lebbie & Guries, 1995). However, an alternative hypothesis is that seeing some natural resources as sacred may actually dampen the perceived danger of environmental hazards. This perspective may seem somewhat counterintuitive at first glance, but we argue that because a sacred space, by virtue of its sacred status, is seen as the epitome of purity, it may be seen as protected from pollutants and other environmental risk factors.

Sacred perceptions have been shown to mitigate perceived risk. For instance, beliefs in sacred practices and religious rituals, such as wearing talismans (objects worn to ward off evil) or performing sacrifices, have been shown to reduce perceived risk in the factors that may cause vehicular accidents (Kouabenan, 1998). In the environmental domain, research shows that people may be more likely to deny the existence of smog and other air pollution in a place they perceive as having symbolic value. Historic city centers, for example, were viewed as being less polluted than other regions, and similarly, one’s own neighborhood was seen as less polluted than was the city as a whole (Bickerstaff, 2004; Bickerstaff & Walker, 2001).

Building on this reasoning, we suggest that viewing natural objects as sacred may lead people to minimize environmental dangers that not only pose risk to themselves but also may harm the sacred object itself. As a test case for the purposes of the studies presented here, we examine the Ganges River in northern India.¹ The Ganges provides freshwater to 40% of India’s population and plays an integral role in crop irrigation (Arnold, 2000). However, over the past century, the Ganges has become highly polluted through a boom in human population, the discharge of untreated sewage from adjoining cities, and the dumping of industrial waste. The fecal coliform counts in the river are 10 to 20 times higher than the maximum amount permitted by the Government of India for bathing (Alley, 1994; Harvey et al., 2005). Recent studies reveal that the pollution levels in the Ganges also pose a significant health hazard to those living closest to it, including increasing the risk of gastrointestinal diseases (Hamner et al., 2006). In addition, the effects of global climate change have decreased water levels in the Ganges and further compounded effects of pollution.

However, the Ganges is unique in that it has been viewed as a sacred river for 5,000 years. Mentioned in all major Hindu texts and scriptures, the river is seen as the physical manifestation of a divine Goddess. Bathing in the Ganges is thought to cleanse the soul, leading tens of millions of Hindus to bathe in its waters and also to immerse the remains of their loved ones (Alley, 2002; Bhargava, 1987; Eck, 1998). Each year, the river floods portions of the historic city, disrupting pilgrimage routes and daily activity. But these events are not necessarily seen as crises by many local inhabitants, who perceive the Ganges as their Mother Goddess, a divinity that not only guarantees them salvation but also purifies all discharged defilements, while continuing to exert a wide range of influences on their lives.

How can this apparent paradox exist—one of the most sacred rivers in the world is also one of its most polluted? We hypothesize that viewing a natural resource as sacred may evoke notions of purity, which reduce perception of environmental risk. We present results from three studies to test this hypothesis. First, we show that participants' levels of sacred beliefs are significantly correlated with their awareness of pollution risk. Second, we show that a causal relationship exists between sacred perceptions and risk attitudes. Finally, in a field experiment, we show that varying participants' engagement with the river, in either a sacred or a secular way, influences how they think about environmental risk.

Study 1

Study 1 examined the relationship between viewing an environmental resource (the Ganges River) as sacred and perceived pollution risk.

Method

Participants. Study 1 was conducted as an online survey using Qualtrics. Participants who identified as Hindu were recruited through Internet-based approaches (Temple & Brown, 2011). Social networks–based recruiting involved asking collaborators at Indian universities and non-governmental organizations to distribute the survey link to interested participants who were then asked to forward it in their social networks. Search engine advertising relied on particular keywords being searched (e.g., Indian culture, Ganges, Ganga, etc.) from an Indian IP address. Our advertisement would only be presented when these keywords were searched. The posting asked participants to be part of a study that would help increase researchers' understanding about people's attitudes toward the Ganges.² This multi-pronged approach to Internet-based participant recruitment was enlisted to control for potential

selection bias as much as possible though this approach, in general, requires participants to have Internet access. We limited our sample to participants with an IP address from India as a means of controlling for other culturally based variations. Participants were not paid for their involvement in the study.

Materials. The first part of the survey consisted of four questions that were used to create an index of sacred attitudes. These questions consisted of both behavioral and attitudinal items. The four questions were as follows: (a) Do you use water from the Ganges in your prayers? (b) Do you think water from the Ganges is sacred? (c) Is the Ganga a goddess? (d) Do you think soil from the Ganges is holy? Questions (a) and (b) were binary response variables, whereas Questions (c) and (d) were measured on 4-point scales. These four measures were highly correlated and were collapsed into an overall index of sacred beliefs (Cronbach's $\alpha = .71$). We then asked for participants' perception of pollution levels in the river on a 5-point Likert-type scale. In addition, participants were also asked to respond on a 4-point scale whether they believed the Ganges had the capacity for self-healing (i.e., "Does the Ganga have the power to clean herself to some extent?"). The survey concluded with a brief demographic questionnaire about age, gender, and religion followed by a debriefing form explaining the purpose of the study and providing contact information for additional questions.

Results

A total of 89 responses were obtained through the online survey. Of these, five responses were removed because of duplicated IP address and timestamps (i.e., same participant appeared to have consecutively taken the survey five times), leaving a final sample of 84 responses (23 females, 42% of participants above 35 years of age). Statistical analysis was performed using R (R Development Core Team, 2014).

The survey took 13.42 min on average to complete ($SD = 9.38$). The mean on the sacred index was 1.50 with a range from 1 to 3 ($SD = 0.52$). Results of the Ganges's ability to clean itself fell in the middle of the 4-point scale ($M = 2.45$, $SD = 1.15$). The mean of the pollution measure was 4.08 on a scale of 5 ($SD = 1.22$), indicating that the majority of participants agreed that the Ganges river is polluted.

To test the relationship between sacred beliefs, self-cleaning capacity, and perception of pollution, we built a generalized regression model with these factors and demographic variables (age and gender). As predicted, we found that participants who viewed the river as more sacred perceived less pollution than those who did not, $\beta = -0.73$, $t(78) = 2.84$, $p < .01$, 95%

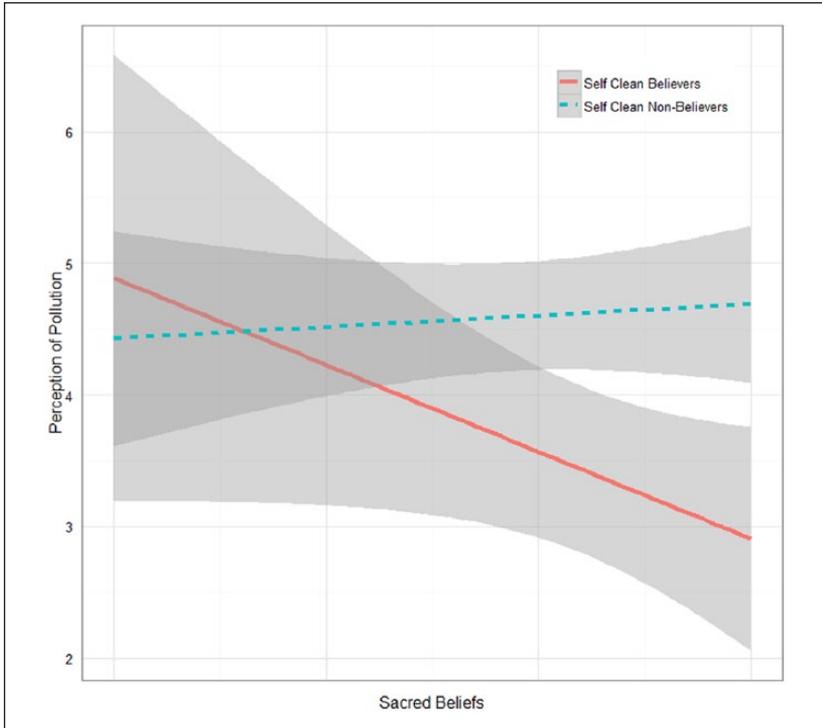


Figure 1. Interaction plot showing perception of pollution by participants' sacred beliefs and belief in the Ganges's ability to clean itself.

confidence interval (CI) = $[-1.23, -0.23]$. In addition, belief in the Ganges's self-cleaning capacity was also a significant predictor of perceived pollution levels; that is, belief in the Ganges's capacity to clean itself was inversely related to pollution perception, $\beta = -0.98$, $t(78) = 3.19$, $p < .01$, 95% CI = $[-1.58, -0.38]$. These main effects were qualified by a significant interaction between sacred and self-cleaning beliefs, $\beta = 0.21$, $t(78) = 2.37$, $p < .01$, 95% CI = $[0.04, 0.39]$. Of the demographic factors, only gender was a significant predictor with women more likely to perceive the Ganges as polluted, $\beta = 0.25$, $t(78) = 2.1$, $p < .05$, 95% CI = $[0.02, 0.47]$. As shown in Figure 1, participants who believed that the Ganges had the ability to clean itself and viewed the river as sacred were less likely to see the river as polluted. However, participants who thought that the river could clean itself but did not view it as sacred were more likely to state that the Ganges was polluted. The linear model, controlling for capacity for self-cleaning, gender,

and age, explained 27% of the variance in pollution perception, $F(5, 78) = 5.81, p < .001$.

Discussion

The results from Study 1 suggest that people who have stronger sacred beliefs for the Ganges are less likely to perceive the river as polluted. This study provides initial evidence for our contention that viewing a natural resource as sacred may inure participants to ecological risk. Participants were recruited mostly via online advertisements, but it is possible that there may be differences we cannot account for across different recruitment efforts. This possibility was addressed in Study 2 by using only online advertisements to recruit participants.

In addition, because Study 1 used a survey design, we were unable to assess whether a causal link exists between sacred beliefs and risk perception. If it is true that viewing a resource as sacred affects risk perception, then we should be able to highlight either sacred or secular aspects of a natural resource and vary perceptions of pollution levels.

Study 2

We used an experimental design in Study 2 to test whether presenting participants with either sacred or secular information about the Ganges would affect their perceived levels of water pollution. We were also interested in assessing whether presenting sacred or secular information would have different effects on participants with strong versus weak sacred beliefs. Consequently, we retained our measure of sacred beliefs, used in Study 1, to assess the effects of individual differences on pollution perception.

Method

Participants. One hundred ten participants were recruited via online advertisements as in Study 1. Although recruitment methods across the two studies were similar, an analysis of duplicated IP addresses safeguarded against overlap in the studies' participant pool. The sample was limited to Hindu participants residing in India and was 86% male; 56% of respondents reported their age as more than 35. Most participants had at least some college education (81%).

Procedure. We experimentally manipulated the type of information (sacred or secular) participants received in an online study by asking them to participate in a short, multiple-choice quiz about the Ganges (see Online

Supplemental Appendix A for details). They were then randomly assigned to receive either sacred or secular information about the river. Participants read through seven questions, in each condition (e.g., Sacred—"Which sacred text does not mention the Ganges?" or Secular—"How long is the Ganges River?"). Questions were designed to be fairly easy to answer, and participants were given a single chance to answer each question though they received feedback after every response. After completing the quiz, all participants viewed a series of questions as in Study 1 asking about perceived risk to the Ganges (i.e., pollution level), their personal sacred beliefs about the river (the four-question sacred beliefs scale), and belief in its capacity to clean itself. The survey concluded with a few demographic questions about age, gender, education, and religion.

Results

One participant was removed from the sample due to duplication, leaving a final sample of 109. The average score across both the sacred and secular information quizzes was 5.60 correct answers, $SD = 1.54$ out of a maximum score of 7, indicating that most participants had a fairly easy time answering the questions.

Next, we analyzed the effect of information type on perceived environmental risk. We conducted an ANCOVA with all variables of interest: information type (sacred or secular information), sacred beliefs, belief in self-cleaning ability, and demographic variables (age, education, and gender). As predicted, participants who received sacred information perceived less pollution in the Ganges than did participants who received the secular information ($M = 3.47$ vs. 4.00), $F(1, 97) = 4.72, p < .05$. These results suggest that framing the Ganges as a sacred resource led participants to perceive less danger to it whereas presenting the Ganges as a secular resource led to increased perception of pollution risks. As shown in Figure 2, there was also a main effect of sacred beliefs, as in Study 1, such that stronger sacred beliefs decreased perception of pollution levels, $F(1, 97) = 12.89, p < .001$. Finally, a main effect of belief in self-cleaning ability showed that participants who thought that the river could cleanse itself viewed it as less polluted, $F(1, 97) = 4.94, p < .05$. Interestingly, no interaction was found between information type and sacred beliefs. Regardless of participants' personal beliefs about the river, receiving sacred information about it decreased perceived pollution risk, suggesting a general effect of sacred versus secular information.

Studies 1 and 2 demonstrated that viewing the Ganges in a sacred light may lead to lower perceived pollution risk than those attendant to secular beliefs. Study 2, in particular, showed that presenting either sacred or secular

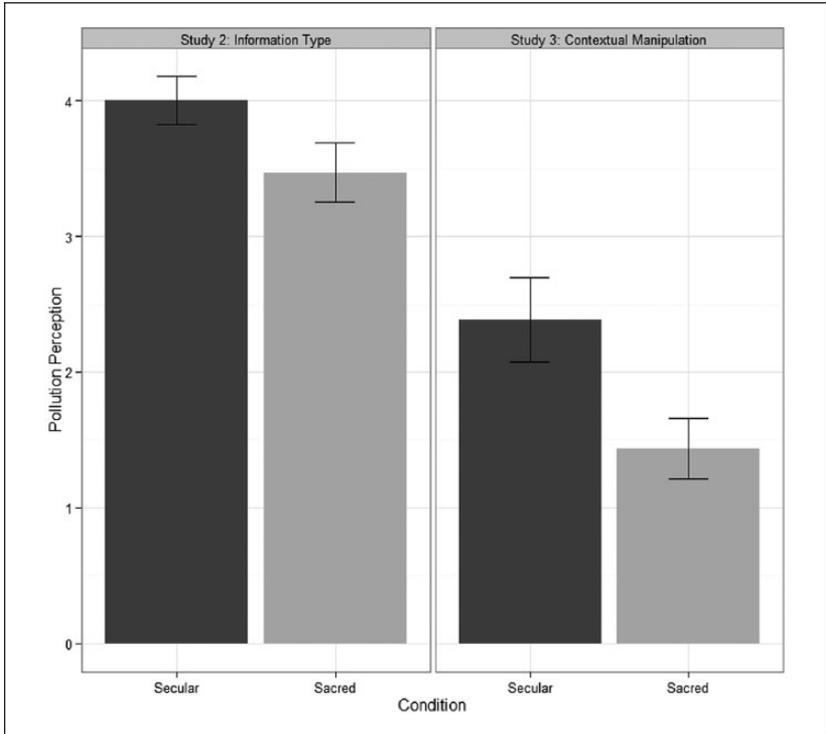


Figure 2. Means of participants' perceptions of pollution in the Ganges by experimental manipulation in Studies 2 and 3.

information about the Ganges influenced perceived pollution levels. Note, however, that while the experiment attempted to manipulate only sacred and secular framings of the Ganges, it is likely that other factors, such as vividness of description and emotional salience of the river, were also inadvertently varied. It is unclear whether this minimizes interpretability of the results from Study 2 because sacred beliefs are necessarily different from secular ones, not only on a spiritual dimension but also on a variety of other features such as emotional engagement. Future studies will be designed to isolate what particular facet of sacred/secular information is responsible in large part for the patterns of results obtained in Study 2.

Another important consideration is that these results were obtained from an online sample, which may not be representative of people who are most affected by the pollution in the Ganges. In Study 3, therefore, we tested the relationship between sacred beliefs and ecological risk perception in a field study.

Study 3

Our aim was to test whether manipulating sacred versus secular representations of the Ganges in a field setting would yield similar results as those observed in the previous two studies. Data collection took place in the city of Varanasi in northeastern India (population = 1.09 million). The city of Varanasi is renowned for its unique relationship with the Ganges (Singh, Spate, & Sopher, 2009). Historically, the city has attracted tourists, traders, pilgrims, and scholars who engage with the river in both sacred and secular ways. On the spiritual side, Hindus believe that immersing one's ashes after death in the Ganges at Varanasi's Manikarnika Ghāt helps the soul attain salvation. But the Ganges has also played a crucial role in making Varanasi the political, economic, and learning center of northern India at various points in its history (Eck, 1982). In particular, the importance of the Ganges and its water supply to Varanasi is keenly felt and is often referred to as the lifeline of the city (Singh, 1994).

Varanasi also provided an ideal setting to allow us to vary sacred versus secular representations. The shores of the Ganges in Varanasi are lined with scores of *ghāts*. These *ghāts* refer to the stone steps and platforms leading to the river that allow residents to conduct their daily activities, such as washing clothes and dishes, bathing, and prayer, as well as providing a place for public gatherings. It is along these *ghāts* that participants were recruited while they were engaging in conducting sacred activities, such as prayers or other rituals, or while conducting secular activities, such as washing clothes. Remarkably, the time and locations at which these activities take place also seem to vary. While prayers and ritualistic dipping tend to occur in the early morning or early evening hours, secular activities take place in the later morning or afternoon hours. This contextual manipulation, of both time and location, allowed us to conduct a naturalistic quasi-experiment as people along the *ghāts* routinely engage in both types of activities (Campbell, Stanley, & Gage, 1963).

Method

Participants. A total of 31 Hindu participants (26 males; $M_{age} = 38.6$ years) were interviewed in one-on-one sessions on the outdoor *ghāts* of Varanasi, India, as described above. Participants were recruited in different contexts to manipulate their means of engaging with the river. We recruited 15 participants while they were engaged in sacred activities, and the remaining participants were recruited in a secular context.

Procedure. Each structured interview session ranged from 30 to 90 min, depending on participants' involvement and willingness to share personal stories. As in the previous two studies, we asked questions about participants'

sacred beliefs about the Ganges, its self-cleaning ability, and perceived environmental risk. These questions were the same as those posed in Studies 1 and 2, but because these interviews were face to face, we allowed participants to ask clarifying questions. Responses to the sacred beliefs questions were all obtained on a 4-point scale as opposed to the mix of binary and 4-point scales used in the previous two studies. Interviews were conducted mostly in Hindi, the most common regional language. Interviews across both contexts followed the same format and consisted of the same questions and order.

Results

Perhaps as an indication of how important the Ganges is for the people of Varanasi, most participants had strong sacred beliefs regarding the river. As in the previous two studies, the measure of sacred beliefs was an index derived from combining four separate questions for a maximum score of 4. For instance, *all* participants believed the water of the Ganges to be sacred, used its water in prayers, and routinely bathed in its waters for spiritual and physical cleansing. Interview context did not seem to affect sacred beliefs as participants across both conditions had similar levels of sacred beliefs ($M_{sacred} = 3.97$, $SD_{sacred} = 0.13$; $M_{secular} = 3.81$, $SD_{secular} = 0.44$). These findings paralleled the results from Study 2 in which experimentally manipulating sacred and secular information did not affect personal sacred beliefs (see Figure 2).

To test the effect of interview context on pollution perception, we conducted a multi-factor ANCOVA with the following variables: interview context (sacred vs. secular), sacred beliefs, self-cleaning beliefs, and demographic variables (e.g., gender, age, and education). This analysis revealed that participants recruited while conducting sacred activities were more likely to assert that the Ganges was not polluted and did not face environmental risk compared with participants in the secular activities context ($M = 2.62$ vs. 3.56), $F(1, 20) = 7.73$, $p < .05$. Participants' belief in the Ganges's self-cleaning ability also emerged as a significant predictor as in the previous studies—Participants who thought the river could clean itself also believed it to be less polluted, $F(1, 20) = 7.34$, $p < .05$. Participants' sacred beliefs did not have a statistically significant association to their perceptions of pollution though this could be a ceiling effect due to most participants expressing a high level of sacred beliefs in general.

Discussion

Study 3 presented us with an opportunity to test the relationship between sacredness and environmental risk perception in a naturalistic context. We

were able to quasi-experimentally manipulate the context of participants' engagement with the Ganges River so that they were recruited while engaging in either spiritual or secular activities on the banks of the river (Cook & Campbell, 1979). This simple manipulation appeared to have a significant impact on participants' perception of how polluted the Ganges river is with people in the secular contexts more willing to recognize its level of toxicity. This contextual manipulation did not affect other facets of participants' beliefs about the Ganges, however. All participants strongly viewed the river as sacred with a capacity to not only clean itself but also cure others of physical and mental suffering. Through the course of our interviews, we heard numerous stories of participants being healed by bathing in the often frigid waters of the river. On the opposite end, when we asked participants if they had ever heard stories of people falling sick after bathing in the river, as scientists routinely claim the elevated fecal coliform counts might cause gastrointestinal disease, participants resoundingly said they had never heard of such stories.

The field nature of this study raises questions about the rigidity of the manipulation and ensuing causal inference (i.e., is the only variable being manipulated the context of engagement with the river or is time of day and location affecting the perception of pollution?). However, the ecological validity of this sort of approach underscores the importance of the question being addressed, by valuing the perspective of people most affected by the pollution in the Ganges, and emphasizes the need for more studies outside of psychology laboratories.

General Discussion

Aspects of the natural world are often sacralized, and it is logical to expect that sacred natural objects should be better protected than non-sacred natural objects. However, in this article, we revealed an apparent paradox—in some cases, viewing natural resources as sacred may lead to minimizing environmental risk. Participants' personal sacred beliefs about the Ganges were a significant predictor of perceived pollution risk; that is, stronger sacred values led to decreased perception of pollution (Studies 1 and 2). In addition, experimentally manipulating the type of information participants received about the Ganges, focusing on either secular information, such as the length of the river, or sacred information, such as its mythological history, influenced perceived risk. Finally, we found similar results in a field study conducted in Varanasi, on the banks of the Ganges, where participants perceived pollution risks differently based on whether they were engaged with the river in sacred versus secular contexts. Together, these studies suggest that environmental risk

perception is closely linked to and informed by sacred beliefs. In particular, our results show that the strength of sacred beliefs can sometimes mask the ill effects of environmental hazards.

There are several potential limitations of this work. One important caveat is that a singular measure of pollution was used in all of the studies conducted. This does limit the construct validity of the studies' dependent measure due to potential mono-operation bias (Cook & Campbell, 1979). However, over the course of the field interviews in Study 3, the Hindi word *gandagi* was used to ask about pollution if participants did not understand the English word "pollution." While this is the most common colloquial substitution in Hindi (Alley, 1994), its literal translation is "dirty." Therefore, we implicitly have two measures of pollution perception built into the third study, which exhibit similar effects from the sacred and secular contextual manipulation.

The studies presented here point to some important future directions. The Ganges River is a crucial support system for economic and social infrastructure in northern India, which makes these results meaningful for the millions of people who rely on it. However, there are various cultural factors that influence environmental attitudes and shape risk perceptions (Steg & Sievers, 2000; Xue, Hine, Loi, Thorsteinsson, & Phillips, 2014). The concepts presented in the current work, that of sacredness and its resultant shield from environmental ill effects, may be moderated by other factors such as conservative versus liberal ideology (Haidt & Graham, 2007; Markowitz & Shariff, 2012). Some evidence of these potential cultural differences is already apparent in the differences between sacred beliefs of the Ganges between the three studies in this article. Participants in Studies 1 and 2, who tended to be more educated and farther away from the river, were less likely to see the river as sacred and more willing to acknowledge pollution at the outset than participants in Study 3 who were closest to the river.

Second, though we have highlighted the link between sacred beliefs and environmental risk perceptions, the studies are silent as to the relationship between sacred beliefs and environmental or conservation behavior. In general, the relationship between risk perception and behavior appears to be tenuous (Brewer et al., 2007; Fischer & Charnley, 2012). However, sacred beliefs can often be powerful motivators of behavior (Ginges & Atran, 2009). It is plausible that even though sacred beliefs in the environmental domain led to decreased risk perception, they may still increase commitment to conservation behavior (Mgumia & Oba, 2003). In other words, heightened awareness of environmental risk might not be a necessary condition in promoting environmentally friendly action (O'Connor, Bord, & Fisher, 1999). Our main contribution in this work is to suggest that strategies for changing

public behavior or instituting environmental policies must take into account distinct cultural models. Ecological risk perception can be conceptualized as a fluid complex of sacred beliefs and resource rather than as an all-or-nothing mindset.

Conclusion

As previous research has shown, environmental risk perception depends on a myriad of factors and can only be well understood by studying cultural influences on risk models. Here, we suggest that notions of sacred and secular may also affect perceptions of environmental risk. This is particularly relevant because aspects of the natural world are often viewed as sacred, but we have little understanding of what effect these concepts might have on environmental attitudes. In our work, we reveal an important paradox—sacred values may at times buffer people against perceiving environmental risk. In the case of the Ganges River, its role of a Goddess that epitomizes purity diminishes perceptions of the hazards that pollutants can cause it. These findings should not be interpreted as a denouncement of the role of sacred beliefs in evaluating environmental risk, but rather as a prescription to attend to the sacred aspects inherent in environmental decision making. Sacred beliefs may lead participants to value different aspects of the natural world (e.g., revering one species of tree over another; Lebbie & Guries, 1995); they may shape risk or incentive structures or affect causal models of ecological systems (e.g., how was the river created and what is its purpose?). The most effective and sustainable solutions for behavioral changes and resource management, therefore, may only be reached by understanding the spiritual side of environmental decision making.

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Notes

1. The Ganges is the anglicized name of the Ganga River. The latter is still the way most Indians refer to it (adding the honorific suffix -ji or - ma [mother]); however, for the purpose of this manuscript, I will maintain consistency by using the former.
2. All recruitment materials were approved by Northwestern University's Institutional Review Board.

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