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Religion Is What Individuals and Societies Make of It: Moderators of Religion's Effects at the Level of Person, Situation, and Culture

A dissertation submitted in partial satisfaction of the

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in Psychology

by

Joni Yoshiko Sasaki

Committee in charge:

Professor Heejung Kim, Chair

Professor James Blascovich

Professor Shelly Gable

Professor Tamsin German

June 2012

The dissertation of Joni Yoshiko Sasaki is approved.

James Blascovich

Shelly Gable

Tamsin German

Heejung Kim, Committee Chair

June 2012

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VITA OF JONI YOSHIKO SASAKI

June 2012

EDUCATION

University of California, Santa Barbara — Sept 2006 – present
Degree: Doctorate of Philosophy in Social Psychology
Area of specialization: Cultural Psychology
Advisor: Dr. Heejung Kim
Projected graduation date: June 2012

Claremont McKenna College — Aug 2002 – May 2006
Claremont, California
Degree: Bachelor of Arts in Psychology (Honors), Magna Cum Laude
Academic Advisor: Dr. Diane Halpern
Thesis Advisor: Dr. Mark Costanzo

PROFESSIONAL EMPLOYMENT

Instructor of Record — Sum 2009, 2010
University of California, Santa Barbara

Teaching Assistant — Winter 2006 – Spring 2011
University of California, Santa Barbara

GRANTS AND AWARDS

Fletcher Jones Graduate Fellowship ($20K + tuition) 2011 – 2012
Graduate Research Mentorship Program Fellowship ($20K + tuition; declined) 2011
National Science Foundation (NSF) East Asia & Pacific Summer Inst. (~$10K) 2011
NSF Award ($8K; supplement for graduate research; PI: Heejung Kim) 2011
Society for Personality & Social Psych. (SPSP) Grad. Diversity Travel Award 2011
UCSB Graduate Student Association Travel Grant 2009
UCSB Academic Senate Graduate Student Travel Grant 2009
SPSP Undergraduate Diversity Travel Award 2006
Claremont McKenna College Dean of Students Conference Travel Grant 2006
Claremont McKenna College Dick & Mary Butler Study Abroad Award 2004
Claremont McKenna College Scholarship 2002 – 2006

PUBLICATIONS

Sasaki, J. Y., Ko, D., & Kim, H. S. (in press). Culture and self-worth: Implications for social comparison processes and coping with threats to self-worth. In Krizan, Z. (Ed.) *Social Comparison*.

Sasaki, J. Y., Kim, H. S., Mojaverian, T., Kelley, L. D., Park, I., & Janušonis, S. (2011). Religion priming differentially increases prosociality among variants of Dopamine D4 Receptor (DRD4) gene. *Social Cognitive and Affective Neuroscience*. Advance online publication.

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INVITED COLLOQUIA AND LECTURES

York University Psychology Department	January 2012
INSEAD Business School Micro Group Brownbag	August 2011
University of Auckland Psychology Department Colloquium	June 2011

INVITED CONFERENCE PRESENTATIONS

Sasaki, J. Y. Is God a Conservative? The Moderating Role of Power in the Religion–Politics Link. Research presented at the *Society for Personality and Social Psychology Religion and Spirituality Pre-Conference*. January 2012. San Diego, California.

Sasaki, J. Y. Cultural Differences in Daily Effects of Religious Coping. Research presented at the *Kokoro Research Center's Culture and Emotion Workshop*. March 2008. Kyoto, Japan.

CHAIRED CONFERENCE SYMPOSIA

Sasaki, J. Y., & Kim, H. S. Religion Encourages Prosocial Behavior Differently Depending on Genes. Research presented at the *Society for Personality and Social Psychology Conference* in co-chaired symposium with Dr. Heejung Kim on "Pro-/Antisocial Behavior Is Swayed by Beliefs in God and Expression of Genes: A New Take on a Classic Topic." January 2012. San Diego, California.

Sasaki, J. Y., & Kim, H. S. At the Intersection of Culture and Religion: A Cultural Analysis of Religion's Implications for Secondary Control and Social Affiliation. Research presented at the *Society of Experimental Social Psychology Conference* in co-chaired symposium with Dr. Heejung Kim on "Implications of Religion for the Self: From Emotion and Cognition to Behavior." October 2010. Minneapolis, Minnesota.

Sasaki, J. Y., & Kim, H. S. At the Intersection of Culture and Religion: A Cultural Analysis of Religion's Implications for Control and Social Affiliation. Research presented at the *Society for Personality and Social Psychology Conference* in co-chaired symposium with Dr. Heejung Kim on "The Origins, Predictors, and Moderators of Religious Beliefs and Involvement." January 2010. Las Vegas, Nevada.

CONFERENCE SYMPOSIA

Sasaki, J. Y., & Kim, H. S. At the Intersection of Culture and Religion: A Cultural Analysis of Religion's Implications for Control and Social Affiliation. Research presented at the *8th East West Center International Graduate Student Conference on the Asia-Pacific Region*. February 2010. Honolulu, Hawaii.

Sasaki, J. Y., & Kim, H. S. Cultural Differences in the Effects of Religion on Control and Social Affiliation. Research presented at the *2nd World Congress of Cultural Psychiatry*. September 2009. Norcia, Italy.

Sasaki, J. Y., & Kim, H. S. Cultural Differences in Effects of Religious Coping on Social Affiliation and Control. Research presented at the *American Psychological Association Convention*. August 2009. Toronto, Canada.

Tan, S., & Sasaki, J. Y. How Maternal Employment and Family Income Influence Children's Social Competence. Research presented at the *86th Annual Western Psychological Association Conference*. April 2006. Palm Springs, California.

Sasaki, J. Y., Aldrich, K., & Kyger, M. California Paid Family Leave: Is It Working for Working Families? Research presented at the *Work & Families Conference*. March 2006. Claremont, California.

CONFERENCE POSTER PRESENTATIONS

Sasaki, J. Y., & Kim, H. S. Power moderates effects of implicit religious priming: Implications for political conservatism, environmental activism, and free speech endorsement. Poster presented at the *Society for Personality and Social Psychology Conference*. January 2011. San Antonio, Texas.

Sasaki, J. Y., & Kim, H. S. Benefits of Religious Coping Differ by Genes and Culture: An Analysis of Serotonin Receptor Polymorphism 5-HTR1A in European Americans and Koreans. Poster presented at the *2nd World Congress of Cultural Psychiatry*. September 2009. Norcia, Italy.

Sasaki, J. Y., & Kim, H. S. Effects of Culture and Religion on Control: Demonstrations in the Lab and Daily Life. Poster presented at the *Society for Personality and Social Psychology Conference.* February 2009. Tampa, Florida.

Sasaki, J. Y., & Kim, H. S. Cultural Differences in Daily Effects of Religious Coping. Poster presented at the *Society for Personality and Social Psychology Conference.* February 2008. Albuquerque, New Mexico.

Sasaki, J. Y. False Confessions: The Effects of Religiosity, Spirituality, Forgiveness, and Confession Type on Verdicts. Poster presented at the *86th Annual Western Psychological Association Conference*. April 2006. Palm Springs, California.

Sasaki, J. Y. Spirituality and Its Predictors. Poster presented at the *86th Annual Western Psychological Association Conference*. April 2006. Palm Springs, California.

Sasaki, J. Y., & Sanders, M. The Cross-Cultural Influence of Collectivism on Religiosity and Spirituality. Poster presented at the *Society for Personality and Social Psychology Conference*. January 2006. Palm Springs, California.

PROFESSIONAL SERVICE

Reviewer (ad hoc)

International Journal for the Psychology of Religion
Journal of Personality and Social Psychology
Journal of Pragmatics
Journal for the Scientific Study of Religion
Personality and Social Psychology Bulletin
Psychologia

University Committee Member

University of California, Santa Barbara

Graduate Student Association representative	2009 – 2010
Social Psychology Colloquium organization committee	2009 – 2010
Psychology Department Convention organization committee	2008 – 2009

PROFESSIONAL SKILLS

Hierarchical Linear Modeling
SPSS and Amos
MediaLab and DirectRT
DNA extraction and genotyping

AFFILIATIONS

American Association for the Advancement of Science	2011 – present
American Psychological Association	2009 – present
Society for Personality and Social Psychology	2005 – present
Psi Chi, National Honor Society in Psychology	2003 – 2006

ABSTRACT

Religion Is What Individuals and Societies Make of It: Moderators of Religion's Effects at the Level of Person, Situation, and Culture

by

Joni Yoshiko Sasaki

Although religion can be found in some form across every human culture, the way it impacts people's thoughts and behaviors may vary in systematic and important ways. In three sets of studies, I examine how religion's effects on psychology may vary according to key moderators at the broader level of culture or the situation and at the more specific level of the individual. First, in Studies 1–3, I demonstrate that religious values and the way people use religion to cope with difficulties may vary depending on the larger cultural context. Next, Studies 4–7 show that religious practices or thoughts may be linked to more conservative political beliefs, but largely for those who are powerful rather than powerless. Finally, in Study 8 I show that the effect of religious thoughts on prosocial behavior may be moderated by a genetic predisposition to environmental sensitivity. Using multiple methods, including content analysis, daily diary, priming techniques, and worldwide surveys, as well as diverse perspectives, such as cultural and social psychology and genetics, I first aim to examine how religion's influence can be moderated by culture, power, and genes.

Second, I provide a working theoretical framework for understanding past research on religion and building new investigations on the topic, and in so doing, I hope to demonstrate that religion can be conceptualized in multiple ways and should thus be studied from different perspectives. Finally, I discuss implications for both the benefits and detriments of religion—a phenomenon that ultimately transpires in the context of a society and in the minds of individuals.

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CHAPTER I

Introduction:

What Is Religion and How Can It Be Studied Scientifically?

To say that religion has had a significant impact on the world is quite the understatement. From the Crusades of the Middle Ages to the Israeli–Palestinian conflict of modern times, religion has had an undeniable influence at many levels. At the level of the individual, religious people may use their faith as a worldview that ultimately guides their interactions with others and provides particular meanings to their experiences (e.g., Pargament, 1997; Spilka, Hood, Hunsberger, & Gorsuch, 2003). Even for those who do not subscribe to a religious faith, thoughts of religion or God may impact them unknowingly, through socialized religious associations (e.g., Weisbuch-Remington, Berry Mendes, Seery, & Blascovich, 2005) or as a by-product of evolved psychological tendencies (e.g., people have the cognitive ability to detect the thoughts or intentions of others, which may then be overextended to infer the thoughts or intentions of supernatural beings; Boyer, 2003; Norenzayan & Shariff, 2008). At the societal level, nations with difficult living conditions, such as lower industrial development and greater income inequality, tend to have populations that are especially religious (Norris & Inglehart, 2004), and in these nations, religiosity may make people happier by providing them with certain tangible and psychological needs (Diener, Tay, & Myers, 2011). Indeed, research at both individual and societal levels of analysis have made the very first basic steps toward understanding what religion is and how it might influence people, and furthermore, these first steps have been integral in moving investigations of religion more toward the forefront of scientific inquiry.

Yet, given that religion is a phenomenon experienced by individuals within a specific context, religion's influence on thought and behavior may not be monolithic. While most past investigations have conceptualized religion as having widely shared meaning and thus largely uniform effects and interpretations, my perspective is that the impact of religion may be moderated by particular aspects of the person, the social situation, and the broader cultural context. Motivated mainly by perspectives from social and cultural psychology, but also with considerations from genetics, I aim to contribute to a more nuanced understanding of religion's influence on human psychology via empirical evidence on some key moderators. In particular, the main goal of this body of research is to move beyond descriptions of *what* religion does toward a more specific account of *when* or *where* religion has *what* effect to *whom* and *why*.

To be sure, the flow of research on religion within mainstream psychology has been noticeably increasing in recent years such that, even compared to just a decade ago, the body of known general effects of religion has grown quite large. But now the psychology of religion must move beyond general effects. The current state of this research area is such that empirical findings have begun to slightly outstep the bounds of theory. If psychology is to achieve a more complete picture of how religion influences people's thoughts and behaviors, then it may be necessary to take a more integrated and structured approach to examining the topic of religion.

Here I specify two crucial needs for advancing the psychology of religion. First, there is a need for more basic theorizing on how religion can be conceptualized

in different ways. Based on these various conceptualizations, there needs to be more structure in place for piecing together pre-existing knowledge and launching new empirical investigations. The second need, then, is for a theoretical framework with which to examine religion and its consequence for human psychology so that scientists can work toward a more coherent and accurate understanding of this topic. Therefore, in addition to offering new empirical investigations that can broaden our understanding of religion and qualify its effects, a key goal of this research is to provide a working theoretical framework for conceptualizing religion and studying its effects on human behavior. My hope is that, together with my empirical evidence, this framework will serve as a starting point for scientists to pull together seemingly disparate effects in the psychology of religion and also fill in critical gaps that are currently unknown.

What Is Religion?

Religion is a topic, not unlike many others that are prominent in psychology—culture, motivation, love, attention, and consciousness among them—about which everyone can easily discuss and yet no one can concretely define. If there is no consensus on how these topics are defined, then should all relevant scientific investigations come to a halt until the definitional details are ironed out? Probably not. Of consciousness, Dr. Michael Gazzaniga, one of the leading experts on the topic, suggests that scientists need not come to a consensus on its precise definition before making important progress on the topic. He instead argues for the use of working definitions as science continues to move forward, saying: "You don't waste

your time defining the thing. You just go out there and study it" (Ledford, 2008, p. 1028). And so it must be with religion, a topic that has been defined in various ways over many centuries and continues to be redefined still today even though its roots are surprisingly old.

Historical Roots of Religion

Some form of religion can be found across all human cultures (Atran & Norenzayan, 2004; Boyer, 2003), and in fact, it may be one of the oldest forms of large-scale social interaction, dating as far back in history as 9600 BC, as evidenced by the discovery of the religious temple site Göbekli Tepe (Mann, 2011, June). To put this date and discovery in perspective, the religious rituals at this site (and other sites like it) appear to pre-date, and may have even led to, the start of early agriculture in large groups. In this way, religious practices may have signaled the shift from hunter–gatherer bands to farming villages that occurred over the span of thousands of years. More basic religious beliefs and practices go back much further than that, with the earliest evidence being the use of spiritual symbols in burial rituals, about 75,000 years ago. The roots of religious concepts and behaviors may thus be considerably older than many people think, certainly older than the early writings of the Torah and older still than the earliest known religious texts of Ancient Egypt. Throughout history, philosophers and scientists alike have offered countless definitions of what religion exactly is (Martin, 1987; Pyysiäinen, 2001), and people of course disagree on the best working definition (Kirkpatrick, 1999), but here I identify some of the key

components of religion that seem to appear across multiple definitions and fields of inquiry.

A Working Definition of Religion

Perhaps the most central aspect of religion about which people tend to agree is the concept William James (1902, 1963) labeled "the divine": notions of the supernatural, or things that cannot be explained by the natural laws of physics, such as gods, spirits, magic, and like concepts (Lowie, 1952; Norbeck, 1961; Radin, 1957). Instances of these core "religious" ideas include but are not limited to: the belief that a supernatural being *itself* has beliefs, intentions, or desires (which is perhaps an overextension of "theory of mind, "the general ability to infer mental states; Boyer, 2003), the belief that certain objects, events, or times are inherently sacred and maintain properties or behave in ways that are supernatural (Pargament, 2002), and the belief that supernatural beings have privileged mastery over existential anxieties such as pain and death (Atran & Norenzayan, 2004). Surrounding this core notion of the supernatural, religion seems to also involve ritualized practices and experiences that are shared in close fellowship with others (Atran & Norenzayan, 2004; Durkheim, 1912, 1995; Pargament, 2002). That is, religious people tend to engage in repeated symbolic behaviors directed toward supernatural beings, and they perform these acts in coordination with people who share these religious experiences. In addition to ritualistic behaviors, religion tends to demand "costly signals" of commitment to one's beliefs, requiring members to publicly demonstrate their loyalty by making costly sacrifices of material goods, time, and energy (Atran &

Norenzayan, 2004). Taking these different components together, religion may be roughly defined as a set of ritualized practices and experiences shared in an committed fellowship and centered around notions of the supernatural or divine.

As some researchers have previously argued, "religion," as it is commonly understood and defined, may not be of a natural kind for psychology (Boyer, 2003; Boyer & Bergstrom, 2008). That is, it is unclear that demarcating certain phenomena as *religious* versus *non-religious* would adequately resemble "carving nature at its joints," as Plato would have urged. It is possible that what people typically consider to be religion is actually a fuzzy set of separate psychological tendencies or behaviors that tend to go together but do not necessarily go together (Bloom, 2012). Yet the fact that these components typically go together is notable, and the issue of religion as a natural kind is one that awaits clarification in future investigations. For now, suffice it to say that there is enough of a working definition to permit scientific progress on the topic of religion.

Conceptualizations and Investigations of Religion in Psychology

In mainstream social psychology, there are a number of different ways in which researchers have conceptualized and studied religion. No one conceptualization takes precedence, and in fact, it may be crucial to understand multiple conceptualizations in order to understand how religion impacts any given behavior. After first reviewing pre-existing ways of understanding religion, I then introduce a working theoretical framework, one that provides a basis for future research while

also organizing the current set of studies and pulling together past conceptualizations and investigations of religion.

Past Conceptualizations and Investigations

There are many ways to conceptualize religion, but most common is the conceptualization of religion as a system of beliefs, values, and practices at the level of the individual (e.g., Pargament, 2002; Tylor, 1871). Within this individual-centered understanding of religion, researchers have addressed questions of religion's influence by typically measuring belief in God, importance of religion in people's lives, and/or frequency of religious service attendance or engagement in activities such as prayer or worship (McCullough & Willoughby, 2009; Powell, Shahabi, & Thoresen, 2003; Preston, Ritter, & Hernandez, 2010). Similarly, religion can be conceptualized as a worldview or ideological system that helps people cope with personal threats. From this perspective, religion has been studied as a psychological defense mechanism that works in concert with other defenses to ultimately protect the psychological well-being of the self (Kay, Gaucher, Napier, Callan, & Laurin, 2008; van den Bos, van Ameijde, & van Gorp, 2006).

Yet religion has also been conceived as a force operating not entirely within the self by researchers who claim it is a form of culture (Cohen, 2009; Geertz, 1973). Given that the particular beliefs, values, and practices of one particular religious tradition (e.g., Judaism) can vary in important ways from other religious traditions (e.g., Protestantism or Catholicism), religion has been studied as a factor that moderates psychological processes (Cohen & Hill, 2007; Cohen et al., 2005; Cohen

& Rozin, 2001; Cohen, Siegel, & Rozin, 2003; Sanchez-Burks, 2002; Tsai, Miao, & Seppala, 2007). In this way, religion may impact people not only via individual beliefs, but also through a set of culturally shared norms within a particular religious group.

Additionally, researchers have studied religion as a concept that can be made situationally salient, demonstrating that thoughts of religion that arise from a particular situation can lead people to behave as if God or a supernatural being is watching them (Shariff & Norenzayan, 2007). Interestingly, religious salience can impact people's behaviors at times irrespective of their personal beliefs, and other times differently depending on their beliefs (see Study 1 vs. Study 2 in Shariff & Norenzayan, 2007). In sum, religion can be conceptualized as a phenomenon not only working within the individual, but also occurring in the larger cultural context and in specific situations.

A New Conceptualization of Religion and Working Theoretical Framework

Indeed, there are many ways to conceptualize and study religion, and each way can offer valid and important insights. The present investigation relies on several of these existing conceptualizations of religion to understand how it might ultimately impact human thought and behavior. However, a critical difference is that I conceptualize religion as not only *capable* of existing in multiple areas but also *inevitably* and *simultaneously*: 1) situated within the individual, 2) experienced in a situation, and 3) bound by the cultural context. This means that studying religion as a belief that exists within the individual should not assume that this religious belief is

independent of a particular situation or cultural context. In fact, one's religious belief may take on different meanings depending on the situation and the surrounding culture because the individual cannot be separated from the situational or cultural context. Likewise, studying religion as a form of culture that exists partially outside the individual should not assume that this religious culture is independent of aspects of the situation or characteristics of the individual. In reality, a religious culture is always perceived by the individual, with his or her own values or behavioral tendencies, and may also lead to different outcomes depending on the specific situation. Although religion can certainly be conceptualized in just one way for any particular investigation, it is important to understand that every specific way that is studied makes assumptions about every other way that was not studied.

The conceptualization of religion in the present investigation builds on past theories from personality, social, and cultural psychology explaining how human behavior in general might originate from dynamic interactions of the person, situation, and culture. In particular, Mischel and colleagues (1990, 1995) outlined the Person × Situation theory of personality and behavior, which addresses how two people may behave differently in the same situation and also how the same person may behave differently in two different situations. This theory critically argued that a person's behavior could not be understood apart from characteristics of the individual and the situational context, which is of course a core credo in social psychology. More recently, Leung and D. Cohen (2011) built on Mischel's theory by adding the variable of culture. In their Culture × Person × Situation (CuPS) approach, they argue

that culture is distinct from the person given that cultural differences are not reducible to individual differences (Na et al., 2010). Culture is also separate from the situation. Because situations are necessarily perceived psychologically, one cannot help but perceive them through the lens of culture, yet across different cultural lenses, even the same situation can take on different meanings. The CuPS approach may offer a more complete understanding of human behavior because it addresses (as in the Person × Situation approach) how different people behave differently in a given situation and a given person behaves differently in different situations, but on top of that, it addresses issues involving the additional layer of culture, such as how a given person in a given situation may behave differently from one cultural context to another.[1]

Building on the CuPS approach (Leung & D. Cohen, 2011), with its roots in the tradition of Person × Situation (e.g., Endler, 1975; Mischel, 1990; Mischel & Shoda, 1995), I provide a more detailed account of the dynamic interplay among person, situation, and culture in relation to behavior (see Figure 1). Within this framework, the person is always in a cultural context and thus has beliefs, affect, and values that are shaded to some degree by the lens of culture.[2] At the same time,

[1] For explanation of other Culture × Person × Situation permutations, such as how different people may behave differently in a given situation and culture, see Leung and D. Cohen (2011).

[2] "Lens" is used as a metaphor here for practical reasons so that culture can be described separately from the person and situation. However, this description is not meant to suggest that a person can completely remove the lens of culture and exist culture-free. Many cultural psychologists would argue that this is not possible and that culture and the self inevitably make each other up in mutual constitution (Kim & Markus, 1999; Kitayama, Markus, Matsumoto, & Norasakkunkit, 1997; Leung & D. Cohen, 2011; Markus & Kitayama, 2010). Although people can readily switch

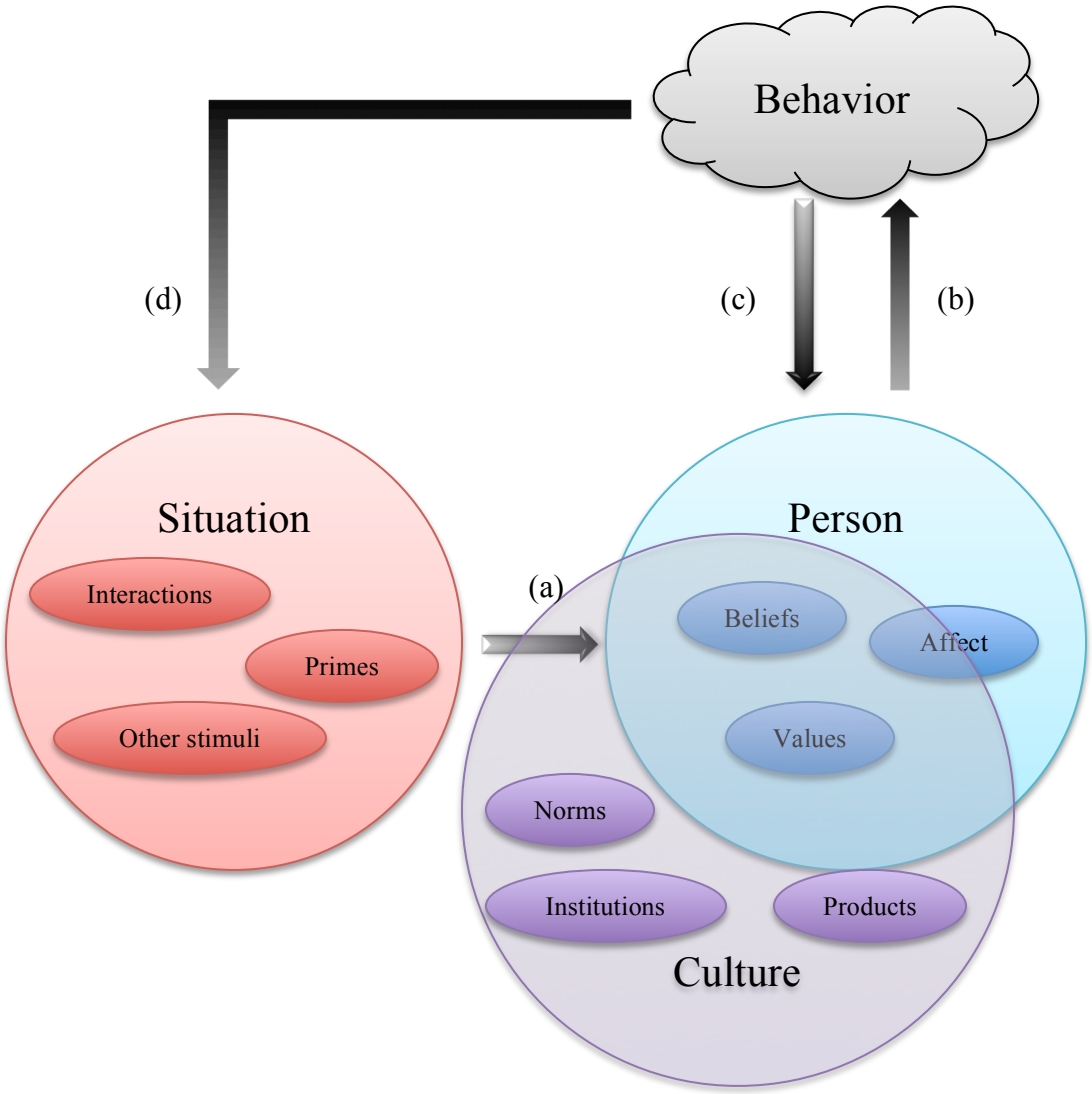

Figure 1. Working theoretical framework for studying the effect of religion on behavior based on past models of Culture × Person × Situation (Leung & D. Cohen, 2011) and Person × Situation (e.g., Mischel & Shoda, 1995), showing that (a) people are influenced by situations through culture, (b) behaviors are influenced by people, culture, and situations, (c) people in a culture are influenced by behavior, and (d) situations are influenced by behavior.

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between different cultural lenses or frames (e.g., Hong, Morris, Chiu, & Benet-Martínez, 2000), they are never left cultureless as they remove one cultural lens for another.

people experience different situations[3]—social interactions, primes, or other environmental stimuli—through their cultural lens (Figure 1, part a). Culture, with its specific norms, institutions, and products, interacts with personal characteristics and features of the situation in order to ultimately influence behavior. More specifically, the person is influenced by situations via culture, and any given behavior may then be influenced by culture via the person (Figure 1, part b). Behaviors can also impact aspects of the person in a culture (Figure 1, part c) and features of the situation (Figure 1, part d) in a cycle of influence.

I offer this theoretical framework as a foundation for piecing together pre-existing data, including those provided in the current investigation, and also for launching new empirical investigations on religion. This framework may be a useful thinking tool because it illustrates how religion can be conceptualized and studied in multiple ways—in the person, situation, and/or culture—and also shows how the effects of religion may not always be uniform, but rather, may critically depend on personal, situational, or cultural realities (See Figure 2). Imagine, for instance, that religion is conceptualized as a belief existing within the person in a particular scientific investigation (Figure 2, part a). The link between religious belief and the behavior of interest, say outgroup prejudice (Figure 2, part b), is necessarily shaded by cultural values, beliefs, and the carriers of culture (e.g., norms of intergroup trust, government institutions enforcing values; Figure 2, part c). Outgroup prejudice is

[3] It is important to note that the crucial aspects of the situation, as described by Mischel and Shoda (1995), are the psychological rather than literal.

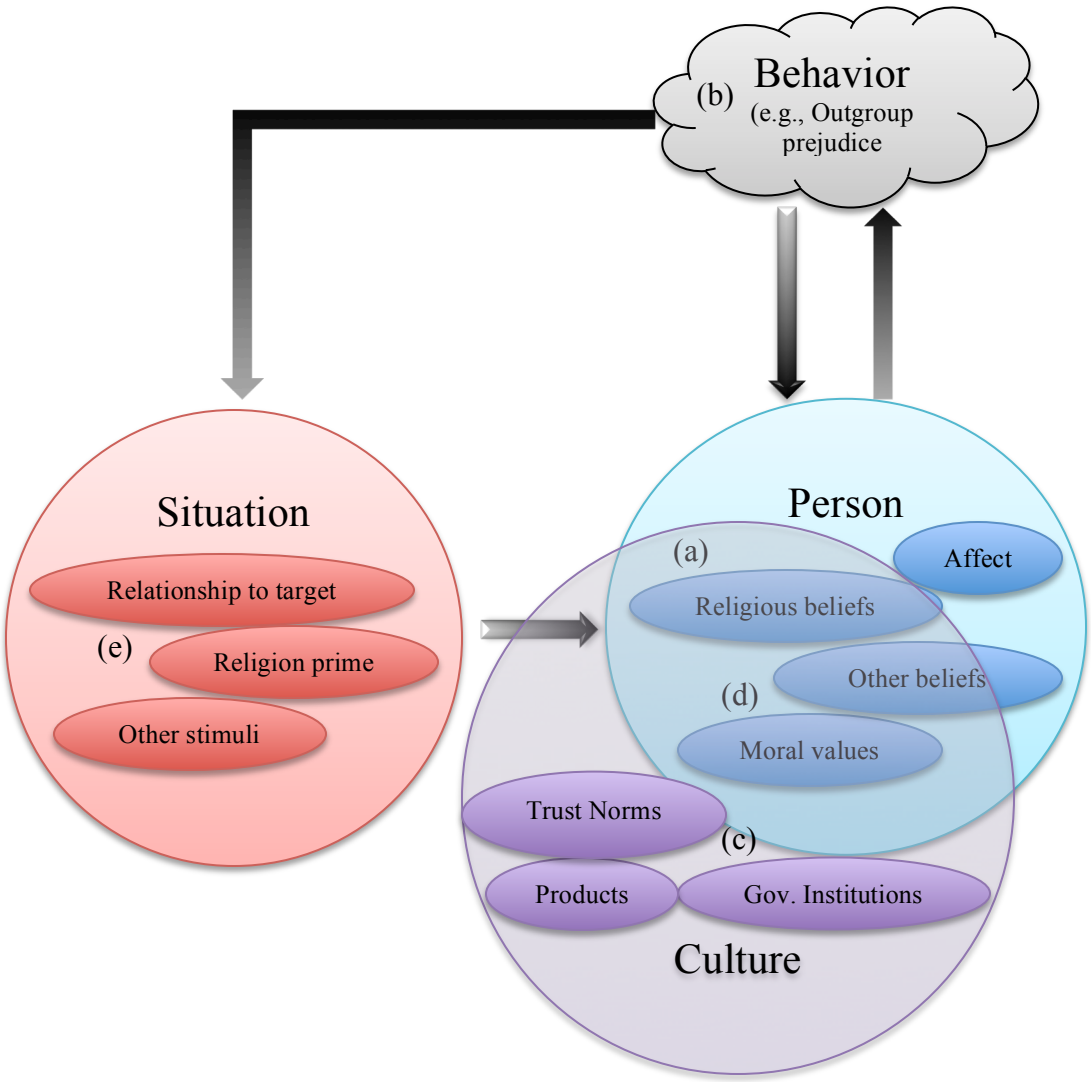

Figure 2. Example of the dependence of religion's effects on person, situation, and culture variables. Religion can be conceptualized as (a) religious belief affecting (b) behavior (e.g., outgroup prejudice). The effect of religious belief on behavior depends on (c) aspects of culture, (d) characteristics of the person such as moral values or other beliefs, and (e) features of the situation, such as relationship to the target in an social interaction and contextual priming of religion.

impacted by other aspects of the person (e.g., moral values or other beliefs not necessarily religious in nature; Figure 2, part d) and features of the situation (e.g., relationship to target person in intergroup setting, contextual prime of religion; Figure 2, part e), both of which can be influenced by culture. Outgroup prejudice can then have consequences for other aspects of the person in his or her culture and the features of situations. Studying religion as a belief in relation to outgroup prejudice necessarily makes assumptions about aspects of the person, situation, and culture that were not studied.

My approach is not to investigate all features of the person, situation, and culture at once. Rather, I propose that religion can be conceptualized as an aspect of the person and/or situation and/or culture across different investigations but that any single investigation may focus on one conceptualization of religion at a time. Multiple conceptualizations can then be considered in concert using this working theoretical framework as a base. By conceptualizing and studying religion in these different ways and relating the findings back to a central framework, the psychology of religion may make greater progress toward understanding how religion impacts people. More specifically, science may determine how religion can simultaneously have general effects—for instance, on health (Powell et al., 2003), political conservatism (Brint & Abrutyn, 2010), and prosocial behavior (Shariff & Norenzayan, 2007)—while also leading to unique outcomes depending on crucial moderators that capture characteristics of people, features of specific situations, and the norms of cultures.

Moderators of Religion's Effects

There are a number of factors that may be important to consider as potential moderators of religion's effects, but in the current investigation I highlight only a few, namely: culture, power, and genes. Moving from the broader context of culture to the situational context of power and, finally, to the more specific individual variable of genes, I show how moderators at the level of the culture, situation, and person can have consequence for the way religion influences people. Here I provide an overview of these different factors that includes: 1) how each factor is typically studied in psychology and 2) why each one is important to study in the first place.

Culture

Culture, or the human-made part of the environment (Herskovits, 1948), influences everyone, and everyone is necessarily a part of a larger culture. The mind is at once the creator and the creation of culture, and therefore, it is impossible to fully understand human psychology without understanding the culture it exists in and vice versa (H. Kim & Markus, 1999; Kitayama et al., 1997; see Markus & Kitayama, 2010 for review of the mutual constitution of culture and the self). Culture is perhaps one of the most powerful yet subtle sources of environmental influence in that it permeates everything that people do and think, but at the same time they are often as unaware of their culture as a fish is of water. Some may intuitively believe they are somehow not bound by culture and are independent of the broader norms or collective thoughts of others. Yet if you remove a fish from a river and place it in a lake, won't it then take notice of the water? If you were born and raised on a farm in

Iowa and then interrupted your life there to move to Tokyo, wouldn't you suddenly feel buried in a flurry of intricate rules about when to say or do what to whom? Wouldn't your own actions and thoughts seem strangely out of place in Tokyo, perhaps carrying different meanings from the same actions and thoughts you had in Iowa? At this point it may become clear to you that, beyond any differences in the language or the external appearance of the place, the *people* of Tokyo—the way they think and behave and their (often unspoken) reasons for doing so—differ in some profound and fundamental ways from you. Culture is powerful because it colors your every action and thought, yet it exerts its force subtly, largely unbeknownst to you.

Culture is critically important to consider because it guides even very basic actions and thoughts by adjudicating what is normative or appropriate to do or think. There are systematic differences in the way people across cultures understand the self (Markus & Kitayama, 1991), categorize objects and reason about contradiction (Nisbett, Peng, Choi, & Norenzayan, 2001), automatically shift attention in response to social cues (A. S. Cohen, Sasaki, H. S. Kim, & German, 2012), perceive fairness (Henrich et al., 2005), and seek social support to cope with stress (H. S. Kim, Sherman, & Taylor, 2008), among many other differences. Given that religion always transpires within a larger cultural context, it is possible that culture shapes the way even the same religion impacts people in certain contexts.

Power

Power is one of the basic forces existing in the dynamics of social life, often with important consequences for relationships (Fiske, 1993) and social situations

(Thibaut & Kelley, 1959). It is defined as the ability to control resources and outcomes for oneself or others, and in recent years, psychologists have demonstrated how power can have quite marked impacts on the way situations are perceived (P. K. Smith & Galinsky, 2010) and the way people think (P. K. Smith & Trope, 2006) and are motivated to act (Galinsky, Gruenfeld, & Magee, 2003; Guinote, 2007; see Keltner, Gruenfeld, & Anderson, 2003 for review). Power is a useful construct to consider from a social psychological perspective because many behavioral outcomes occur in the context of relationships, either interpersonal or intergroup in nature. Particularly for behavioral outcomes that appear to be linked to the different patterns of thought or motivation for high- versus low-power individuals, it may be important to test whether power functions as a moderator of religion's effects.

Genes

In addition to studying factors that exist in the broader context or in relationships between individuals or groups, it is important to consider how religion's influence may vary according to factors existing within the person, such as genes. Individual variation in genes is perhaps one of the fastest growing biologically relevant factors to be studied in the field of psychology. As illustrated in Figure 3, the past dozen years has seen more genetics research in psychology than practically any other biological method or measure, including functional magnetic resonance imaging (fMRI), electroencephalography (EEG), hormones, heart rate, and galvanic skin response (GSR). Popular as genes have become in psychology, the state of genetics research is such that it is becoming increasingly difficult for basic science to keep

pace with technological advances. Since the completion of the Human Genome Project in 2003, scientists have been hurriedly digging through the treasure trove of human DNA, searching for any sign of genetic answers to questions like: "Why do some people despise cilantro?" and "Are my children predisposed to autism?" As evidenced by the vast number of publications in psychology that have incorporated genes in recent years, psychologists are clearly among the most eager in the quest to understand what it all means. Yet genetic answers to questions of human behavior are rarely simple ones.

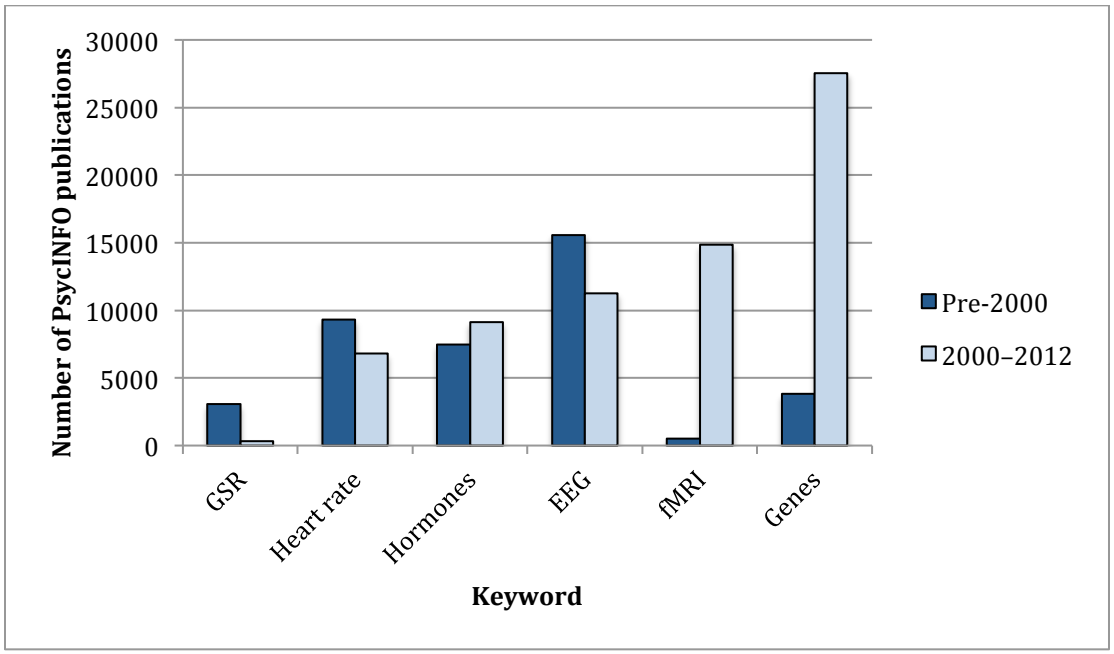

Figure 3. Number of publications listed in PsycINFO for biologically relevant methods or measures pre-2000 and from 2000–2012.

The year 2003 was a seminal year for genetics, not only due to the mapping of the human genome, but also because of a single paper that seemed to offer an elegant,

nuanced approach to behavioral genetics. In their paper on the link between genes, stress, and depression published in *Science*, Caspi and colleagues (2003) demonstrated a striking effect that rang true to so many personality and social psychologists: that some aspect of the person (in this case, a genetic predisposition to stress reactivity) interacted with something about the situation (frequency of stressful life events) to impact behavior (depressive symptoms and clinical diagnosis of depression, among other outcomes). This framework of Gene × Environment interaction (G × E) fit nicely with the Person × Situation approach because they both address the questions of why two people with different genetic predispositions may behave differently given the same situation and why the same person with a given genetic predisposition may behave differently across two different situations. Caspi's 2003 finding set the stage for countless subsequent investigations on gene–environment interactions.

Though not without its limitations (Munafò & Flint, 2009, 2011; Risch et al., 2009; but also see Karg, Burmeister, Shedden, & Sen, 2011), G × E is a promising new research direction with great potential for answering important questions in psychology. Already, numerous investigations in psychology have demonstrated that features of the environment may interact with genes to influence psychological outcomes, including stress and health (Taylor et al., 2006; Way & Taylor, 2010), social support seeking (H. S. Kim et al., 2010b), emotion regulation (H. S. Kim et al., 2011), and prosocial behavior (Bakermans-Kranenburg & van IJzendoorn, 2011; Knafo, Israel, & Ebstein, 2011), and in addition, some researchers have argued for the

existence of susceptibility or plasticity genes which predispose people to be sensitive to certain environmental inputs (Belsky, Bakermans-Kranenburg, & van IJzendoorn, 2007; Belsky et al., 2009; Obradović & Boyce, 2009). Given that religion can be conceptualized as an environmental or situational force (e.g., Shariff & Norenzayan, 2007), individual differences at the level of genes may moderate the extent to which people are influenced by religion. Indeed, examining genes as a potential person-level variable may be a worthwhile endeavor for religion research.

Overview of the Current Investigation

The main thesis of the current investigation is that religion always transpires within a situation and larger cultural context and through the mind and body of the individual, and thus, religion may have divergent effects on behavior depending on certain moderating factors existing in these different levels. Yet the number of conceivable moderators for any individual effect can be quite large. Given that it is difficult for the human mind to understand more than one or two moderating factors at a time, it may often be necessary to narrow the focus of any single scientific investigation. That is, rather than incorporating dozens of factors into any one study, a more realistic and effective approach may be to identify one or two promising moderators per study. Then once a number of key moderators have accumulated on a particular topic, scientists can begin to tie different investigations together using the working theoretical framework described above. Here I suggest a few important questions for investigators to address in order to identify factors that may moderate religion's effects on a particular behavior:

(1) What is the expected influence of religion on a behavioral outcome based on known biological or social considerations?

(2a) Is the behavioral outcome critically linked to a key factor located in the person, situation, or broader culture such that religion's influence on the outcome may be strengthened or attenuated?

and/or

(2b) Does a key factor make people differentially susceptible to the influence of religion in general?

As an example, an investigator may expect that religious beliefs lead people to agree more with counterfactual or conflicting statements based on theorizing from evolutionary and cognitive perspectives (e.g., Boyer, 2003) (Question 1). There are also known cultural differences in reasoning about contradictions such that people from East Asia tend to more easily reconcile contradictory statements compared to people from North America (Peng & Nisbett, 1999) (Question 2a), and in addition, individual differences in cognitive style are linked to religious belief such that people who think more intuitively tend to have stronger religious beliefs (Shenhav, Rand, & Greene, 2011) (Question 2b). Therefore, culture and cognitive style may be promising moderating factors to consider in an investigation of religious beliefs and counterfactual thinking. That is not to say that these would be the only moderators,

but they are likely to be important ones. Importantly, one must draw on multiple theories and empirical findings specific to the behavioral outcome and/or moderator(s) of interest in order to adequately address the two questions presented above.

In the present research, I examine classic topics in social psychology, including coping responses and values, politics, and prosocial behavior, to demonstrate how religion can have varying impacts on these different outcomes depending on aspects of the person, situation, or culture. Based mainly on theories and perspectives from social and cultural psychology, I investigate a number of key factors that may act as moderators of religion's effects on these outcomes. First, in Chapter II, I examine how culture may moderate religious values and the way people use religion to cope. Next, in Chapter III, I demonstrate that the link between religion and political conservatism may differ depending on one's position or mindset of power. In Chapter IV, I show that priming the concept of religion may increase prosocial behavior for people with certain genetic predispositions more than others. Finally, in Chapter V, I discuss how different conceptualizations of religion and the consequences of religion for behavior build on the working theoretical framework presented in Chapter I, and I present new theoretical and practical implications of this research. The overarching goal of this research is to demonstrate that religion must be conceptualized in multiple ways and thus studied from different perspectives and that the way religion ultimately affects behavior depends critically on dynamic interactions among the person, situation, and culture.

CHAPTER II

At the Intersection of Culture and Religion:

A Cultural Analysis of Religion's Implications for Secondary Control and Social Affiliation

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Imagine two religious gatherings: one, an evangelical outreach at a stadium in Houston, Texas, and another, a mega-church service in the heart of Seoul, South Korea. These two communities may share the same Christian faith founded on the same religious text, but is religion, in each of these cultures, experienced in the same way? Beyond the obvious differences in worship style or venue may lie deeper disparities. In one culture, religious messages may emphasize spiritual growth in the individual, while in the other, strength of the community may be the focus. Just as religion has played a role in the development of cultures through traditions and ideologies (e.g., Weber, 1904/1930), culture may act as a frame through which religion is made meaningful.

Religion is found, in some form, across all human cultures (Atran & Norenzayan, 2004; Boyer, 2003) and carries countless definitions across fields of inquiry (Martin, 1987; Pyysiäinen, 2001). Some of the key components of religion include highly committed, ritualized practices and beliefs shared within a community and centered on mental representations of the supernatural or divine (Atran & Norenzayan, 2004; James, 1902/1963; Pargament, 2002). In studying the phenomenon of religion, it can be conceptualized as a specific form of culture (A. B. Cohen, 2009) or a way to categorize distinct cultural practices (e.g., Judaism and Christianity: A. B. Cohen & Rozin, 2001; Catholicism and Protestantism: Sanchez-Burks, 2002; see A. B. Cohen, 2009 for a review). Yet, religious beliefs and practices transpire within the context of national culture, and even the same religious teaching can manifest itself in different ways across these cultural contexts. Therefore, a

critical task is to determine how culture may shape individual psychological experiences and collective expressions of religion.

In the current research, we address the question of how culture shapes the effect of religion on psychology by examining cultural products and analyzing behavioral responses in the laboratory and in daily life. In so doing, we consider two of the possible effects of religion—secondary control and social affiliation—at both collective and individual levels of analysis, drawing from a cultural psychological perspective, to examine how religion can lead to divergent psychological effects in North American and East Asian cultural contexts.

Religion Promotes Secondary Control and Social Affiliation

Control may be one pathway through which people benefit from religion (e.g., George, Ellison, & Larson, 2002; Krause, 1992; Spilka et al. 2003), and research suggests that control can take two forms: primary and secondary control. While both forms of control involve active agency, primary control refers to the attempt to influence the external environment according to the self's needs, whereas secondary control refers to the attempt to adjust part of the self to accept the situation (Morling, Kitayama, & Miyamoto, 2002; Oerter, Oerter, Agostiani, Kim, & Wibowo, 1996; Weisz, Rothbaum, & Blackburn, 1984). Although religions may recruit varying amounts of primary and secondary control across situations, psychologists have theorized that religions emphasize mostly secondary control, as they endorse alignment of the self to a god or spiritual force and acceptance of circumstances as core principles (Spilka et al., 2003; Weisz et al., 1984). In addition, empirical

research has shown that religious coping strategies predict positive psychological outcomes, with the most beneficial form being "collaborative" religious coping, or trying to gain a sense of control by believing that one shares responsibilities of solving a problem with God (Pargament et al., 1999). A recent review also concluded that religion promotes greater self-control, or the ability to override an initial inclination in order to achieve another desired goal (McCullough & Willoughby, 2009). It seems that, overall, religion may have the beneficial effect of increasing secondary control, allowing people to accept the situation and adjust the self by exerting greater control over their own behaviors.

Besides helping individuals to gain a sense of control, religion seems to carry socially relevant advantages. By encouraging fellowship with others and formal involvement in other social activities (Y. Y. Chen & Contrada, 2007), religious communities may offer members the benefits of social ties and increased social support to help them cope with mental and physical stress (George et al., 2002; Hill & Butter, 1995; Rogers, 1996; Seybold & Hill, 2001). For example, one study on the relationship between social ties and mortality showed that membership in a church predicted longevity, while membership in other types of groups (e.g., labor, political, service) was not significantly related to mortality risk for the elderly (Seeman, Kaplan, Knudsen, Cohen, & Guralnik, 1987). High levels of social support from religious involvement may also be associated with reduced cardiovascular reactivity, which is linked to lower risk of cardiovascular mortality (Y. Y. Chen & Contrada, 2007). Thus, it seems social affiliation—drawing on a social support network and

gaining a sense of belonging to a community—is also an important outcome of religious involvement. However, research on how religion relates to secondary control and social affiliation has been conducted primarily in North American cultural contexts, and most of these studies assume the impact of religion to be largely universal. Therefore, an interesting question is whether culture may moderate the effects of religion on the use of secondary control and social affiliation.

Cultural Shaping of the Role of Religion

Whereas religion can be conceptualized as a form of culture because it is a unified system of beliefs and practices that varies across different religious traditions, religion uniquely focuses on relationships with the divine and faith (A. B. Cohen, 2009). While we acknowledge the conceptual overlap between culture and religion, we distinguish religion and culture in the present research. Rather than focusing on religion as a form of culture and on the content of its teaching and practices, which could vary from one group to another, we focus on the concept of religion as an overarching system of beliefs and practices concerning the supernatural. In contrast, we conceptualize culture as a meaning system in which psychological processes are configured differently across nations (Kitayama, 2002), and thus, as a context in which religion takes place.

Historically, there have been many instances of religion being shaped by the cultural context. For example, qualitative research in religious studies has shown that mainstream American values, such as independence and personal choice, have influenced the way Christianity is practiced in the United States today (Wolfe, 2005).

This is an instance of one religion—in this case, Christianity—taking on the meanings of a particular culture and incorporating the needs and values of that group. However, the cultural shaping of religion has yet to be demonstrated empirically in psychology.

A cultural psychological perspective may offer some important insights for understanding how the influence of religion on secondary control and social affiliation may vary systematically by culture. For instance, people typically hold a more independent view of the self in more individualistic cultures, such as in North America. This view posits that the self is unique and separate from social surroundings (Markus & Kitayama, 1991) and places a strong emphasis on personal choice (Iyengar & Lepper, 1999; Savani, Markus, & Conner, 2008) and self-focused agency or control (Markus & Kitayama, 2003). On the other hand, people commonly hold a more interdependent view of the self in more collectivistic cultures, such as in East Asia. According to this view, the self is inherently connected to others, and value is placed on obligations and harmony in social relationships more than on personal agency (Markus & Kitayama, 1991; J. G. Miller, Bersoff, & Harwood, 1990).

Consistent with the idea that personal agency and choice are particularly relevant in more individualistic cultural contexts (Markus & Kitayama, 2003; Savani et al., 2008), control may also be more relevant for those with independent than interdependent self-construals, whereas social affiliation may be emphasized more than control for people with more interdependent self-construals. Although research on culture and control has shown that East Asians tend to emphasize secondary

control more than primary control and vice versa for European Americans (e.g., Morling et al., 2002), there is other research to suggest that, in certain contexts, East Asians may prefer coping styles that are centered on social relationships over secondary control, whereas European Americans may prefer secondary control over social coping. For example, in a study of pregnant women, cultural differences emerged such that European Americans tended to use more individual-focused coping strategies, such as secondary control, or acceptance (e.g., coming to terms with weight gain resulting from pregnancy), as a way to cope with the stressors associated with pregnancy. On the other hand, Japanese tended to use social coping strategies, or taking comfort in the influence of close others, more than individual-focused coping strategies, including secondary control (Morling, Kitayama, & Miyamoto, 2003). It seems that control, whether by asserting personal influence or accepting the situation, may not be as central a concern for people from more collectivistic cultures. Rather, maintaining positive relationships with close others may be a greater priority.

Considering these cultural differences, we examine whether religion, as a specific set of beliefs and practices, will exert influences on psychology that are consistent with the patterns of beliefs and practices that exist within larger cultural contexts. A relatively strong cultural emphasis on control in individualistic cultures and on social relationships in collectivistic cultures should implicate the meaning and effect of religion in these cultures, and this difference should be observable in many aspects of life, such as in cultural products and individuals' thoughts and actions.

Overview

Culture can be studied at different levels, from a more collective level examination of cultural products or practices (e.g., Morling & Lamoreaux, 2008) to a more individual level analysis of psychological processes and behaviors (e.g., Markus & Kitayama, 1991). As multiple levels of analysis may allow for a clearer understanding of the mutual constitution of culture and psyche (H. Kim & Markus, 1999; Kitayama et al. Norasakkunit, 1997), the current investigation examined how culture shapes the effect of religion on secondary control and social affiliation at both an individual and a collective level.

First, in Study 1, we conducted a content analysis of church mission statements to examine collective representations of religious values and beliefs. In so doing, we aimed to measure at least one aspect of cultural contexts in which individuals' psychological processes take place, and to show that the proposed culture-specific function of religion is shared within each cultural community. In Study 2, we examined whether experimentally priming religion impacts behavioral manifestations of secondary control and how this effect may be moderated by culture. In addition to understanding the causal relationship, our goal in this study was to examine how the culture-specific function of religion apparent in cultural products, such as church mission statements, manifests itself behaviorally in a social situation. In Study 3, we utilized daily diary methods and examined how culture may impact the relationship between religious coping and the use of secondary control-related coping or social coping strategies in daily life, generalizing the findings from Study 2.

Based upon cultural psychological theory on self-construal (Markus & Kitayama, 1991), we predicted that religion would be more strongly associated with exercise of secondary control among those from more individualistic cultures (i.e., European Americans) than among those from more collectivistic cultures (i.e., Koreans and Asian Americans), and this cultural pattern should be evident across different levels of analysis that are employed in our three studies. Considering past studies on religion and social affiliation conducted in North America, we predicted that religion would be associated with stronger social affiliation in both American and East Asian cultures across our three studies as well; however, we predicted that maintaining social relationships in a religious community would be even more important for people with East Asian compared to European American cultural backgrounds.

Study 1: Content Analysis of Values on Church Websites

In our first study, we used Korea and the United States as comparison groups to examine differences in culturally shared values of control and social affiliation in the context of religion. Christianity is the most highly represented religious group in Korea, with about a third of the population identifying as Christian (Korea National Statistics Office, 2005, as cited in K. Kim, 2007), giving this country the highest Christian representation per capita in East Asia. Likewise, the United States is the most religious industrialized Western nation, and those who are religious largely identify as Christian (Pew Forum, 2008). Thus, we focused our examination primarily on the impact of Christianity, as this is a religion that is well represented in both mainstream American and East Asian cultural contexts.

In order to investigate cultural differences at the collective level, past research has examined themes in magazine advertisements (H. Kim & Markus, 1999) and in popular music lyrics (Snibbe & Markus, 2005) as meaningful public representations of cultural values that offer a more complete understanding of divergent cultural models (Morling & Lamoreaux, 2008). In the present study, we conducted a content analysis of church websites as cultural products, as they are publicly shared venues for a mission statement of the church's values and practices (K. Kim, 2007; Sturgill, 2004) and are ubiquitous in both the U.S. and Korea (e.g., P. Kim, 2006; Rhee & Kim, 2006; Stevens, Dunn, Loudon, & Cole, 2002).

Study 1 examined how culturally shaped religious teachings may manifest themselves in cultural products (i.e., online church mission statements) in European American and Korean cultural contexts. Given past research on religion conducted mainly in North American cultural contexts, we predicted that U.S. church mission statements would emphasize themes of secondary control, such as spiritual and personal growth and acceptance, more strongly than Korean church mission statements. In contrast, we predicted that Korean church mission statements would focus more on themes of social affiliation, such as increasing and maintaining close ties within the church community, compared to U.S. church mission statements.

Method

Materials. Our content analysis included websites from Presbyterian and Catholic churches in the U.S. and Korea. Catholics form the largest unitary denomination in the U.S. (23.9% of total American population; Pew Forum, 2008)

and also have the largest representation among Korean Christians (10.9% of total Korean population; Korea National Statistics Office, 2005, as cited in K. Kim, 2007). As Protestantism is much more heterogeneous than Catholicism, we focused on Presbyterian churches. Presbyterianism is the largest Protestant group in Korea and was introduced primarily by American missionaries in the 19th century (Hwang, 2007), making it a good group for comparison between cultures. Presbyterian churches also have a sizable representation in the U.S. (about 10% of mainline Protestant churches; Pew Forum, 2008).

We obtained U.S. church website URLs from the "Big Church Directory" (http://www.bigchurchdirectory.com) and the "Open Directory Project" (http://www.dmoz.org/Society/Religion_and_Spirituality/Christianity/Denominations) and Korean church websites URLS from the most commonly used Korean search portal "Naver," which has an internal index of churches by denomination (http://dir.naver.com/Culture_and_Art/Religion). Presbyterian and Catholic church website URLs were then compiled into separate numbered lists for the U.S. and Korea, and only website URLs which were working and linked to individual church websites were included in our church lists. Following stratified sampling techniques, we used a random number generator to select 50 websites at random from each of the church lists, yielding a total of 200 websites (50 U.S. Presbyterian, 50 U.S. Catholic, 50 Korean Presbyterian, 50 Korean Catholic) for our analysis.

Coding scheme. The main coding was binary (present or absent) such that coders determined whether or not church mission statements contained certain

characteristics, which were combined into the broader themes of secondary control or social affiliation. The mission statement characteristics grouped in the secondary control theme were: emphasizing growth or maturity in spiritual life by bettering the self and mentioning acceptance,[4] as these concern the importance of actively adjusting or changing oneself to better align with God's will. The characteristics grouped in the social affiliation theme were: emphasizing closeness or knowing people intimately within the church, encouraging people to spend time and participate in social activities with others in the church, and mentioning a connection to other believers (see Table 1 for grouping of characteristics within each theme and examples).

Procedure. A total of four undergraduate research assistants coded the websites for this study. Two American students, one European American and one multiracial Latino/European American, at a university in California coded the U.S. websites. Two Korean visiting students from a Korean university who were fluent in both Korean and English coded the Korean websites. American and Korean coders were all born and raised in their respective countries and only coded websites from their own culture, as suggested by previous research comparing cultural artifacts

[4] The word "acceptance" in this context can have multiple meanings depending on how it is used. For example, it can mean that the individual or community has accepted Christ, which is consistent with secondary control, or that Christ has accepted them, which is not necessarily consistent with secondary control. In the present coding, "acceptance" is in line with the former meaning, which indicates secondary control.

Table 1

Mission Statement Characteristics and Examples within Themes of Control and Social Affiliation (Study 1)

Control theme	Social affiliation theme
Characteristics	
Emphasizing growth or maturity in spiritual life by bettering the self	Emphasizing closeness or knowing people intimately within the church
Mentioning acceptance	Encouraging people to spend time and participate in social activities with others in the church
	Mentioning a connection to other believers
Examples	
"To provide opportunities for Christian nurture, care and spiritual growth."	"By intentionally forming and being in holy relationship with Christ and each other."
"To provide an atmosphere of love and acceptance."	"To pray together and celebrate as a community every day throughout the week."
"Living a mature life as a disciple (제자로서 성숙한 생활을 합니다)."	"Forming a loving fellowship among people (사랑이 넘치는 성도간의 교제 형성)."

(e.g., H. Kim & Markus, 1999).[5] An American graduate student used the same coding instructions to train American coders and Korean coders separately. Originally

[5] We used this coding method because being born and raised in their native country provides coders with a more nuanced understanding of cultural meanings in the language. Those who were not born and raised in that culture, but are nonetheless fluent in the language, may not perceive these subtleties. However, given that this method of coding confounds the coder's culture with the culture of the coded material, it is difficult to determine whether results reflect cultural differences in the

written in English, the coding instructions were translated into Korean by a Korean-English bilingual and then back-translated into English by an independent Korean-English bilingual. All coders were instructed to code the section of the church websites labeled "mission statement" or the equivalent (e.g., "church vision," "core values," etc.). Coders were unaware that the study involved coding websites from a culture other than their own and were unaware of the hypotheses.

Results

Coder reliability. Calculating inter-coder reliabilities within each culture produced a high percentage of agreement between Korean coders (97.08%) and U.S. coders (92.08%). Within each culture, any disagreement between the two coders was resolved by a third same-culture, independent coder.

Cultural differences in church mission statements. In order to address our hypothesis, we examined differences in secondary control or social affiliation themes present in U.S. and Korean church mission statements. For the analyses, each theme was rated as "present" if the mission statement contained at least one of the specific characteristics within a given theme.

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material or in the coders' perceptions. To address this issue, we had a representative subset of the U.S. church mission statements (20 Catholic and 20 Presbyterian) coded by a Korean coder who was fluent in Korean and English, and the percentage of agreement between the Korean coder and the U.S. coders was acceptable (74%). Examining the direction of error revealed that the Korean coder tended to code themes as "present" more often than the U.S. coders overall, suggesting that our findings are more likely to be a reflection of cultural differences in church mission statements rather than coder perceptions. Additionally, we conducted chi-square analyses of the main results using the Korean coder's ratings in place of the original U.S. coders' ratings and found no change in results (p's < .001 for both control and social affiliation themes).

We first conducted a chi-square analysis of culture (U.S. vs. Korea) and the secondary control theme (present vs. absent) and found that there was a significant difference in presence of the secondary control theme between cultures, $\chi^2(1, N = 200) = 15.34, p < .001, \Phi = -.28$. Whereas only 16% of Korean websites contained the theme of secondary control, 41% of U.S. websites contained this theme. In order to test for possible effects of denomination, we conducted a 2 (culture: U.S. vs. Korea) × 2 (secondary control theme: present vs. absent) × 2 (denomination: Catholic vs. Presbyterian) loglinear test. Results showed that there was a marginal main effect of denomination, $\chi^2(1, N = 200) = 3.23, p = .072, \Phi = .13$, such that marginally more Presbyterian mission statements contained the theme of secondary control (34%) compared to Catholic mission statements (23%). However, the cultural difference in prevalence of the secondary control theme remained significant even after controlling for the effects of denomination, $\chi_p^2(1, N = 200) = 15.99, p < .001, \Phi = .28$, and there was no interaction of culture, secondary control theme, and denomination, $\chi^2(1, N = 200) = 0.54, p = .464, \Phi = .05$, meaning that denominational differences in use of this theme were similar across U.S. and Korean websites.

Next, we conducted a chi-square analysis of culture and the social affiliation theme and also found a significant cultural difference in social affiliation theme prevalence, $\chi^2(1, N = 200) = 78.42, p < .001, \Phi = .63$. Of the U.S. websites, 12% contained the theme of social affiliation, while 74% of the Korean websites contained the social affiliation theme. A 2 (culture: U.S. vs. Korea) × 2 (social affiliation theme: present vs. absent) × 2 (denomination: Catholic vs. Presbyterian) loglinear test

showed that there was a significant main effect of denomination on the social affiliation theme, $\chi^2(1, N = 200) = 4.90, p = .027, \Phi = .16$, such that there were more Catholic mission statements containing the theme of social affiliation (49%) compared to Presbyterian mission statements (37%). After controlling for denomination, the effect of culture and social affiliation theme remained highly significant, $\chi_p^2(1, N = 200) = 87.29, p < .001, \Phi = .66$, and the 3-way interaction of culture, social affiliation theme, and denomination was marginally significant, $\chi^2(1, N = 200) = 2.81, p = .094, \Phi = .12$. In order to investigate the nature of this marginal interaction, we conducted a chi-square analysis of denomination and social affiliation theme, split by culture. Results of this analysis showed that there was no difference in the prevalence of social affiliation theme between denominations for U.S. websites (12% for both Presbyterian and Catholic mission statements; $\chi^2(1, N = 200) = 0.00, p = 1.00, \Phi = .00$). However, for Korean websites there was a significant effect, $\chi^2(1, N = 200) = 7.48, p = .006, \Phi = .19$, such that the theme of social affiliation was more prevalent in Catholic mission statements (86%) than Presbyterian mission statements (62%). Figure 4 shows the main results on culture and theme.

Discussion

The results of this study supported our hypothesis that U.S. mission statements would emphasize themes of secondary control more than Korean mission statements. There were significantly more U.S. mission statements that focused on personal or spiritual growth and acceptance compared to those in Korea. In contrast, the number of Korean mission statements that emphasized social affiliation—that is,

close, loving relationships involving spending time within the community or having a connection to other believers—was significantly higher than U.S. mission statements. Thus, our hypothesis that Korean mission statements would emphasize social affiliation more than U.S. mission statements was also supported.

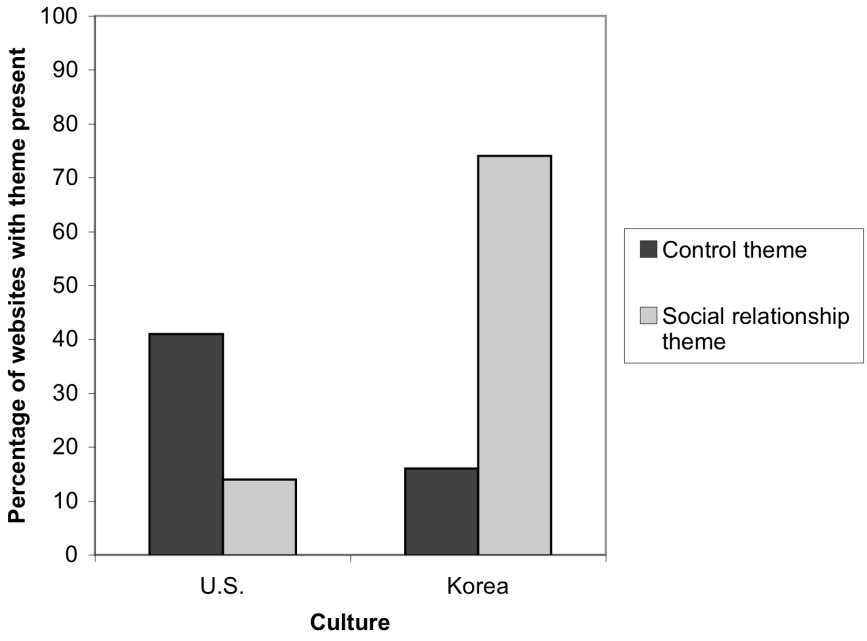

Figure 4. Cultural differences in themes of church mission statements in Study 1. *** $p < .001$. ** $p < .01$. * $p < .05$.

This study also showed that there seem to be systematic differences between Presbyterians and Catholics. Notably, though, the effects of denomination did not account for the differences in themes between cultures. Our finding of denominational difference was qualified by an interaction of culture and denomination such that Presbyterian and Catholic churches diverged in their

emphasis on social affiliation in an East Asian cultural context, whereas we found no evidence of denominational differences in a mainstream American cultural context. This latter finding is particularly interesting because, though unexpected, it is consistent with our perspective that religion is shaped by culture. These results suggest that, in examining the potential impact of religion, it may be critical to move to the intersection of culture and religion in addition to examining their independent paths.

These analyses of cultural products suggest that individual acts of secondary control or forming close social bonds may be culturally shaped by collective representations of values and meanings. The findings from the current study build on past research on cultural products (e.g., H. Kim & Markus, 1999; Snibbe & Markus, 2005) supporting the notion that investigations of culture "outside the head" are particularly important for understanding the process by which culture and the psyche make each other up (Morling & Lamoreaux, 2008; Shweder, 1991). The effect sizes for our main analyses were medium to large—.28 for secondary control themes and .63 for social affiliation themes—thus demonstrating significant cultural differences in religious teachings at the collective level of analysis. Regardless of culture, a key purpose of church websites is to express the values and practices of the congregation in a public forum (e.g., K. Kim, 2007; Sturgill, 2004). The mission statements in particular serve to teach and reinforce the values and practices of the church to each individual member; it is what the members collectively contribute to and hold as an

ideal of what the church should be. However, this study suggests that the content of these religious teachings may differ in meaningful ways.

This first study was conducted at the more collective level to examine the cultural context people live in via cultural products. Moving from this examination of culture "outside the head" in Study 1 to an investigation of its manifestation in individual behaviors in Study 2, we examine how people's behavior at the individual level can be shaped by these larger cultural meanings. Specifically, we focus our investigation on control in order to establish religion's causal impact on secondary control and to determine whether culture may moderate its impact.

Study 2: Coping Behaviors in the Laboratory

Using experimental methods in Study 2, we investigated religion's causal impact on behavioral manifestations of secondary control and whether culture may moderate its impact. This study involved a mildly distressing situation created in the laboratory, and religion was primed to investigate its effects on behavior, affect, and evaluations that reflect secondary control—that is, self-adjustment and willing acceptance of the situation. In this controlled situation, we coded whether people expressed dissatisfaction to change the situation or instead refrained from expressing discontent and accepted the situation. We predicted that manipulating religious salience would increase secondary control, and thus, European Americans should express less discontent, reflecting increased adjustment to and acceptance of the situation. However, we predicted that the impact of religious salience on secondary

control would not hold for Asians/Asian Americans, or those who are less control-focused, consistent with our findings from Study 1.

Method

Participants. All participants in this study indicated that they were religious[6] in a separate, larger prescreening questionnaire and were unaware that they were recruited based on this response. There were 49 European Americans (37 female and 12 male), 48 of which were born in the United States and had at least one U.S.-born parent. One European American participant came to the U.S. at age three. Of the 40 Asians/Asian Americans (28 female and 12 male), 17 were born in Asia, and for all but one participant, both their parents were born in their East Asian country of origin. The European American sample was mostly Christian (n = 36), followed by Jewish (n = 8) and other faiths (n = 5). The Asian/Asian American sample was also largely Christian (n = 30), with a few Buddhists (n = 4) and other faiths (n = 7).[7] Everyone received course credit or $7 payment for participation.

Materials and procedure. ***Overview.*** Participants completed tasks alone, and experimenters were unaware of the priming condition and study purpose. Participants first completed pre-task evaluations of different prizes, and they were told that they would receive their first choice prize if they performed well on the cognitive task. Next, participants were randomly assigned to a priming condition that either primed

[6] Although Asian/Asian American participants were significantly higher than the European Americans on a measure of religiosity (p = .046), controlling for religiosity does not change the results in this study.

[7] Results do not change significantly with non-Christian participants excluded from analyses.

religion or not before completing the cognitive task. The feedback on the cognitive task was rigged such that every participant scored high enough to receive his or her first choice prize. However, participants were "accidentally" given their last choice prize, and experimenters coded participants' reactions to receiving the wrong prize. Participants completed post-task prize evaluations to check whether they appraised the mildly distressing situation equally across cultural groups.

Pre-task prize evaluations. The experimenter presented the participants with four prize items (i.e., a ballpoint pen, a mechanical pencil, a small notepad, and a folder) pre-tested to be equally desirable, and participants ranked the four prizes and were asked to indicate which they preferred to receive if they did well on the test. Participants completed four items about each prize on how much they liked it (1 = *I really dislike it*, 7 = *I really like it*), its quality (1 = *very low quality*, 7 = *very high quality*), its usefulness (1 = *not useful at all*; 7 = *very useful*), and the attractiveness of its design (1 = *very unattractive design*; 7 = *very attractive design*). The four rating items were later combined into a composite scale for each prize (α's ranged from .70 to .81). Participants then wrote down the name of the prize they most wanted.

Priming condition. Next, participants were randomly assigned to one of two priming conditions: religion or no-religion. In the *religion condition*, the two writing options were "religious values" and "romantic values," whereas in the *no-religion condition*, the two options were non-religion values (i.e., "relations with friends/family" and "romantic values"). Participants rated both values on a scale from

1 (*extremely unimportant*) to 7 (*extremely important*), chose one value, and wrote about its importance to them for five minutes.[8]

Cognitive task. All participants were given five minutes to work on the easy version of the Remote Associates Test (RAT; McFarlin & Blascovich, 1984), in which they had to produce a novel word (e.g., foot) that connected three clue words (e.g., athletes–web–rabbit). The easy RAT was administered in order to increase the plausibility that participants did well on the task. Participants were told that they would receive their first choice prize if they scored within the 90th percentile of students who did the task in the previous year.

Behavioral observation and post-task prize evaluations. The experimenter scored participants' RAT in a separate room and informed all participants that they scored in the 92nd percentile. The experimenter then told participants that they would receive their first choice prize for doing well on the task, but since the lab was "out of prizes," another lab assistant would run to a different lab to get their *first choice* prize. After leaving the lab for a few minutes, the assistant returned with the participant's

[8] Participants were given a choice of writing topics in order to reduce the problem of demand characteristics associated with religion. Given that participants were pre-selected to be religious, we anticipated that the majority of participants in the *religion condition* would choose to write on the topic of "religious values," which they did (66%). Even for those who did not choose to write on "religious values" (34%), simply seeing this religion-relevant option should have primed the concept, particularly since all participants were religiously identified. In the written responses, some participants in the *religion condition* freely mentioned religion even if they had chosen "romantic values." All main analyses revealed the same pattern of results, either at significance or marginal significance, when participants who wrote on "romantic values" were excluded. Thus, participants in the *religion condition* were included in analyses regardless of chosen topic, maintaining random assignment to conditions.

last choice prize. The experimenter gave the participant instructions for completing the post-task prize evaluations, which included the same four prize rating items from the pre-task prize evaluations, for the prize *they received* (i.e., for their last choice prize if they did not complain that it was the wrong prize, or for their first choice prize if they complained before completing post-task prize evaluations). During this interaction, the experimenter carefully observed the participant's verbal and non-verbal cues of dissatisfaction. If participants verbalized that they had received the wrong prize, the lab assistant retrieved the correct prize for them. Last, participants completed demographics before being probed for suspicion about the study purpose and thoroughly debriefed. As additional compensation, all participants were offered a small gift of equal value to the original prizes and thanked for their participation.

Behavioral observation coding. The experimenter completed a coding sheet immediately following the behavioral observation in a room separate from the participant. We operationalized secondary control as the extent to which participants accepted the situation by controlling themselves to not express dissatisfaction, rather than trying to exert primary control, or influencing and changing the situation by expressing their dissatisfaction with the prize. Specifically, the binary coding indicated whether or not the participants verbally complained that they had received the wrong prize, and if the participants did not verbally complain, whether or not the participant showed at least one indication of discontent non-verbally (e.g., being clearly hesitant to continue on in the next task). The experimenter also rated to what extent participants expressed negative affect from 1 (*not at all bothered*) to 7 (*very*

much bothered). A total of nine different laboratory assistants of various ethnicities were used as the experimenter during the course of data collection to ensure that coding responses were not the result of peculiarities of one experimenter, and there were no systematic differences in coding patterns among these experimenters.

Results

We hypothesized that European Americans would exert secondary control or accept the situation more (i.e., less attempt to change the situation)—as indicated by less verbal complaints, less signs of non-verbal dissatisfaction, and less negative affect—in the *religion condition* than the *no-religion condition*, but that Asians/Asian Americans would not differ between conditions.

Effects on observed reactions. First, the results for frequency of verbal complaints showed that about 11% of all participants told the experimenter that they had received the wrong prize, but this outcome was determined by culture and priming condition. A 2 (culture: European American vs. Asian/Asian American) × 2 (priming condition: religion vs. no-religion) × 2 (complaints: observed vs. not observed) loglinear test[9] on verbal complaints yielded no main effect of condition, $\chi^2(1, N = 85) = 0.06, p = .812, \Phi = 0.03$, and a marginal effect of culture on complaints, $\chi^2(1, N = 85) = 3.03, p = .082, \Phi = 0.19$, such that European Americans (6%) made verbal complaints slightly less frequently than Asians/Asian Americans

[9] One participant suspected that the study involved religion and her reaction to receiving the wrong prize, and thus, her data were excluded from the analyses. Because three other participants were missing behavioral data (e.g., one participant verbally expressed her excitement about getting her first choice prize right before the lab assistant went to get the prize), the final sample for analyses was 85.

(19%). The marginal effect of culture was qualified by a significant interaction between culture and condition, $\chi^2(1, N = 85) = 8.38, p = .004, \Phi = 0.31$. In order to investigate the nature of this interaction, we conducted chi-square analyses on condition and complaints split by culture. As predicted, European Americans were significantly less likely to ask for the correct prize when they were primed with religion (0%) versus when they were not primed with religion (18%), $\chi^2(1, N = 48) = 5.84, p = .016, \Phi = 0.35$. However, for Asians/Asian Americans, there was not a significant difference in complaints when primed with religion (28%) and not primed with religion (11%), $\chi^2(1, N = 37) = 1.79, p = .181, \Phi = 0.22$ (see Figure 5).

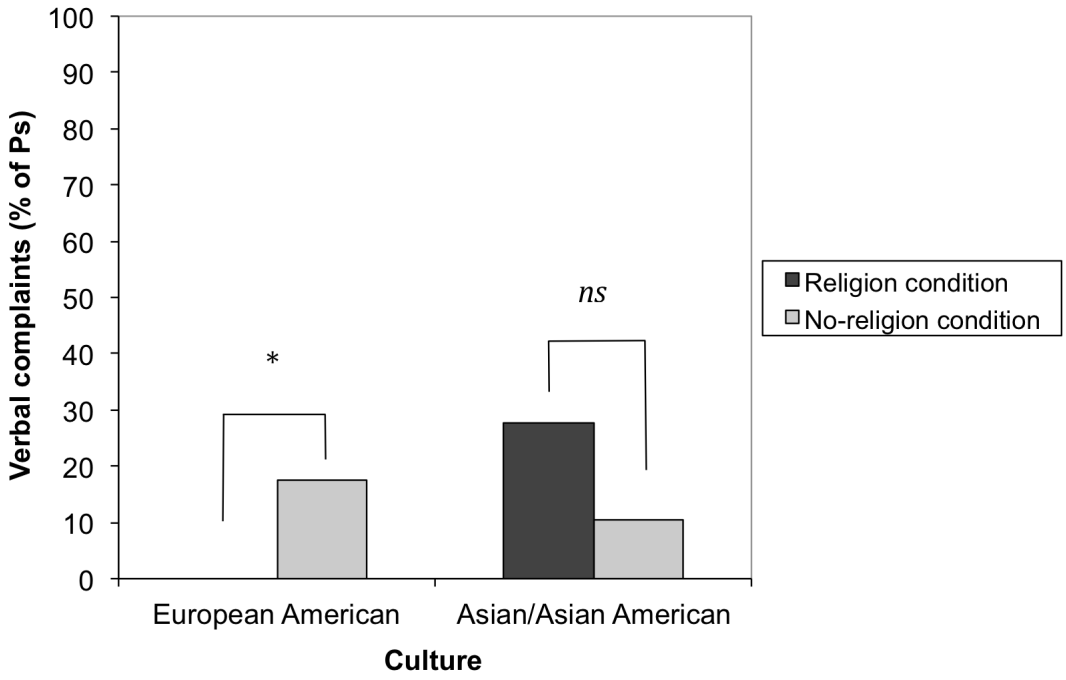

Figure 5. Effects of culture and religion on verbal complaints (i.e., asking for the correct prize) in Study 2. *** $p < .001$. ** $p < .01$. * $p < .05$.

For participants who did not ask for the correct prize ($N = 75$), we examined the effects of culture and condition on non-verbal behaviors of discontent. A 2 (culture: European American vs. Asian/Asian American) × 2 (priming condition: religion vs. no-religion) × 2 (non-verbal behaviors: observed vs. not observed) loglinear test on non-verbal behaviors revealed no effect of culture, $\chi^2(1, N = 75) = 0.59, p = .442, \Phi = 0.09$, or condition, $\chi^2(1, N = 75) = 0.86, p = .353, \Phi = 0.11$, but a significant interaction, $\chi^2(1, N = 75) = 5.23, p = .022, \Phi = 0.26$. A chi-square analysis on condition and non-verbal behaviors split by culture showed that significantly fewer European Americans displayed non-verbal indications of discontent when primed with religion (65%) than when not primed with religion (93%), $\chi^2(1, N = 45) = 3.96, p = .047, \Phi = 0.30$. However, there was no significant difference in non-verbal behaviors for Asians/Asian Americans whether they were primed with religion (92%) or not (76%), $\chi^2(1, N = 30) = 1.33, p = .249, \Phi = 0.21$.

Next, we examined whether culture and priming condition impacted expressed negative affect for all participants. A 2 (culture: European American vs. Asian/Asian American) × 2 (priming condition: religion vs. no-religion) analysis of variance (ANOVA) on negative affect yielded no main effect of condition, $F(1, 85) = 1.22, p = .273, \eta_p^2 = .02$, but a significant main effect of culture, $F(1, 85) = 12.81, p = .001, \eta_p^2 = .14$, such that European Americans expressed less negative affect than Asians/Asian Americans overall. This main effect was qualified by a significant Culture × Condition interaction, $F(1, 85) = 6.86, p = .011, \eta_p^2 = .08$. Specifically, planned

contrasts revealed that European Americans expressed less negative affect when primed with religion (M = 1.48, SD = 1.00) than when not primed with religion (M = 2.65, SD = 1.27), $t(46)$ = -3.51, p = .001, d = 1.02, but for Asians/Asian Americans, negative affect was not significantly different when they were primed with religion (M = 3.42, SD = 1.92) versus when they were not (M = 2.95, SD = 1.51), $t(36)$ = 0.85, p = .404, d = 0.27 (see Figure 6).

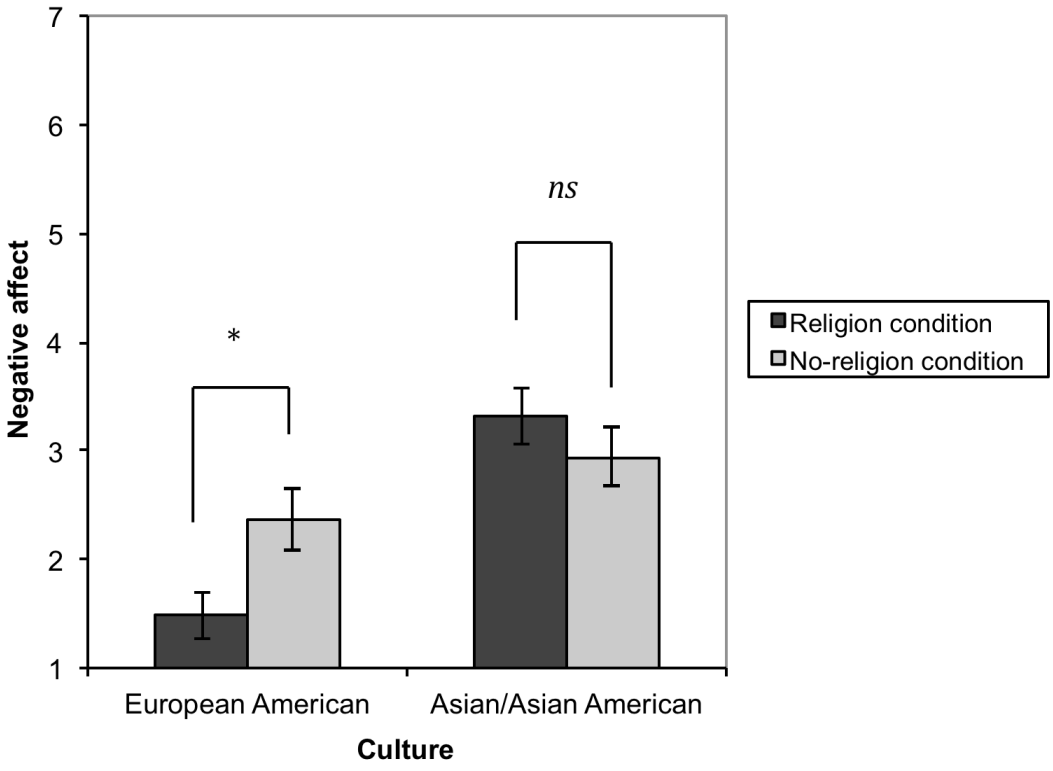

Figure 6. Effects of culture and religion on negative affect in Study 2. *** $p < .001$. ** $p < .01$. * $p < .05$.

Effects on self-reported prize evaluations. Last, we tested whether European American and Asian/Asian American participants had similar appraisals of the distressing situation by conducting a 2 (culture: European American vs. Asian/Asian American) × 2 (condition: religion vs. no-religion) ANOVA on prize evaluations for participants who did not complain that they received the wrong prize. A change score of prize evaluations was computed by subtracting the pre-task composite rating from the post-task composite rating of their last choice prize, and this change score was submitted as the dependent variable. Asians/Asian Americans ($M = -0.14$, $SD = 0.12$) did not differ from European Americans ($M = 0.12$, $SD = 0.11$) on change in prize evaluations, $F(1, 71) = 2.45$, $p = .122$, $\eta_p^2 = .03$. There was also no main effect of condition, $F(1, 71) = 2.05$, $p = .156$, $\eta_p^2 = .03$, and no interaction between culture and condition, $F(1, 71) = 0.20$, $p = .657$, $\eta_p^2 = .003$.

Discussion

Results from this study showed that culture and religion interacted to impact the degree of expressed discontent with the situation, which reflects a willingness to accept the situation. European Americans accepted the situation more, as evidenced by less verbal and non-verbal expressions of dissatisfaction and less negative affect, when primed with religion than when not primed with religion. Importantly, though, priming religion did not have significant effects on secondary control for Asians/Asian Americans. More specifically, thinking about the value of religion did not seem to influence their reactions to the undesirable situation.

These findings suggest that religion's role of increasing secondary control in a distress situation may be particularly important in cultures that focus on personal agency. These results are consistent with our findings from Study 1 showing that cultural products (i.e., church website mission statements) in mainstream American cultural contexts emphasized themes of secondary control more frequently than in Korean cultural contexts. While Study 1 examined solely Christian cultural products across two cultures, Study 2 included participants from various religious backgrounds, suggesting that cultural differences in the impact of religion on secondary control may not be bound to a particular religious tradition. Overall, the results for European Americans in Study 2 confirm previous theoretical predictions about the effects of religion on forms of control that involve acceptance of the situation (e.g., Weisz et al., 1984), providing the first experimental demonstration of how religion may impact behavioral expressions of control in the context of a mildly stressful situation.

The results showing that evaluations of the prize were unaffected by priming suggest that, for European Americans, religion may not impact appraisal of an undesirable situation, but rather, religion may influence their willingness to show their negative feelings and gain personal control by changing the situation. That is, they did not like their last choice prize when they received it any more than they had initially liked it, but religion seemed to impact how they *reacted* such that they did not enact personal control over the situation and instead seemed to accept the situation more. The results for European Americans build on previous research

suggesting that religion affirms a sense of external control (Kay et al. 2008), providing the first experimental demonstration of how religion dampens the assertion of personal control.

In this study, we investigated a behavioral indicator of control, as most research in the area of control utilizes self-report data. However, as is often the case with behavioral data, there is some ambiguity in interpreting the meaning of behaviors. It is possible that expressing less discontent indicates secondary control or being agreeable, motivated by the desire for social affiliation, or both. Thus, we conducted Study 3 using more precise measures. Additionally, although Study 2 demonstrated that religion has particular impacts on individual psychology via experimental methods in the laboratory, the question of whether religion has consistent effects in the real world remains. Thus, to determine whether religion would have the same effects suggested by cultural artifacts in Study 1 and the controlled laboratory setting of Study 2 in everyday life, in Study 3, we investigate how people may actually use religion to cope with stressful events in their daily lives.

Study 3: Daily Diary Study of Coping Behaviors

Cultural differences in values and practices found at the collective level, as shown in Study 1's analysis of cultural products, and at the level of individuals' coping responses to a lab situation (Study 2), may also be reflected in coping with naturally occurring stressors in everyday life. Using daily diary methods in Study 3, we examined how people's use of religion as a way to cope with daily stressors would predict their spontaneous use of secondary control and social affiliation as

coping strategies. We hypothesized that religious coping would be more strongly associated with the use of secondary control as a coping strategy for European Americans than for Koreans. We also hypothesized that religious coping would more strongly predict the use of social coping among Koreans than European Americans, although we expected that the relationship would be significant among European Americans as well, given the relationship found in past studies between religious coping and social affiliation with largely European American samples (e.g., George et al., 2002).

Method

Participants. The participants for this study were 77 undergraduate students recruited from the United States (n = 37) and Korea (n = 40). Although not all participants identified themselves as religious, an analysis of background measures showed that the mean level of general religiosity was comparable, $t(71) = -.39$, $p = .699$, between the European American sample ($M = 2.67$, $SD = 1.55$) and the Korean sample ($M = 2.83$, $SD = 1.83$). All participants who identified as religious were Christian (i.e., Catholic, Protestant, or non-denomination Christian).

Measures and procedure. ***Orientation and background measures.*** Participants attended the study information session at a university in the U.S. or Korea, which included detailed instructions on how to use the online survey system. Experimenters were native in respective cultures, and all materials and instructions for this study were given in the local language. Materials were translated from English to Korean by a bilingual research assistant and then back-translated by a

separate bilingual research assistant. Following this orientation, consenting participants completed initial background measures in an online questionnaire. The background questionnaire included a 10-item reliable, validated scale to assess level of general religiosity (Worthington et al., 2003; $\alpha = .95$). Example items include "My religious beliefs lie behind my whole approach to life," and "I enjoy working in the activities of my religious organization." Demographic items on age, sex, ethnicity, birthplace, religious identification (i.e., dichotomous item: "Are you religious?" *Yes* or *No*), and religious affiliation were also included.

***Daily measures*.** Participants were instructed to complete an online questionnaire[10] at the end of each day for seven days. The questionnaire for this study consisted of stressor descriptions and evaluations, as well as coping measures.

In an open-ended format, participants were first asked to describe their biggest stressor of the day and evaluate the seriousness and negativity of their stressor. Next, participants were asked to indicate how much they used religious coping, secondary control, and social coping to deal with their daily stressor. Religious coping was assessed with two items from the Brief COPE inventory (e.g., "I sought help from God or a higher power;" Carver, 1997; $\alpha = .95$). Secondary control, or adjustment of the self and acceptance of the situation, was measured using a four-item composite scale ($\alpha = .70$) that included two items from the Brief COPE (e.g., "I accepted the reality of this stressor") and two created items (i.e., "I changed my attitudes about the

[10] Data were collected as part of a larger study dataset that also included items on daily social interactions.

situation" and "I adjusted my expectations"). Social coping was measured with a 5-item composite (α = .72) of three items from the Brief COPE (e.g., "I talked to someone about the situation") and two created items (e.g., "I hung out with friends who did not know about the stressor") in order to measure overall use of various types of social support in a culturally balanced manner (see H. S. Kim et al., 2008 for review of cultural differences in use and benefit of different types of social support). All items were assessed on a 5-point scale ranging from 1 (*not at all*) to 5 (*very much*).

At the end of the seven days, the experimenter debriefed participants in groups. Participants received monetary compensation for attending the orientation session and for each day they completed the online questionnaire, and those who completed all seven daily questionnaires received a small additional amount as an incentive to participate each day.

Results

Data analysis strategy. The data for this study were hierarchical, with daily ratings nested within persons. Thus, hierarchical linear modeling (HLM) techniques (HLMwin, Version 5.02; Raudenbush, Bryk, & Congdon, 2000) were used. HLM allows analysis of each participant on each day, and then summarizes the results across participants, across days. To test the central research questions on cultural differences, we examined the cross-level interaction (Nezlek, 2001) of religious coping and culture. More specifically, we analyzed the within-person association of daily religious coping and outcome variables (i.e., secondary control and social

coping) as a function of cultural (i.e., between-person) differences, with all within- and between-person random effects included in the analyses. All results controlled for stressor seriousness and negativity in order to test for cultural differences in the use of religious coping above and beyond specifics of the stressors. The following Level 1 (within-person) equation was used for each outcome variable:

$$Y_{ij} = b_{0j} + b_{1j} \times (\text{seriousness}) + b_{2j} \times (\text{negativity}) + b_{3j} \times (\text{religious coping}) + r_{ij},$$

where Y_{ij} is the outcome (e.g., social affiliation) for person j on the ith day, b_{0j} is the intercept (e.g., the person's level of social affiliation on an average day), b_{1j} is the slope between the outcome variable and seriousness of the stressor, b_{2j} is the slope between the outcome variable and negativity of the stressor, b_{3j} is the slope between the outcome variable and the daily level of religious coping, and r_{ij} represents error. Because ratings of seriousness, negativity, and religious coping were centered around each participant's mean, the coefficients represent the deviations of ratings on the ith day from the person's average rating.

Cultural (i.e., between-person) differences in the average within-person relationship between the outcome variable and daily events were estimated using the following Level 2 model:

$$b_{0j} = g_{00} + g_{01} \times (\text{Culture Code x}) + u_{0j},$$

$$b_{1j} = g_{10} + u_{1j},$$

$$b_{2j} = g_{20} + u_{2j},$$

$$b_{3j} = g_{30} + g_{31} \times (\text{Culture Code x}) + u_{3j},$$

Each analysis was run with European Americans coded as 0 and Koreans coded as 1 in the Culture Code. In the Level 2 model, g_{00} refers to the day-level intercept for European Americans, g_{01} refers to the difference in day-level intercepts between European Americans and Koreans, and g_{10} and g_{20} represent the day-level slopes for the entire sample; g_{30} refers to the strength of the within-person association between religious coping and the outcome variable for European Americans; g_{31} is the difference in the within-person association of religious coping and the outcome between European Americans and Koreans; u_{0j}, u_{1j}, u_{2j}, and u_{3j} represent random effects of the intercept, stressor seriousness and negativity, and religious coping. The random effects of control variables (i.e., seriousness and negativity) were excluded from analyses because these were not the main variables of interest.

Cultural differences in daily effects of religious coping. In our first analysis, we tested our hypothesis that religious coping would predict secondary control differently depending on culture. Results showed that the average use of secondary control across days for European Americans was 2.70, and Koreans used significantly more secondary control than European Americans on average to cope with daily stressors ($b = .47, p < .001$), replicating the general pattern of cultural difference in other research (e.g., Morling et al., 2002; to be addressed in the general discussion). As predicted, religious coping was positively associated with secondary

control for European Americans ($b = .39, p < .001$) such that the more they used religion to cope with a stressor, the more they also adjusted themselves and accepted the situation on a given day and across days. However, a significant Culture × Religious Coping interaction indicated that the association between religious coping and secondary control for Koreans was significantly different from the association for European Americans ($b = -.30, p = .015$). In a follow-up analysis, Koreans were coded as 0 and European Americans were coded as 1 to determine the strength of the relationship between religious coping and secondary control for Koreans. The results revealed that the relationship for Koreans was not significantly different from zero ($p = .355$), suggesting that Koreans did not adjust themselves or accept the situation more as they used religion to cope. Thus, consistent with Studies 1 and 2, the effects of religious coping on secondary control were moderated by culture in the context of daily life. All intercepts and unstandardized regression coefficients relevant to our hypothesis on secondary control are reported in Table 2.

The next analysis tested our hypothesis that there would be cultural differences in how religious coping predicted social coping. The results of this analysis showed that European Americans' average use of social coping in response to daily stressors was 2.09 across days, while Koreans' average use of social coping was significantly higher than European Americans ($b = .65, p < .001$). Religious coping predicted significantly more use of social coping on a day and across days for European Americans ($b = .19, p = .022$), consistent with our prediction, and the interaction between culture and religious coping was not significant ($b = .09, p =$

.425). Again we conducted a follow-up analysis with Koreans coded as 0 and European Americans coded as 1 to investigate the strength of the association between religious coping and social coping for Koreans. Results of this analysis showed that, for Koreans, religious coping significantly predicted social coping on a day and across days (p = .002). Thus both European Americans and Koreans used social coping strategies more as they used religion to cope. Intercepts and unstandardized regression coefficients relevant to our hypothesis on social coping are also reported in Table 2.

Table 2

Hierarchical Linear Modeling Intercepts and Unstandardized Regression Coefficients for the Association between Religious Coping and Outcome Variables by Culture (Study 3)

Culture	Intercept	Slope	Significance test of slope	Significance test of Culture x Religious Coping interaction
Secondary control as outcome variable				
European American	2.70	.39	$p < .001$	$p = .015$
Korean	3.17	.09	$p = .355$	--
Social coping as outcome variable				
European American	2.09	.19	$p = .022$	$p = .425$
Korean	2.74	.28	$p = .002$	--

Exploratory analysis on secondary control and social coping. In an exploratory analysis, we first examined whether secondary control was associated with social coping for European Americans and found that this relationship was significant ($b = .21, p = .002$). There was no interaction of culture and secondary control ($b = .11, p = .185$), and our follow-up analysis coding Koreans as 0 and European Americans as 1 showed that secondary control also predicted more social coping on a day and across days for Koreans ($b = .33, p < .001$). Given this finding, we next examined whether the association between religious coping and social coping would be reduced after controlling for use of secondary control. With Koreans coded as 0 and European Americans coded as 1, the results revealed that religious coping still significantly predicted social coping for Koreans, even after controlling for secondary control ($b = .23, p = .001$); however, with European Americans coded as 0 and Koreans coded as 1, the relationship between religious coping and secondary control for European Americans was no longer significant after accounting for the effects of secondary control ($b = .10, p = .313$).

Discussion

In Study 3, we first examined the hypotheses that religious coping would predict an increase in the use of secondary control as a way of coping with stressors for European Americans but not Koreans, and that religious coping would predict social coping for both groups, and particularly for Koreans. These hypotheses were confirmed, suggesting that the role of religion may indeed differ depending on culture. Consistent with previous research, the findings from this study indicate that

Koreans used secondary control more overall (Lam & Zane, 2004; Morling et al., 2002; Weisz et al., 1984), and religious coping was associated with secondary control overall (Weisz et al., 1984). However, the interaction between religion and culture showed that European Americans increased their use of secondary control, or acceptance of the situation, as they used religion to cope, whereas this relationship was not significant for Koreans. These findings are in line with Study 1's results that collective representations of religious practices and values emphasize secondary control more in the U.S. compared to Korea. The findings from this study also align with Study 2's results that religious salience leads to greater secondary control in a controlled laboratory setting.

The results of Study 3 also showed that, consistent with our predictions based on past research on interdependence and relational goals (e.g., Morling et al., 2002, 2003; Oishi & Diener, 2001), Koreans used more social coping in relation to religious coping. Building on past research suggesting that social support may be an important pathway of benefit for mainstream Americans (Y. Y. Chen & Contrada, 2007; George et al., 2002; Hill & Butter, 1995; Seeman et al., 1987), our results showed that social coping was also related to religious coping for European Americans. This relationship seemed to be stronger for Koreans compared to European Americans, but not significantly so. In the exploratory analysis, we found that there was a significant relationship between secondary control and social coping. That is, for both cultural groups, the more they used secondary control to cope with their stressor, the more they also used social coping on a given day and across days. In our analysis of

religious coping as a predictor of social coping, controlling for secondary control reduced the effect to non-significance for European Americans but not Koreans, suggesting an interesting possibility that will be discussed further in the general discussion.

General Discussion

Summary

Recent increases in psychological research on religion have begun to fill a long-standing void in the scientific understanding of this topic. The current investigation, however, differs from the majority of previous research on religion by demonstrating that religion is not always uniform in its effects and implications across groups of people. Just as psychological tendencies can differ based on the beliefs and practices of religious traditions (e.g., A. B. Cohen et al., 2003; Sanchez-Burks, 2002; Tsai et al., 2007), even the same religion may have varying impacts depending on the larger cultural context. Moving from macro-level analyses of tangible cultural products to micro-level investigations of behavioral and psychological responses, we found a similar interaction between culture and religion throughout, demonstrating that institutional teachings of religion and the role of religion in shaping individuals' actions and daily lives may be moderated by culture. We do not claim that these effects would be clear and consistent across different psychological tendencies and social interactions. However, it is important to point out that there are detectable culture-specific patterns at many levels of analysis, thus highlighting the pervasive influence of cultural assumptions.

Using multiple levels of analysis, our studies show how religion may be differentially represented and psychologically experienced according to the cultural context. In Study 1 we showed that explicit statements of values in religious teachings differ on a collective level in different cultures. Study 2 demonstrated experimentally that religious salience influences response to a social situation in a culturally specific way, and Study 3 showed that culture impacts the way people use religion in daily life to cope with naturally occurring stressors. Taken together, the findings from these three studies suggest that the culturally shaped religious practices and values represented in cultural products may be internalized and experienced on an individual level. From Studies 1, 2, and 3, we can see that personal agency – an individual's spiritual growth in religion, acceptance of circumstances, and dampening of personal control – is particularly relevant in religion for European Americans, who tend to have a more independent self. Study 3 suggests that the use of social resources may be an important part of religious coping for both collectivistic and individualistic cultures, but Studies 1 and 3 together suggest that the value of social relationships—that is, social affiliation and maintaining relationships with others in church or other believers—are especially important for East Asians, who tend to foster the interdependent self.

In this research we focused primarily on Christianity (except in Study 2) in order to examine how culture shapes the impact of the same religion. However, past research suggests that other non-Christian religions should also be connected to secondary control or social affiliation in some way (e.g., Weisz et al., 1984; Yeager et

al., 2006). Future research should examine whether different non-Christian religious traditions may place more or less emphasis on secondary control or social affiliation. The fact that Study 2 in the present research includes non-Christians and shows results consistent with our theorizing suggests that the interaction between culture and religion may be found among non-Christians. Future research should also examine how different religious traditions may interact with culture to produce convergent and divergent effects given that Catholic and Presbyterian mission statements in Study 1 show slightly different results from each other.

In addition, the current research focuses primarily on how culture shapes religion, but that is not to say that religion has had no previous impact on the cultures included in these studies. Undeniably, religion has contributed to the formation of both cultures – Protestant values live at the core of much of mainstream European American culture (Sanchez-Burks, 2002), just as Korean culture has many historical roots in Buddhist thought (Pratt, 1928). Yet these strands of historical religious influence have become so tight-knit with the dominant American and Asian cultures that they are inseparable. Culture, as a system of beliefs, traditions, and shared meanings, is maintained and changed by the people who exist with it in mutual constitution (Bruner, 1990; H. Kim & Markus, 1999; Kitayama et al., 1997; Shweder, 1995) and inevitably includes religious or philosophical influences from its historical past (Markus & Kitayama, 1991). The present research addresses the issue of how current, active participation in religion, whether consistent with a culture's historical past or not, may differ according to cultural context.

Universal and Culture-Specific Impacts of Religion

This research suggests that social affiliation may be relevant to religious groups everywhere, but particularly in cultures that strongly value maintaining close relationships. The notion of an all-seeing, all-powerful God who punishes deviant behavior may be a viable solution to the problem of large non-kin groups, encouraging prosociality when social reputations are at stake, and giving religious groups some adaptive advantages over secular groups (D. Johnson & Bering, 2006; Norenzayan & Shariff, 2008; Sosis, 2004). Indeed, research on currently existing religious communities suggests that individuals in these groups are highly cooperative compared to those in secular communities (e.g., Shapira & Madsen, 1974). Thus, religion may serve a social function across cultures, and certain cultural contexts may enhance or dampen this emphasis on relationships.

In contrast to social affiliation, secondary control may be a less universally relevant use of religion. Past research on culture and control has suggested that people from different cultures may emphasize different types of control. While the European American (i.e., independent) cultural perspective tends to be more focused on primary control overall, the East Asian (i.e., interdependent) perspective tends to focus more on secondary control (e.g., Morling et al., 2002; Weisz et al., 1984; but also see Morling & Evered, 2006 for review and exceptions to this general cultural pattern). The results from Study 3 showed that, consistent with past research on culture and types of control (e.g., Morling et al., 2002), Koreans emphasize and use more secondary control than European Americans overall. Yet secondary control was

predicted by religious coping only among European Americans and not among Koreans, suggesting that religion's impact on secondary control may be less ubiquitous and uniform than once assumed. Thus, our findings across all three studies are consistent with the results from Morling et al. (2003) that European Americans preferred the secondary control coping strategy to the social coping strategy during pregnancy, whereas Japanese preferred social coping to secondary control. The authors of this study suggested that both primary and secondary control center on the individual, as primary control requires action from the self, and secondary control requires personal acceptance from within. Control, in any form, is in concert with the individualistic motivation for agency, and thus, gaining any form of personal control to cope may be a preference bounded by culture and the specific context.

However, because religious groups tend to strongly value interdependence (e.g., Bellah, Madsen, Sullivan, Swidler, & Tipton, 1985), the independent tendency of North American culture may actually interfere with the demands of creating a cohesive religious community. Given that the social aspect of religion should be relevant in every culture to some degree (e.g., see Durkheim, 1912, 1995), the use and value of secondary control in individualistic cultures such as in the United States may facilitate social affiliation in religious communities. In line with this reasoning, our exploratory analysis in Study 3 showed that the relationship between religious coping and social coping was reduced to non-significance after controlling for the use of secondary control for European Americans (but not for Koreans). This finding raises the possibility that religion encourages secondary control for European Americans,

who are ordinarily not as inclined to exercise secondary control, in order to ultimately allow them to affiliate with others more and become further integrated in a community.

This explanation may also apply to our Study 2 findings that European Americans primed with religion expressed less discontent in a distressing situation. It is noteworthy that the act of accepting the situation led to behavior that is more agreeable and socially affiliative. The seeming ambiguity in the meaning of the expressing less discontent might also be by design for European Americans, as was the case in Study 3. These findings from the present research suggest that increased acceptance and adjustment from secondary control may be one pathway through which independent individuals can begin to affiliate more with others and maintain close relationships.

Implications for Existing Theoretical Models and Practical Benefits of Religion

Although the impact of religion on control seems to be different in individualistic versus collectivist cultural contexts, our findings on people from mainstream American culture may be integrated into existing models of control. Past research has demonstrated that a lack of personal control can lead people to increase belief in a controlling God (Kay et al., 2008; Laurin, Kay, & Moscovitch, 2008). Under their model of compensatory control, Kay and colleagues (2008) argue that people may maintain a relatively stable level of control overall by using external forms of control, such as God, to compensate for a lack of personal control. Our findings that European Americans were more likely to accept the situation in response

to an experimental manipulation of religious salience (Study 2) and when using religion to cope with naturally occurring daily stressors (Study 3) seem to support their model. In addition, collective representations of religious teachings related to secondary control were strongly emphasized in the U.S. (Study 1). If, as this compensatory model of control suggests, people increase their belief in a controlling God because it offers them a sense of external control, then it should follow that religious teachings, religious salience, or religious coping increase a sense of external control, encouraging people to use secondary control, or adjust the self and accept their circumstances.

However, our studies suggest a different pattern of data for East Asians. As Kay et al. noted, people from East Asian cultures also have a need for control, and one possibility they suggest is that people from different cultures may have a similar need to perceive order, but the way they achieve this sense of order varies. Another possibility is that the need for control is lower overall for people from East Asian cultures, allowing them a higher tolerance for a lack of control. Future research may directly address these possibilities by incorporating external versus personal/internal dimensions of control, as well as primary versus secondary control. Drawing on the present research, we suggest that while religion may fulfill a sense of control for people from Western cultures, the function and use of religion for people from East Asian cultures may be much less tied to issues of control.

The current research has important implications for understanding the process by which people may benefit from religion. A recent review by McCullough and

Willoughby (2009) concludes that self-control may be a "general feature of religion itself" (p. 87) and one important pathway through which religion impacts health outcomes. The use of self-control is distinct from secondary control in that people can assert secondary control without necessarily exerting self-control, or overriding an initial response. However, in cases when an increase in secondary control may also reflect the act of self-control (as can arguably be the case in Study 2), the current investigation suggests that religion's effect on self-control may be moderated by culture. People from different cultures tend to be motivated towards different goals, and thus, *how* they use religion to achieve these goals may differ systematically by culture. In working towards an understanding of the theoretical processes surrounding religion and its practical consequences, it is important to consider how cultural factors may constrain or support pathways of religious influence.

Concluding Remarks

Although religious beliefs and traditions may travel and settle into different communities, people from different cultures may experience even the same religion quite differently. Prior to this research, it was largely unknown how culture and religion may interact to create different experiences and thus different outcomes. For people from individualistic cultures, who are driven by goals of personal agency, the sense of control they gain from religion may help them withstand hardships. Conversely, for those from collectivistic cultures, who are motivated to maintain strong relational ties, religion may be more centered on promoting affiliation with others in community. For people at an American evangelical outreach and in a

Korean mega-church, the roles of religion may indeed differ. However, people from both cultures may use religion in a way that ultimately affirms their culturally construed sense of self.

CHAPTER III

Is God a Conservative?

The Moderating Role of Power in the Religion–Conservatism Link

(Manuscript under review)

Religion and power have a long and complicated history of being intricately intertwined, particularly in the realm of politics. Disentangling them may thus expose how power imposes constraints on religion's seemingly strong conservative pull in the political arena. At first blush, it may appear that religion is better matched with politically conservative values and behaviors than liberal ones. There is certainly an expectation that conservatives are more religious than liberals (e.g., Sheets, Domke, & Greenwald, 2011), and this expectation is reflected by the media's love of the sound byte "the religious right." In academic circles, researchers have argued that there are deep commonalities between religious beliefs and conservative ideologies (Adorno, Frenkel-Brunswik, Levinson, & Sanford, 1950; Braithwaite, 1998; Wilson, 1973). Yet religion is a multifaceted construct that can have different meanings in different contexts (Sasaki & H. S. Kim, 2011) and varying implications depending on the person experiencing it (Sasaki et al., 2011). Thus, the relationship between the church and the crown may not be so straightforward, but rather, may depend on particular aspects of the social context—such as relative position of power—that are critical in the political sphere.

For instance, the link between religion and politics is not the same for members of majority and minority ethnic and cultural groups (A. B. Cohen et al., 2009; Parenti, 1967; Wald & Martinez, 2001), who may experience different amounts of relative power in society. Given that the powerful are often driven to maintain their power (Bugental, 2000; Maslow, 1937), the way religion influences political

ideologies and behaviors may not be uniform across groups of people. Instead, the possession or lack of power may sway religion's impact on political leanings. Across four studies, we take a closer look at the relationship between religion and politics to examine two main questions. First, does involvement in or thoughts of religion causally influence political beliefs and behaviors, and is this effect moderated by power? And second, what is the explanation for the interactive effect of religion and power on politics? Using worldwide and experimental evidence, we demonstrate that religious beliefs or thoughts can influence political beliefs and behaviors, but crucially, we argue that this effect may be contingent on power.

The "Religious Right"

Religious devotion appears to go hand-in-hand with political conservatism — a right-wing orientation that endorses tradition and authority, patriotism and capitalism, and order and security, while resisting social change and instability (Blee & Creasap, 2010; Jost, 2006; Wilson, 1973). Historically, it seems that conservatives have been more inclined to support religious institutions in power, while liberals and progressives have been more likely to challenge them (Jost, Nosek, & Gosling, 2008). Empirically, it also appears to be the case that religious people are more politically conservative, not only within Western religious traditions such as Christianity (Brint & Abrutyn; 2010; Pew Forum, 2008), but also within Eastern religious traditions such as Hinduism and Buddhism (Norris & Inglehart, 2004). In the United States, the religious tend to be less supportive of typically liberal causes, such as abortion (Jelen & Wilcox, 2003), rights for same-sex couples (Sherkat, Powell-Williams, Maddox, &

de Vries, 2011), and free speech advocacy or anti-censorship laws (Fisher et al., 1999; Lindner & Nosek, 2009; Watts & Whittaker, 1966). Yet much past research on religion and politics has been conducted in North America with mostly European American samples (e.g., Guth & Green, 1986; Rowatt, LaBouff, Johnson, Forese, & Tsang, 2009), and an examination of different samples or contexts tells a slightly different story of the relationship between religion and politics.

Among racial minorities in the U.S., such as Blacks and Latinos, the religion–conservatism link is considerably weaker than among racial majority members (i.e., Whites) (A. B. Cohen et al., 2009; Kelly & Morgan, 2008; Layman & Green, 2005). Even though Blacks actually tend to be more religious and hold more traditional religious beliefs than Whites (Roof & McKinney, 1987), they consistently vote Democratic (Tate, 1993), and religiosity in this group seems to be more linked to liberal political activities (Calhoun-Brown, 1998). One of the key differences between these racial groups may be the amount of power they hold in society, as the majority group is often perceived to possess greater power than the minority (e.g., Seyranian, Atuel, & Crano, 2008). It seems likely that the connection between religion and political conservatism may be stronger when the social context is laden with power.

Interestingly, when viewed from the perspective of power, the story of religion and politics for different groups shows a consistent pattern. American Catholics, who make up one of the United States' minority religious groups, tend to be less aligned with conservative politics compared to American Protestants, who are in the U.S. religious majority (Brooks & Manza, 2004; Pew Forum, 2008). Yet

Catholics are the largest unified religious faith in the world (Central Intelligence Agency, n.d.), and across political elections at the worldwide level, they are more likely to vote for right leaning parties on average compared to Protestants (Norris & Inglehart, 2004). The tendency to be politically conservative is weaker for Jews in the U.S., where they make up an ethno-cultural/religious minority, compared to Christians, who comprise the U.S. religious majority (Parenti, 1967); and similarly, this tendency is weaker for Jews in the U.S. than Jews in Israel, where they represent the majority (Wald & Martinez, 2001). These different groups within and outside the U.S. each have unique cultural and historic backgrounds, but a notable commonality is that in each group comparison, a group in the minority holds less power relative to the one in the majority. Given that members of the majority group often have more power in their local society compared to those in the minority and that the phenomenology of being a majority versus minority member may mirror positions of high versus low power (i.e., via a sense of control: Guinote, Brown, & Fiske, 2006), this intergroup research suggests that a key moderator in the link between religion and political conservatism may be the social context of power.

Power as a Moderator of the Religion–Conservatism Link

Power is the ability to control one's own or others' outcomes via access to resources and can shape how situations are perceived and the way people are motivated to act (Fiske, 1993; Galinsky et al., 2003; Guinote, 2007; Keltner et al., 2003; P. K. Smith & Galinsky, 2010), and thus, power may have important implications for the way religion is experienced and motivates beliefs and behaviors

in the realm of politics. Social status, for instance, generally predicts more conservative attitudes on political issues such as capitalism and welfare (Ekehammar, Nilsson, & Sidanius, 1989; but see Schoon, Cheng, Gale, Batty, & Deary, 2010 and Van Hiel, Onraet, & De Pauw, 2010 for research showing that education and cognitive ability can predict more liberal social attitudes), and given that beliefs on social and economic political issues tend to be positively associated (Furnham & Heaven, 1988), it is likely that power is related to political conservatism in general. Taken together, this research suggests that the powerful and the powerless may indeed differ on political orientation.

People who identify with more liberal ideological beliefs tend to be more supportive of specific values or policies, such as affirmative action and welfare, which aim to rectify social or economic inequalities (e.g., Kerlinger, 1984; Kluegel & E. R. Smith, 1986) Conversely, conservatives tend to hold more favorable views of policies such as capitalism (Conover & Feldman, 1981), which can contribute to inequalities (Greenhalgh, 2005; Hosseini, 2010; Kaus, 1992). Dominant groups who benefit from inequalities may be motivated not only to retain their power over non-dominant groups (e.g., Bugental, 2000; Maslow, 1937), but also to maintain the belief that they deserve their power by justifying existing social hierarchies (Sidanius & Pratto, 1999). Although everyone may, to some extent, be driven by a need to justify the current social order (Jost & Banaji, 1994; Jost, Banaji, & Nosek, 2004), people who are advantaged by the system may at times justify the status quo even more than

those who are disadvantaged by the system because of differences in self-interest (Keltner & Robinson, 1997; Levin, Sidanius, Rabinowitz, & Federico, 1998).

The Legitimizing Role of Religion for Power Inequality

One particular set of system justifying beliefs relevant for the relationship of religion and power to political conservatism is the ideology of *legitimacy* — the perception that status differences between groups are fair, just, or moral (Levin et al., 1998). When people perceive group differences to be legitimate, they are more likely to support outcomes benefiting the dominant or powerful group, consistent with conservative political policies (Jost & Burgess, 2010; Jost, Pelham, Sheldon, & Sullivan, 2003). It has been argued that legitimacy beliefs underlie politically conservative beliefs and behaviors (Jost, 2006; Jost et al., 2008), and therefore, it is likely that legitimacy beliefs play an important role in explaining why political conservatism is impacted by religion and power.

Particularly for those who happen to be in positions of power, religion may have a hand in increasing beliefs about the legitimacy of inequality. During times of extreme social inequality, for instance, religion tends to be especially attractive to the wealthy, who often hold relatively powerful positions in society (Solt, Habel, & Grant, 2011). Indeed, religion is an ideological framework that has the potential to reinforce legitimacy beliefs in certain contexts, and in particular, the context of high power may be crucial for the legitimizing effect of religion to be maintained.
We argue that the social context in which religion asserts its influence on political orientation must be considered, especially given that the actual teachings of religions

do not always espouse a uniform view. Christian religious texts, for instance, often focus on the maintenance of traditions and the righteousness of authority figures (Wolfe, 2005), but also emphasize social justice and the righteousness of the poor and those who are powerless (Cone, 1970; Gutiérrez, 1973). Thus, religious doctrine may at once enforce conservative values and legitimize group status differences, yet at the same time weaken political conservatism and question the legitimacy of inequalities. What this suggests is that religion may serve to justify multiple seemingly contradictory political views, and at least, religion ought not lead to one view. Thus, we examined the moderating effect of power and mediating effect of legitimacy beliefs to change the way religious influence is understood. In reality, the way religion impacts people may not be monolithic, but rather, may depend on different aspects of the social context, such as position of power. The *combination* of religion and power, then, is what may alter beliefs in the legitimacy of group differences in order to ultimately lead to political conservatism. An understanding of when religiosity leads to political conservatism, and why, may require a more nuanced approach. Therefore, using multiple methods and diverse samples, we test the idea that the combined effect of religion and power may lead to greater political conservatism because of the legitimization of inequality.

Overview

The goals of the current research are threefold. First, based on theories of power (e.g., Guinote, 2007), system justification (Jost & Banaji, 1994) and social dominance (Sidanius & Pratto, 1999), and considering past research showing a

stronger link between religion and political conservatism among advantaged versus disadvantaged groups (e.g., A. B. Cohen et al., 2009), we aim to show that the impact of religion on conservatism would vary significantly depending on position of power; that is, the effect should be stronger for the powerful than the powerless. This primary goal is addressed in multiple ways across the studies, and in so doing, we also aim to provide the first experimental demonstrations that thoughts of religion may causally increase political conservatism within a particular context. Second, we aim to demonstrate that the interactive effect of religion and power is not limited to Western contexts and can be generalized to countries with very different cultures and levels of religious involvement. Third and finally, we seek to examine the role of legitimacy beliefs as a potential mediator for the interaction of religion and power on political conservatism.

In Study 4, we examine the worldwide association between religiosity and political beliefs for the powerful versus the powerless using ecologically valid measures. In Studies 5 and 6, we experimentally manipulate position of power and thoughts of religion in a laboratory setting to test whether thinking about religion causally increases politically conservative beliefs (Study 5) and behaviors (Study 6) differently depending on level of power. In the fourth and final study, we test a possible explanation for the interaction effect on conservatism: that beliefs about the legitimacy of group differences will mediate the moderating impact of power on the religion–conservatism link. Across all four studies, we test our key hypothesis that

religion and power interact to affect political beliefs and behaviors such that religion may increase political conservatism more for the powerful than the powerless.

Study 4: World Values Survey

Using a representative worldwide dataset in Study 4, we aimed to examine how religion, power, and political conservatism relate according to ecologically valid measures of our variables of interest. In particular, the World Values Survey (WVS) allowed us to look at a number of important ways in which the psychological construct of power may typically manifest itself in the real world: 1) relative position over others in the workplace, a form of objective power, 2) feeling of choice or control in one's life, a form of subjective power, and 3a & b) social class and education, two forms of social status which may imply the possession of power.[11] In order to measure religiosity, we used items on religious values and religious practice, and to determine political liberalism versus conservatism, we used an item on left–right political orientation. We hypothesized that the relationship between religiosity and political orientation would be moderated by power. Specifically, we expected that religiosity would predict a more conservative political orientation and that this relationship would be stronger for the powerful than the powerless.

Method

[11] Social class and education may be closely linked to power given that status, a construct commonly measured by social class or level of education (Kraus, Piff, & Keltner, 2009), often determines how much different groups in society are allocated resources, which can confer power (Keltner et al., 2003). However, because people can have higher status without necessarily having power and vice versa (Blader & Y.-R. Chen, 2012), social class and education may only imply a sense of power. The issue of power versus status is one we return to in the General Discussion.

This study included data collected from Wave 5 (2005–2008) of the World Values Survey (WVS), the largest standardized survey of political and sociocultural values worldwide. Wave 5 is the most recent complete wave of data collection from the WVS to date and the only one containing all our variables of interest. In this wave there were 54 countries included, and the samples were meant to be representative in age, sex, occupation, and regional distribution within a given country. Data collection was organized by the WVS Association, a worldwide network of academic social scientists responsible for supervising data collection at the local level. In addition to the general rules and procedures for data collection being fixed across countries, within each country, local field organizations were enlisted to conduct face-to-face interviews in the local language and in the respondent's own environment (World Values Survey, n.d.).

Participants. In Wave 5 of the WVS, there were 58,179 participants (50.1% male, 49.8% female, 0.1% declined to answer) ages 15 to 98 (M = 41.77, SD = 16.42) with complete data for our main predictor (religiosity) and criterion (political orientation).[12] About 82% of participants reported affiliation with a religious tradition, and in total, there were 44 different religious traditions represented in this sample: 27 Western/Abrahamic traditions (e.g., Muslim, Roman Catholic), 8 Eastern traditions (e.g., Buddhist, Hindu), and 9 other traditions (e.g., Ancestral worshipping, Native religious groups).

[12] The number of participants with complete data for each analysis differed because we tested multiple operationalizations of power, and a different number of participants responded to each measure. Degrees of freedom are given for all analyses in Table 3.

Measures. The WVS contained items relevant to our three main variables of interest — power, religiosity, and political orientation — as well as items that would allow us to test some potential confounds.

Power. We examined participants' objective power relative to others using the item, "Do or did you supervise other people at work?" (*Yes* or *No*), and examined subjective power with an item asking how much participants felt they had choice or control in their lives (1 = *no choice at all*, 10 = *a great deal of choice*). We also included two items on social status that can imply the relative possession or lack of power: social class (1 = *upper class*, 2 = *upper-middle class*, 3 = *lower-middle class*, 4 = *lower class*, 5 = *working class*; reverse coded in analyses so that higher numbers indexed higher social class) and highest educational level attained (1 = *inadequately completed elementary education*, 2 = *completed elementary education*, 3 = *incomplete technical/vocational secondary education*, 4 = *complete technical/vocational secondary education*, 5 = *incomplete university-preparatory secondary education*, 6 = *complete university-preparatory secondary education*, 7 = *some university without degree*, 8 = *university with degree*).

Religiosity. In order to measure religiosity, we standardized two items — one on religious values and one on religious practice — to create a composite ($r = .41$, $p < .001$). The item on religious values asked participants how important God is in their life (1 = *not at all important*, 10 = *very important*), and the item on religious practice asked how often they attend religious services (1 = *more than once a week*, 2 = *once a week*, 3 = *once a month*, 4 = *only on special holy days*, 5 = *once a year*, 6 = *less*

often, 7 = *never, practically never*). The religious practice item was reverse coded so that higher scores indexed more frequent attendance.

Political orientation. To measure political orientation, we used the item: "In political matters, people talk of 'the left' and 'the right.' How would you place your views on this scale, generally speaking?" (1 = *left*, 10 = *right*).

Control variables. We also examined whether our results would be significantly impacted by a number of potential confounds. First, we computed average levels of religiosity within each country as one control variable to ensure that our results were not limited to countries that tend to be more or less religious on average. Second, to control for levels of income inequality within each country, we included the most recent Gini index data for each country (0 = *income distributed with perfect equality*, 100 = *income distributed with perfect inequality*; Central Intelligence Agency, n.d.). We also considered an individual's life satisfaction as a covariate (1 = *completely dissatisfied*, 10 = *completely satisfied*) because life satisfaction tends to positively correlate with religiosity (see H. G. Koenig & Larson, 2001 for review) and with variables related to power (e.g., high levels of income and education; see Pinquart & Sörensen, 2000 for meta-analysis). Finally, we considered the personality trait of risk-taking or adventure-seeking as a covariate (1 = *very much like me*, 10 = *not at all like me*; reverse coded in analyses so that high values index more risk-taking) given that risk-taking personality traits, such as tolerance for uncertainty and openness to experience, tend to negatively correlate with political conservatism (Jost, Glaser, Kruglanski, & Sulloway, 2003).

Results

Overall means and standard deviations for continuous measures in this study are given in Table 3, and the correlations among the different continuous operationalizations of power ranged from $r = .16–.39$ (all p's $< .001$).

Table 3

Means and Standard Deviations for All Continuous Variables (Study 4)

Variable	*M*	*SD*
Religiosity (standardized composite)	-0.12	0.96
Importance of God	7.69	3.01
Religious service attendance (reverse-coded)	4.64	2.02
Feeling of choice or control	7.06	2.27
Social class (reverse-coded)	2.68	0.98
Highest educational level attained	4.49	2.36
Political orientation	5.70	2.42
Gini index	39.67	10.48
Life satisfaction	6.84	2.27
Risk-taking personality	3.85	1.57

In order to test our hypothesis that religiosity would predict conservative political orientation more for the powerful than the powerless, we first conducted a moderated

regression analysis with no controls for each operationalization of power. We then conducted follow-up analyses controlling for a country's average religiosity and income inequality and an individual's life satisfaction and risk-taking personality, first separately and then simultaneously. All continuous predictors and covariates were centered for analyses.

In the first regression analysis, religiosity and objective power, or supervisor position, were entered as independent predictors on Step 1, and the religiosity × power interaction was entered on Step 2. There was a significant main effect of religiosity, $\beta = .11$, $t(35424) = 20.07$, $p < .001$, such that people who were religious tended to be more politically conservative overall, and there was no main effect of power, $\beta < .001$, $t(35424) < 1$, *ns*. As predicted, there was a significant interaction of religiosity and power, $\beta = .033$, $t(35424) = 4.88$, $p < .001$. To examine the nature of this interaction, we regressed political orientation on religiosity for people who supervised others (high objective power) and those who did not (low objective power). As Figure 7 illustrates, religiosity predicted conservative political orientation more strongly for people who supervised others at work (simple $\beta = .14$, $t(12797) = 16.37$, $p = < .001$) than those who did not supervise others (simple $\beta = .09$, $t(22626) = 12.93$, $p < .001$), although this latter link is also highly significant.

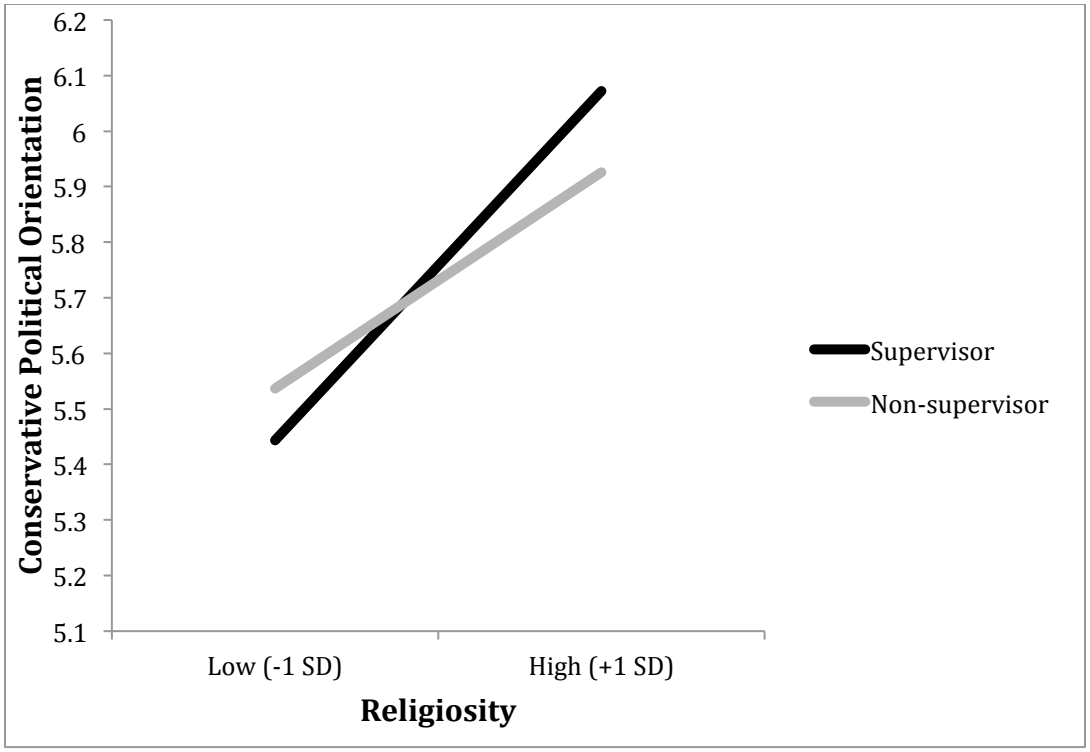

Figure 7. Religiosity predicts a conservative political orientation more strongly for supervisors, or those with high objective power, than non-supervisors, or those with low objective power (Study 4).

Next, we ran three separate regressions using the same steps above, except that we replaced objective power with the remaining power measures as predictors. With freedom of choice (subjective power) entered as a predictor, the interaction of religiosity and power again emerged ($p < .001$). Social class and education (forms of implied power) also showed similar interactions with religiosity (p's < .001). Strikingly, for all operationalizations of power, the nature of the key interaction was this: religiosity predicted greater political conservatism for people with high power more strongly than for those with low power. See Table 4 for interaction and simple slope statistics for each of the different operationalizations of power.

Table 4

Interaction of Religiosity and Power on Political Orientation According to Different Operationalizations of Power (Study 4)

Power measure	Interact'n β	*t*(df)	*p*	Level of power	Relig. β	*t*(df)	*p*
Supervisor position	.033	4.88 (35424)	<.001	High (supervisor)	.14	16.37 (12797)	<.001
				Low (non-supervisor)	.09	12.93 (22626)	<.001
Freedom of choice or control	.034	7.22 (57474)	<.001	High (+1 SD)	.11	19.08 (57474)	<.001
				Low (-1 SD)	.05	7.99 (57474)	<.001
Social class	.040	8.82 (49254)	<.001	High (middle/ upper)	.10	17.37 (28623)	<.001
				Low (lower/ working)	-.01	-.86 (20630)	.39
Education	.105	11.14 (57830)	<.001	High (college)	.14	16.70 (13423)	<.001
				Upper middle (univ.-prep secondary)	.09	10.13 (13989)	<.001
				Lower middle (vocational secondary)	.06	7.59 (14220)	<.001
				Low (primary)	.03	4.22 (16195)	<.001

Finally, to test for potential confounds, we conducted these analyses again entering the control variables—average level of religiosity within a country, income inequality within a country, an individual's life satisfaction, and an individual's risk-taking personality—as covariates on Step 1, first individually in separate regressions and then simultaneously in a single regression. The interaction of religiosity and power remained significant for each operationalization of power after controlling for each covariate individually and simultaneously (all *p*s < .001).

Discussion

This first study supports our hypothesis that the relationship between religiosity and conservative political orientation depends on power such that the link is stronger for the powerful compared to the powerless. It is notable that the interaction of religiosity and power occurred across multiple operationalizations of power, whether we examined objective power over others in the workplace, subjective power via feeling of choice or control in one's life, or the implied power of high social class or educational attainment. Each of these operationalizations, although related, captures different aspects of power, demonstrating that there are at least several ways in which power can manifest itself and have consequence for the religion–conservatism relationship in the real world.

There was also a significant main effect of religiosity overall: for individuals worldwide, higher religiosity strongly predicted a more conservative political orientation in general. This finding is perhaps not surprising and is consistent with past research on religion and politics showing that the religious tend to be

conservative in their beliefs (e.g., Brooks & Manza, 2004), perhaps due to an inherent match in values (Adorno et al., 1950). However, the results of this study suggest that the relationship between religion and politics may not be equally strong for everyone because the relationship is significantly stronger for the powerful compared to the powerless.

The WVS allowed us not only to examine our research question using measures with real world relevance, but also to include groups that tend to be underrepresented in psychological research. Given that much of psychology relies on participants from "WEIRD" societies — that is, those that are mostly Western, Educated, Industrialized, Rich, and Democratic (Henrich, Heine, and Norenzayan, 2010a, 2010b) — these worldwide survey responses are particularly valuable to understand how psychological constructs relate for non-WEIRD samples. The results from this study also suggest that the link between religiosity and political conservatism may not be specific to Christianity as might be assumed. Many religious traditions from across the globe were represented in this dataset, and thus, these findings generalize to people of many different faiths, in addition to various racial, educational, and economic backgrounds.

However, because this study was correlational, it could not fully determine the nature of the relationship between religion and politics in different contexts of power. Thus, in Study 5, we use experimental methods to examine whether thoughts of religion may causally influence political beliefs and how this effect may differ depending on power.

Study 5: Experiment on Political Beliefs

The goal of Study 5 was, first, to establish a causal relationship between religion and political conservatism by using experimental methods in a controlled laboratory setting, and second, to demonstrate that this link may depend on one's position of power, consistent with Study 4. By first putting participants in the mindset of being powerful or powerless, we were then able to examine how manipulated thoughts of religion would impact people's beliefs on a range of political issues. In line with our results from Study 4, in Study 5 we predicted that there would be an interaction between power and religion on political beliefs such that thinking about religion would increase conservative political beliefs more strongly for the powerful than the powerless.

Method

Design. This study incorporated a 2 (Power condition: powerful vs. powerless) × 2 (Religion condition: religion vs. neutral) between-subjects design and used explicit and implicit priming techniques to test the hypothesis. In order to prime power, we used a well-established explicit prime that puts participants in the mindset of being powerful or powerless (Galinsky et al., 2003; this power mindset priming method has been reliably replicated: e.g., Anderson & Galinsky, 2006; Karremans & P. K. Smith, 2010; Weick & Guinote, 2008). We implicitly primed religion by using a task specifically developed to activate thoughts of religion-related concepts without awareness (Shariff & Norenzayan, 2007; Appendices I & II). This prime is based on a classic implicit priming paradigm used across many research areas (e.g., Bargh, Chen,

& Burrows, 1996; Srull & Wyer, 1979) and the effectiveness of the implicit religion prime has since been replicated in numerous investigations (Gervais & Norenzayan, 2012; Inzlicht & Tullett, 2010; Laurin, Kay, & Fitzsimons, 2012; Sasaki et al., 2011; Toburen & Meier, 2010; Tsang, Schulwitz, & Carlisle, 2012). Implicit priming was used for the religion manipulation because there are well known lay associations between religion and politics (e.g., Sheets et al., 2011) that may have impacted participants' responses in this study.

Participants. There were 115 undergraduates who participated in this study for course credit (33 male, 76 female, 6 not specified; age: $M = 18.91$; $SD = 1.17$). The largest ethnic group in the sample was European American (49%), followed by Latino American (18%), Asian American (10%), mixed (10%), Black (4%), and other ethnicities (4%) (7 declined to answer). The largest religious group was Christian (44%), followed by no religious affiliation (32%), Jewish (9%), other religious faiths (5.2%), Muslim (3%), and Buddhist (2%) (6 declined to answer). One participant was excluded from analyses because although she was assigned to the powerful condition, she wrote about a situation in which she perceived she did not actually have power. Thus, the final sample for this study was $N = 114$.

Materials and procedure. Following informed consent, participants were randomly assigned to one of two power conditions in which they spent five minutes either writing about a time they had power over someone else (*powerful condition*) or someone else had power over them (*powerless condition*) (e.g., Galinsky et al., 2003). Next, they were exposed to either the religion or neutral implicit prime in a sentence

scramble task (adapted from Shariff & Norenzayan, 2007). In this task, each participant was given a set of 10 five-word strings and instructed to unscramble the words to create a four-word phrase or sentence by dropping the irrelevant word. In the *religion condition*, half of the strings contained words relevant to religion: God, prophet, spirit, sacred, and divine. The remaining half did not contain religion words, and neither was there a consistent theme in these alternate concepts. In the *neutral condition*, none of the words in the strings were relevant to religion, and neither did they form a cohesive theme (e.g., shoes, sky, holiday, worried).

All participants then completed a 16-item measure of political beliefs (Radicalism-Conservatism Scale; Comrey & Newmeyer, 1965; $\alpha = .57$), which included items covering a range of political issues: those with a more social or moral basis (e.g., "Public libraries should contain only books which are morally sound"), a more economic basis (e.g., "The strength of this country today is largely a product of the free enterprise system"), and a mixture of the two (e.g., "If the government must go deeper in debt to help people, it should do so"). Participants responded on a 7-point Likert scale from 1 (*strongly disagree*) to 7 (*strongly agree*), and items were scored such that higher values indexed greater political conservatism. Last, participants completed demographic items before debriefing.

Results

We conducted a 2 (Power condition: powerful vs. powerless) × 2 (Religion condition: religion vs. neutral) between-subjects ANOVA to test our hypothesis that power and religion would interact to affect political beliefs. Results showed that there

were no main effects of either power, $F(1, 110) = 1.12$, $p = .29$, or religion, $F(1, 110) = 1.00$, $p = .32$, on political beliefs, but consistent with our hypothesis, the interaction of power and religion was significant, $F(1, 110) = 7.48$, $p = .007$, $\eta^2 = .06$. For participants who were in a powerful mindset, thinking about religion without their awareness had a significant effect on their political beliefs, $F(1, 110) = 6.63$, $p = .011$, $d = 0.72$, such that people had significantly more conservative political beliefs when primed with religion ($M = 4.01$, $SD = 0.47$) than when not primed with religion ($M = 3.64$, $SD = 0.55$). However, for participants in a powerless mindset, thinking about religion did not significantly impact their political beliefs, $F(1, 110) = 1.59$, $p = .21$ (religion: $M = 3.63$, $SD = 0.62$, neutral: $M = 3.81$, $SD = 0.45$). See Figure 8 for illustration of results.

Discussion

Consistent with our predictions, the results of this study show that power moderates the effect of religion on political conservatism such that thoughts of religion causally increase politically conservative beliefs, but this effect depends on whether one is in the mindset of high or low power. This study is the first to experimentally demonstrate that implicitly priming religion increases political conservatism within a particular context. In line with research on implicitly priming stereotypical behavior (e.g., Bargh et al. 1996) and theorizing that power increases automatic cognition (e.g., Keltner et al., 2003), we found that thinking about religion without awareness increased politically conservative beliefs, but only for the

powerful. We did not find this same effect for the powerless, and if anything, the pattern of results was in the opposite direction.

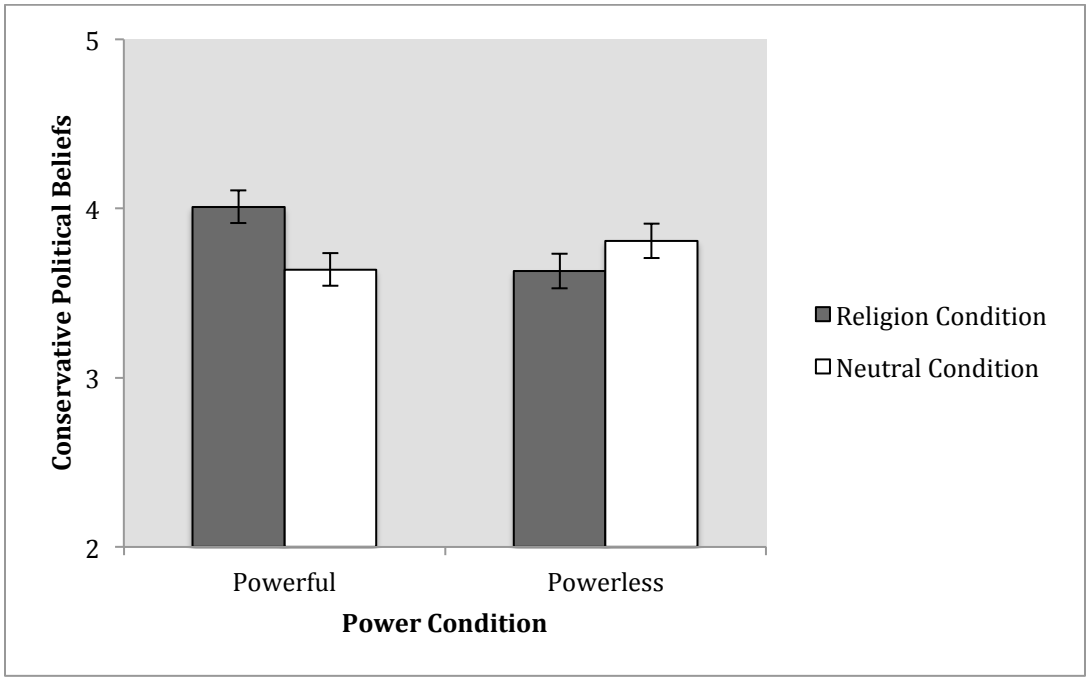

Figure 8. Interaction of religion and power on political beliefs (Study 5).

This non-significant pattern for the powerless seems somewhat inconsistent with the results from Study 4, in which we found that religiosity predicted greater political conservatism overall and was stronger for the powerful, but not absent for the powerless. Given that Study 5 was conducted in a controlled laboratory setting, it is possible that this study was able to control for other factors potentially associated with religiosity and/or power that could not be adequately controlled for in Study 4. In Study 5, we were also able to directly manipulate whether someone was feeling

powerful or powerless and whether that person implicitly thought about religion or not, providing for a cleaner demonstration of the way religion and power interact to impact political beliefs.

One limitation of the current study, however, was that the effect on politics was shown only at the level of beliefs, demonstrating that religion and power can interact to sway people toward endorsing a more conservative stance on a range of political issues. Whether religion and power together may impact politically relevant behaviors is an open question and one we address directly in the next study.

Study 6: Experiment on Political Behaviors

In Study 6, we sought to build on our findings on political beliefs from Study 5 by testing whether the interactive effect of religion and power on politics might extend to a politically relevant behavior — in particular, voting to support freedom of speech. Given that conservatives tend to endorse free speech less than liberals (Fisher et al., 1999; Lindner & Nosek, 2009; Watts & Whittaker, 1996), we predicted that people primed with religion should support freedom of speech less than those not primed with religion but that this effect would be stronger for the powerful than the powerless.

Method

Participants and design. This study utilized the same 2 (Power condition: powerful vs. powerless) × 2 (Religion condition: religion vs. neutral) between-subjects design as in Study 4. In this study, there were 119 undergraduates (37 male, 82 female; age: $M = 18.77$; $SD = 1.64$) who participated for course credit. The sample

included the following ethnicities: European American (40%), Latino American (17%), Asian American (19%), mixed (16%), Black (3%), and other ethnicities (4%). The largest religious affiliation was Christian (48%), followed by no religious affiliation (34%), other religious faiths (12%), Jewish (5%), and Muslim (2%). Two participants (each from different cells of the study design) decided not to complete the second part of the study with the dependent measure and were thus excluded from analyses for a final sample of 117.

Materials and procedure. Following procedures from Study 4, participants first completed a writing activity in which they were randomly assigned to either the *powerful condition* or the *powerless condition*. They were then randomly assigned to either the *religion condition* or the *neutral condition* for the sentence scramble task. Next, all participants were asked to take part in an ostensibly unrelated survey for the on-campus Student Affairs Committee. In the survey, participants were told that the committee would be meeting at the end of the quarter to vote on a number of policies affecting student life on campus, including a policy on "Speech and Advocacy," and that the committee is surveying student opinions before they vote. Participants read about the current Speech and Advocacy Policy, which was written in a way that emphasized the lenient nature of the current policy:

"On University grounds generally open to the public, all persons may exercise the constitutionally protected rights of free expression, speech, and assembly; these activities are allowed REGARDLESS OF INTERFERENCE WITH THE ORDERLY

OPERATION OF THE CAMPUS but must be conducted in accordance with the campus time, place and manner regulations."

They were then told that the portion of the policy written in caps would be under review, and they were reminded that under the current policy, "exercises of free expression, speech, and assembly can occur even if they disrupt classes or campus offices." They were asked to give a recommendation to the committee about how to vote on this policy. Participants responded categorically using the following options: recommend change of the current policy to ban possible "interference with the orderly operation of campus," or disruption of classes or offices (actively making the policy stricter), recommend no change to the policy (actively leaving the current policy in place), or no recommendation (passively leaving the current policy in place). Recommending change of the current policy would have limited free speech and was thus coded as "limiting free speech," and recommending no change or having no recommendation would have maintained the current lenient policy and was thus coded as "not limiting free speech." Last, participants completed demographics and were thoroughly debriefed.

Results

We examined the impact of power mindset (powerful vs. powerless) and religion priming (religion vs. neutral) on free speech endorsement (limiting free speech vs. not) using a loglinear test. Consistent with our hypothesis, the effect of religion on free speech depended on level of power, as evidenced by a three-way

interaction of religion, power, and free speech $\chi^2(1, N = 117) = 7.45$, $p = .007$, $\phi = .25$. For the powerful, thinking about religion significantly impacted their policy recommendation, $\chi^2(1, N = 59) = 4.94$, $p = .026$, $\phi = .29$, such that more people recommended changing the policy, ultimately acting to limit free speech, when they were primed with religion (46%) than not primed with religion (19%). However, for the powerless, religion did not significantly impact policy recommendation, $\chi^2(1, N = 58) = 2.56$, $p = .11$, $\phi = .21$, though there was a trend in the opposite direction such that somewhat fewer people recommended changing the policy when they were primed with religion (31%) than not primed with religion (52%). See Figure 9 for illustration of results.

Discussion

The results of this study demonstrate that religion and power interact to affect politically relevant behavior. When people were in a powerful mindset, thinking about religion without their awareness made them more likely to put forth a recommendation that would limit freedom of speech, in line with more conservative politics (e.g., Lindner & Nosek, 2009). However, when people were in a powerless mindset, implicit thoughts of religion did not make them more likely to limit free speech, and in fact, they seemed to be slightly more supportive of free speech, though this effect was not statistically significant.

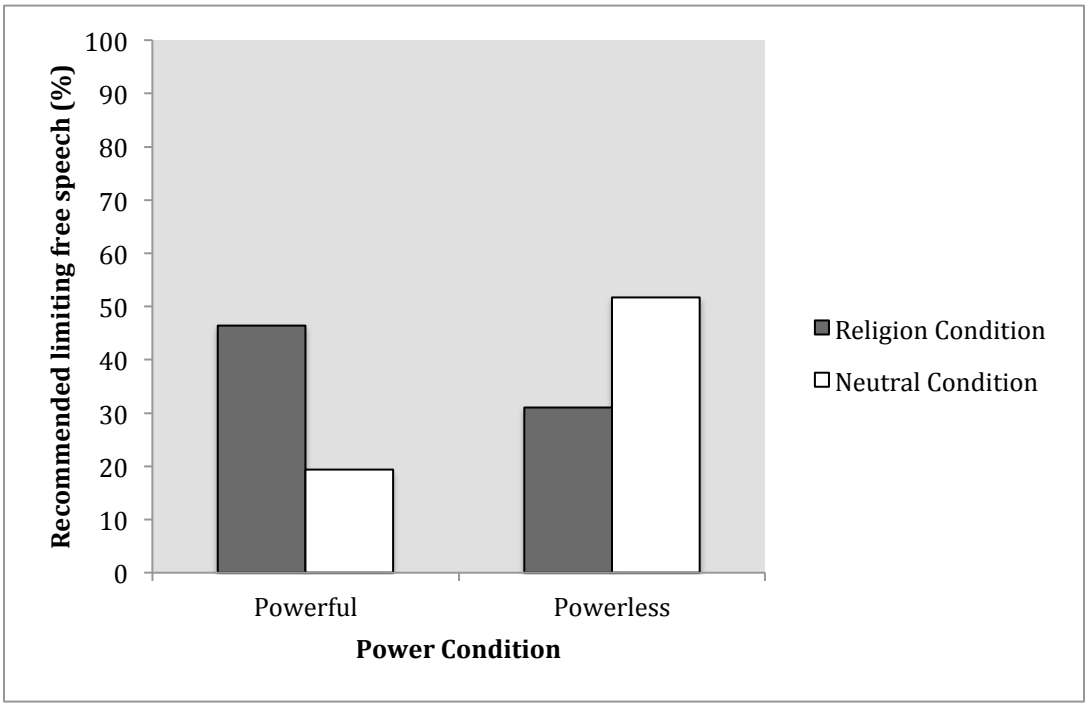

Figure 9. Interaction of religion and power on political behavior (Study 6).

Taking together the results from Studies 5 and 6, it seems clear that thoughts of religion may actually lead people to hold more politically conservative beliefs and engage in more politically conservative behaviors, but this effect may be limited to contexts of high power given that the religion–conservatism link was virtually eliminated for those with low power. Studies 4–6 show consistently that religion and power interact to impact politics such that religiosity or thoughts of religion lead to political conservatism more for the powerful than the powerless. Therefore, we have provided an answer for the question of *when* religion may increase political conservatism. The outstanding question, then, is *why*. In the next study, we sought to

investigate the interactive effect of religion and power at a much deeper level by testing a possible explanation for why this interaction occurs.

Study 7: Mediated Moderation

To explain why the effect of religion on political conservatism may be stronger for the powerful versus the powerless, we tested beliefs about the legitimacy of status differences between groups as a potential mediator. Given that people may be especially likely to favor policies benefiting the dominant group in society, consistent with more conservative political beliefs (Jost & Burgess, 2010), when they believe that existing status differences between groups are *legitimate* (i.e., fair, just, or moral; Levin et al., 1998), and also given that religion may provide one way for the powerful to legitimize group inequalities (e.g., Solt et al., 2011), legitimacy beliefs may serve as one potential explanation for the religion–power interaction on political conservatism. In order to test whether legitimacy beliefs provide an explanation for the interaction effect, it must be the case that: 1) religion and power interact to increase conservatism, 2) religion and power also interact to increase legitimacy beliefs, 3) legitimacy beliefs increase conservatism, and 4) legitimacy beliefs explain the initial link from religion × power to conservatism. In testing each of these four points, we predicted that the moderating effect of power on the relationship between religion and politics would be mediated by legitimacy beliefs, establishing mediated moderation (Muller, Judd, & Yzerbyt, 2005).

Method

Participants and design. There were 120 undergraduates (40 male, 80 female; age: $M = 18.98$; $SD = 1.02$) who participated in this study for course credit. This study used the same 2 (Power condition: powerful vs. powerless) × 2 (Religion condition: religion vs. neutral) design as in Studies 5 and 6. This sample included the following ethnicities: European American (38%), Asian American (25%), Latino American (20%), mixed (11%), Black (2%), Native American (2%), and other ethnicities (3%). Participants in the sample were Christian (42%), Jewish (4%), Buddhist (3%), other religious faiths (9%), and of no religious affiliation (41%).

Materials and procedure. As in Studies 5 and 6, participants completed the power manipulation (powerful vs. powerless), followed by the implicit religion prime (religion vs. neutral). Next, each participant was given a 4-item measure of legitimacy beliefs (e.g., "Differences in status between groups in America are fair;" adapted from Levin et al., 1998; $\alpha = .61$) on a Likert scale from 1 (*strongly disagree*) to 7 (*strongly agree*). Participants then completed the same 16-item political beliefs measure from Study 5 (e.g., "If the government must go deeper in debt to help people, it should do so;" Radicalism–Conservatism Scale; Comrey & Newmeyer, 1965; $\alpha = .57$) on a 7-point Likert scale, and responses were coded such that higher values indexed greater conservatism. Finally, participants provided demographic information before being thoroughly debriefed.

Results

Following procedures outlined in Muller et al. (2005), we conducted a series of regressions in order to test for mediated moderation. In the first regression equation:

$$Y = \beta_1 + \beta_2 X + \beta_3 Mo + \beta_4 XMo + \varepsilon_1,$$

Y is the dependent variable (political beliefs); β_1 is the intercept; β_2 is the overall effect of the independent variable (religion condition) on the dependent variable across the two levels of the moderator; β_3 is the effect of the moderator (power condition) on the dependent variable across the two levels of the independent variable; β_4 is the interaction effect of the independent variable and the moderator (religion × power), or change in the overall effect of the independent variable on the dependent variable as the moderator changes from level one to level two; and ε_1 is error. We established in the first regression that there was a significant interaction of power and religion on political beliefs, $\beta = .33$, $t(119) = 2.06$, $p = .042$. In a separate two-way ANOVA, pairwise comparisons showed that the effect of religion on political conservatism did not reach significance for people in high power ($p = .15$) or low power ($p = .14$), though the direction of effects was in the predicted direction: for the powerful, people had more conservative political beliefs when primed with religion ($M = 3.90$, $SD = 0.38$) than when not primed with religion ($M = 3.70$, $SD = 0.56$), and for the powerless, people had less conservative political beliefs when primed with religion ($M = 3.65$, $SD = 0.57$) than not ($M = 3.85$, $SD = 0.54$).

In the second regression, we tested whether the religion × power interaction above also predicted the proposed mediator:

$$Me = \beta_5 + \beta_6 X + \beta_7 Mo + \beta_8 XMo + \varepsilon_2,$$

where *Me* is the mediator (legitimacy beliefs); β_5 is the intercept; β_6 is the effect of the independent variable on the mediator across the two levels of the moderator; β_7 is the effect of the moderator on the mediator across the two levels of the independent variable; β_8 is the interaction effect of the independent variable and the moderator (religion × power), or change in the overall effect of the independent variable on the mediator as the moderator changes from level one to level two; and ε_2 is error. Results of this regression analysis showed that the religion × power interaction significantly impacted legitimacy beliefs, $\beta = .45$, $t(119) = 2.89$, $p = .005$. To illustrate the nature of this interaction, we conducted a separate two-way ANOVA followed by pairwise comparisons and found that, for the powerful, thinking about religion significantly increased their beliefs that group status differences are legitimate ($p = .03$). However, for the powerless, thinking about religion marginally decreased their beliefs in the legitimacy of group differences ($p = .055$).

In the third and final equation, we tested whether legitimacy beliefs predicted conservatism, reducing the initial effect of power × religion on conservatism:

$$Y = \beta_9 + \beta_{10}X + \beta_{11}Mo + \beta_{12}XMo + \beta_{13}Me + \varepsilon_3,$$

where Y is the dependent variable; β_9 is the intercept; β_{10} is the residual direct effect of the independent variable on the dependent variable across the two levels of the moderator; β_{11} is the average effect of the moderator on the dependent variable within the two levels of the independent variable and at the mean level of the mediator; β_{12} is the interaction effect of the independent variable and moderator, or change in the residual direct effect of the independent variable on the dependent variable as the moderator changes from level one to level two; β_{13} is the average effect of the mediator on the dependent variable within the two levels of the independent variable and across the two levels of the moderator; and ε_3 is error. This last equation revealed a significant effect of the mediator — legitimacy beliefs — on conservatism, $\beta = .39$, $t(119) = 4.41$, $p < .001$, and crucially, the interaction effect of religion × power found in the first equation ($p = .042$) was reduced to non-significance in this final equation, $\beta = .15$, $t(119) < 1$, $p = .32$. The Sobel's test showed that the magnitude of the reduction was significant, $z = 2.42$, $p = .016$, demonstrating mediated moderation. See Figure 10 for an illustration of this mediated moderation effect.

Discussion

Taken together, these results demonstrate that the moderating effect of power on the religion–conservatism link is mediated by beliefs in the legitimacy of group status differences. More specifically, the effect of priming religion on political beliefs is *significantly different* for the powerful versus the powerless (i.e., moderation), and

this difference can be *explained by* the extent to which people believe that status differences between groups are legitimate (i.e., mediation).

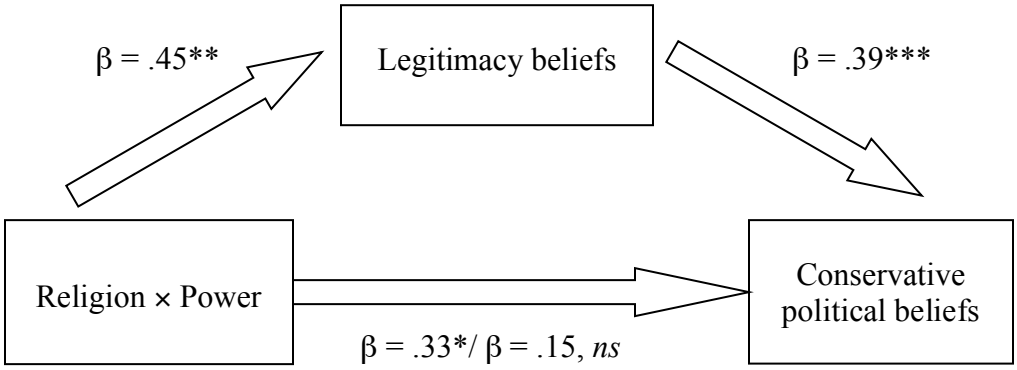

Figure 10. Interaction of religion and power on conservative political beliefs mediated by legitimacy beliefs (Study 7).

In Studies 4–6 we found that religiosity or thoughts of religion may increase political conservatism, particularly for those with high power, and in Study 7 we examined a specific reason why these different effects of religion on conservatism for the powerful versus the powerless may occur. That is, the combination of religion and power makes people believe that status differences between groups are legitimate or fair and subsequently leads them to think or behave more in line with conservative political beliefs. The results of this study shed light on core issues in system justification theory and social dominance theory, and we consider these issues in detail in the General Discussion.

General Discussion

As alluded to by past research on religion and politics for different groups (e.g., A. B. Cohen et al., 2009; Parenti, 1967; Wald & Martinez, 2001), the present research demonstrates that the relationship between religion and political conservatism might be more complicated than previously thought, and that the nature of their relationship may vary systematically depending on power. Though research on religion often focuses on relatively high-powered individuals in American society (e.g., rich, highly educated; Henrich et al., 2010a, 2010b), the present research contributes to a more nuanced understanding of religion's impact on political leanings by carefully considering the influence of power within the social context. Across all four studies, our results consistently demonstrate that religion increases politically conservative beliefs and behaviors more strongly for the powerful than the powerless. We demonstrate this effect using multiple conceptualizations and measurements of our variables of interest: we examined religion by measuring religious values and practice (Study 4) and by reminding people of religious concepts without their awareness (Studies 5–7); we examined power by using measures with real world relevance (e.g., objective position of power in the workplace in Study 4) and by inducing different mindsets of power experimentally (Studies 5–7); and we examined politics by measuring political left–right orientation (Study 4), beliefs about various political issues (Studies 5 and 7), and behavior toward a specific politically relevant issue (Study 6). By showing that the interaction of religion and power may be detected worldwide using ecologically valid measures of our variables (Study 4), we

demonstrate that this effect is generalizable and relevant to real world issues. We also tested legitimacy beliefs as a potential mediator of the interaction effect (Study 7) to illuminate one of the psychological processes underlying this phenomenon. Taken together, this research provides generalizable, causal, and explanatory evidence that the religion–conservatism link is much stronger for the powerful than the powerless, suggesting that power may be a crucial factor in understanding the psychological effects of religion.

Qualifying the Link Between Religion and Politics

In demonstrating that the interaction of religion and power can impact political conservatism, the current research is the first to establish a causal link between religion and political beliefs and behaviors within the context of power. Consistent with correlational findings that racial or national group membership may moderate the relationship between religion and politics (A. B. Cohen et al., 2009; Parenti, 1967; Wald & Martinez, 2001), we show that thinking about religion can causally increase politically conservative beliefs and behaviors but that this effect may only be true for people in the experimentally manipulated mindset of high power. In particular, in this research we were able to unite findings from quite varied intergroup comparisons by focusing on a psychological commonality across groups: whether they possessed or lacked power.

An interesting issue raised by the present research is that of *power*, the focus of this research, versus *status*, and whether the link between religion and political conservatism should be specifically moderated by power and not status. In contrast to

power, which is defined as having control over resources (Galinsky et al., 2003), status is defined as having respect or esteem in the eyes of others (Magee & Galinsky, 2008). These two constructs have been theoretically and empirically distinguished in the literature, and thus, status does not necessitate the possession of power and vice versa (Blader & Y.-R. Chen, 2012; Fiske, 2010; Keltner et al., 2003; Magee & Galinsky, 2008). For instance, some people of high status may at times have relatively little power, as in the vivid example given by Keltner and colleagues (2003) of "a readily identified religious leader in line at the Department of Motor Vehicles" (p. 266), even though it may be the case that power and status tend to co-occur in real world contexts more often than not. In instances where high status *is* likely to come with great power, as may be the case in groups with higher social class or education levels (Study 4 in the present research) or certain racial or ethnic majority groups (A. B. Cohen et al., 2009; Wald & Martinez, 2001), we may expect that status also moderates the relationship between religion and political conservatism, but only because power is also present. In the present study we clearly demonstrated that power, whether in concert with status as in Study 4 or manipulated in isolation in Studies 5–7, plays an important role in the religion–conservatism link. As the goal of this research was not to differentiate between power and status, we do not provide any evidence that status separate from power would have a similar moderating effect. Furthermore, other research suggests that status may not independently act in the same way as power. Blader and Y.-R. Chen (2012) demonstrated that high-power groups may be less egalitarian than low-power groups, consistent with the findings of

the present research, given that people with high power tend to perceive a sizable amount of social and psychological distance from those with low power. Yet they also show that high-*status* groups may try to enact justice, or fairness toward others, *more* than low-status groups given that people with high status tend to be concerned about how others regard them, suggesting that status without power may not moderate the religion–conservatism link in the same way that we have shown.

The present research also makes important contributions to pre-existing explanations for the religion–conservatism link. Given the seemingly inherent match in the content of their values, some have theorized that religion and political conservatism may be compatible at the level of ideology (Adorno et al., 1950; Wilson, 1973), making them more palatable to individuals with particular personality traits, such as low openness to experience (Jost, Glaser, et al., 2003; Saroglou, 2002) or a less analytic cognitive style (Pennycook, Cheyne, Seli, Koehler, & Fugelsang, 2012; Tetlock, 1983). Individual differences may indeed provide one potential explanation for the "religious right," yet an additional, complementary possibility suggested by the current findings is that aspects of the social context, such as power, may also shape the way that religion influences one's to politics.

The present investigation focused on religion and power as important but not sole contributors to political proclivities. There are many reasons why people maintain certain political beliefs that may involve neither religion nor power, including not only personality traits, but also family upbringing, peer groups, region, and age. Therefore, it is possible that religion's influence on politics may vary by

other aspects of the person or situation in addition to power. Future research should examine whether and how position of power may interact with other key factors to influence political conservatism.

Understanding Religion's Impact on Thought and Behavior as Rooted in Context and Experienced by Individuals

Based on these variations in the relationship between religion and politics, it seems clear, perhaps in hindsight, that the content of religious teachings may not be as uniformly conservative as once thought. Indeed, religious support cannot be claimed solely by the right, as religion has played a role in many liberal political movements throughout history. American Civil Rights leaders, most notably Reverend Martin Luther King, Jr., were among the most passionate advocates of the liberally tinged messages of religion: "Blessed are the poor in spirit…" or "those who have been persecuted for the sake of righteousness, for theirs is the kingdom of heaven" (Matthew 5:3, Matthew 5:10; New American Standard Bible). In more recent years, the large-scale protest in Burma led by Buddhist monks represents another instance of religion on the side of the powerless (Beech, 2007). People from all walks of life may take to religion for all different reasons, and we argue that the way religion influences their thoughts and behaviors may also vary in significant ways depending on the context.

As research on religion gains momentum in mainstream psychology, it will become increasingly important for the phenomenon itself and its impact on human psychology to be studied from different perspectives and with diverse samples. Some

form of religion can be found everywhere and may feature similar components, such as belief in supernatural beings or ritualized social activities, even across very distinct communities (Atran & Norenzayan, 2004; Boyer, 2003). Yet the way religion impacts people's thoughts and behaviors may not be the same everywhere and for everyone. Past research has shown that the cultural context can shape religion's impact on people's values and the way they cope (Sasaki & H. S. Kim, 2011), and individual differences at the level of genes can constrain the influence of religious thoughts on prosocial behavior (Sasaki et al., 2011). Consistent with these findings, recent research has shown that other contextual factors, such as level of engagement with political discourse, can also moderate the association between religiosity and political conservatism (Malka, Lelkes, Srivastava, Cohen, & Miller, 2012). In fact, the content of religious teachings can be so multifaceted that it may be impossible to determine its impact on human psychology with much certainty without also considering the context in which it occurs and the perspective of the person who experiences it.

The current investigation makes important contributions to psychological research on religion by demonstrating that power, a very well studied topic in social psychology, may moderate the way religion impacts people's thoughts and behaviors in the political sphere. One implication of this research is that, beyond the realm of politics, religion and power may also play crucial roles in other issues involving clashes of social or economic interests between individuals or groups. Given that the interaction of religion and power is linked to beliefs about the legitimacy of group differences, it is likely that power is a particularly important factor moderating the

effect of religion on outcomes relevant to the concept of fairness or justice. Research has shown, for example, that religiosity tends to increase outgroup prejudice (i.e., racial prejudice; Hall, Matz, & Wood, 2010; M. K. Johnson, Rowatt, & LaBouff, 2010) as well as ingroup favoritism (M. K. Johnson, Rowatt, & LaBouff, 2011), and thus, it is possible that the relationship between religiosity and different forms of prejudice may be particularly strong for those in a more powerful mindset. It may also be important to examine whether the effect of religiosity on outgroup prejudice, or other potentially harmful consequences of religious involvement, may be reduced in powerless mindsets.

Building on Theories of Power, System Justification, and Social Dominance

Our findings also contribute to the growing body of research on the way power influences cognition. Given that religion is likely to be stereotypically associated with conservative political beliefs, priming the concept of religion may activate conservative beliefs in memory, and the literature on power and cognition suggests that this link in memory should be stronger for the powerful than the powerless. Research shows that the powerful tend to rely more on automatic information processing and implicit attitudes (Guinote, Willis, & Martellotta, 2010; Keltner et al., 2003) and experience greater ease of retrieval from memory compared to the powerless (Weick & Guinote, 2008), and thus, the results from the present study are consistent with theories of power.

The current research concurrently builds on theories of power, system justification, and social dominance theory by showing how the combination of

religion and power may increase beliefs in legitimacy, a system justifying ideology. According to system justification theory, everyone is motivated to justify the existing social system to some degree (Jost & Banaji, 1994; Jost et al., 2004), but whether someone is more or less justifying of the system depends significantly on the context (Kay & Friesen, 2011). People do not always justify current circumstances. It depends on what may be in their best interest practically, in order to achieve or maintain higher power or better social circumstances, and/or psychologically, in order to increase psychological well-being by reducing anxiety. Sometimes the powerful may justify the status quo more than the powerless because they are motivated to hold on to their position of power (Feygina, Jost, & Goldsmith, 2010; Levin et al., 1998), consistent with social dominance theory (Sidanius & Pratto, 1999). Yet other times, members of low-power groups may, paradoxically, justify the system *more* than those in high-power groups because low-power groups benefit the least from the status quo, thus experiencing the greatest need to reduce anxiety about their position of disadvantage, and system justification is one way to reduce this psychological anxiety (Jost, Pelham, et al., 2003). Our research suggests that religion may allow the powerful to justify or legitimize their position of high power for practical reasons, in order to maintain power. However, religion may not encourage the powerless to justify their position of low power in attempts to increase their psychological well-being. If anything, it appears that religion may make the powerless more aware of their low power and less likely to legitimize their position of disadvantage. A worthwhile avenue for future investigation would be to extend this research using

theories of collective action (e.g., van Zomeren, Postmes, & Spears, 2008) to determine the different conditions under which religious groups with low power will strive to achieve social change rather than justify the state of affairs and their powerlessness.

Concluding Remarks

Throughout history and still today, the influence of religion on worldwide political affairs is undeniable. Yet, although it may seem that religion mainly contributes to a more conservative political climate, the present research suggests that the effect of religiosity or thoughts of religion on politics may not be one-dimensional and instead may vary in important ways. Indeed, the "religious right" may not be a truism so much as an artifact of an assumed social context — namely, the possession or lack of power.

CHAPTER IV

Religion Priming Differentially Increases Prosocial Behavior Among Variants of the Dopamine D4 Receptor (DRD4) Gene

Original citation:

Sasaki, J. Y., Kim, H. S., Mojaverian, T., Kelley, L. D., Park, I., & Janušonis, S. (2011). Religion priming differentially increases prosociality among variants of Dopamine D4 Receptor (DRD4) gene. *Social Cognitive and Affective Neuroscience*. Advance online publication.

What compels some people to commit to prosocial causes and others to shy away? Accumulating evidence suggests that, in addition to societal influences, prosocial behavior may also be influenced by differences in genes (twin studies: e.g., Gregory, Light-Häusermann, Rijsdijk, & Eley, 2009; Rushton, 2004; Rushton, Fulker, Neale, Nias & Eysenck, 1986; Stevenson, 1997; genotyping studies: e.g., Bachner-Melman et al., 2005; Reuter, Frenzel, Waltner, Markett, & Montag, 2010) and, crucially, by the interaction of genes with certain aspects of the environment. Genetic susceptibility to influences from the environment may compel some people to act more prosocially, but only under particular conditions (Bakermans-Kranenburg & Van IJzendoorn, 2011; Knafo et al., 2011). This gene-environment interaction (G × E) perspective (e.g., Caspi et al., 2003; D. T. A. Eisenberg, Campbell, Gray, & Sorenson, 2008; Taylor et al., 2006) can be applied to social psychological phenomena to broaden the way that situational influences on behavior are understood. In the present study, I examine how the situational priming of religion may affect prosocial behavior differently depending on one's genes.

DRD4 and Prosocial Behavior

Relevant to the topic of prosocial behavior—an act performed in order to benefit another person even at a cost to the self—is a candidate polymorphism located in the dopamine D4 receptor (DRD4) gene, which is involved in mediating cortical dopamine neurotransmission (McClernon, Hutchison, Rose, & Kozink, 2007; Rivera et al., 2008; Zhong et al., 2010). The exon III region of DRD4 contains a variable number tandem repeat (VNTR) of 48 base pairs (Van Tol et al., 1992), and certain variants of the DRD4 VNTR polymorphism have been associated with risk-taking and antisocial traits and

behaviors, including increased novelty or sensation seeking (Ebstein et al., 1996), gambling (Pérez de Castro, Ibáñez, Torres, Sáiz-Ruiz, & Fernández-Piqueras, 1997) and financial risk-taking (Kuhnen & Chiao, 2009), attention deficit hyperactivity disorder (ADHD; for meta-analyses, see Faraone, Doyle, Mick, & Biederman, 2001; Maher, Marazita, Ferrell, & Vanykov, 2002) and conduct disorders (Kirley et al., 2004), as well as decreased altruism (Bachner-Melman et al., 2005) and insensitivity to reciprocal fairness (Zhong et al., 2010). These findings support the general conclusion that people with certain DRD4 variants are more socially deviant than others, attracted to novelty and risk while shying away from social conventions and prosocial causes.

Some researchers have argued, however, that such a conclusion may be too broad and that DRD4 is better conceptualized as a susceptibility or plasticity gene (Bakermans-Kranenburg & Van IJzendoorn, 2006, 2007, 2011; for further discussion of DRD4 and other plasticity genes, see Belsky et al., 2007; Belsky et al., 2009; Obradović & Boyce, 2009; Way & Taylor, 2010). According to this perspective, "risky" genetic variants are not strictly linked to prosocial versus antisocial behaviors, but rather, are more susceptible to certain environmental influences.[13] For instance, a recent study showed that donating behavior was not related to attachment style for children with DRD4 non-susceptibility variants, but secure attachment predicted greater donating behavior for children with DRD4 susceptibility variants. Insecurely attached children with DRD4

[13] Though most genetic susceptibility studies are correlational, experimental or quasi-experimental studies also show that people with genetic susceptibilities are more affected by interventions (Bakermans-Kranenburg, van IJzendoorn, Pijlman, Mesman, & Juffer, 2008; Blair, 2002; Klein Velderman, Bakermans-Kranenburg, Juffer, & Van IJzendoorn, 2006).

susceptibility variants donated the least, and interestingly, securely attached children with the same susceptibility variants donated the most (Bakermans-Kranenburg & van IJzendoorn, 2011). Similarly, another study showed that children with DRD4 susceptibility variants were more likely to behave prosocially when parenting involved punishment, whereas parenting style was unrelated to prosocial behaviors for children with non-susceptibility variants (Knafo et al., 2011). Therefore, those with a genetic susceptibility to the environment may exhibit increased prosocial behavior when there is an external influence encouraging prosociality but decreased prosocial behavior when this pressure is absent. For those without the susceptibility variant, prosocial behavior may not be as easily swayed by environmental influences.

In the present research, we focused on a particular aspect of the social context—religious salience—among people with different DRD4 variants to test whether those with susceptibility variants would be more strongly influenced to behave prosocially in response to a religion prime. Environmental input in the form of experimental priming may have parallel G × E findings with life environment, and thus, an open question is whether genetic environmental susceptibility moderates the extent to which people are influenced by priming.

Religion and Prosocial Behavior

Religion exists in some form across every human culture (Atran & Norenzayan, 2004; Boyer, 2003), and many of the world's major religions explicitly teach prosociality as a virtue (Batson, Schoenrade, & Ventis, 1993). The "golden rule"—that one should treat others as one would like to be treated—can be found in

different forms across numerous religio-philosophical texts, from the Bible of Judeo-Christian faiths (Leviticus 19:18) to the Tao Te Ching of Taoism (Lao-tzu, Ch. 49) and the Mahabharata of Hinduism (Anusasana Parva, Section 113, Verse 8). Thus, it may come as no surprise that studies using self-report measures of prosocial behavior show that religious people tend to perceive themselves as prosocial and report higher levels of altruism or charitable deeds compared to non-religious people (Batson et al., 1993). Behavioral studies or those using less subjective measures of prosociality, however, have produced mixed results. Some observational research has found that religious people demonstrate highly prosocial behaviors (e.g., Georgianna, 1984), while other behavioral studies have shown that religious people are no more likely than non-religious people to perform altruistic acts (e.g., Darley & Batson, 1973). Thus, the link between religiosity and actual prosocial behavior is tenuous at best (Preston et al., 2010). A better question to ask on the issue of religion and prosociality, then, is not *whether* religion causes prosocial behavior, but *when* or *for whom*.

It may be that religion has an effect on prosocial behavior to the extent that it acts as an environmental pressure to behave prosocially. Shariff and Norenzayan (2007) found that inducing implicit thoughts of God increased prosocial behavior among the religious and atheists alike. The authors of this study argue that perhaps when people are reminded that "God is watching them" (Shariff & Norenzayan), they are more likely to act prosocially towards others. A separate group of researchers found results consistent with this view: subliminally priming participants with positive religious words increased the

number of charity pamphlets taken at the end of the study (Pichon, Boccato, & Saroglou, 2007). If it is the case that religion can act as an environmental pressure to encourage prosocial behavior, then reminders of religion may increase prosocial behavior particularly for people who are predisposed to be sensitive to influences from the environment.

Indeed, considering that past research on this topic has been mixed, the effect of religion on prosocial behavior may not be uniform across various groups and contexts. It is likely that some key moderators are at play. Twin studies have suggested that the relationship between religion and prosocial behavior is likely to be explained by both genetic and environmental effects (L. B. Koenig, McGue, Krueger, & Bouchard, 2007), but little, if any research has examined this topic from a G × E perspective.

Study 8: DRD4–Religion Prime Interaction

Building on G × E research, this study examines whether people with DRD4 susceptibility variants are more impacted by religion priming compared to those with DRD4 non-susceptibility variants. We included people of both Caucasian and East Asian ancestry in order to test for this G × E effect across distinct ethnic groups. Past research in different populations has shown that DRD4 variants have alleles ranging from 2- to 11-repeats (Ding et al., 2002) and that the distribution of variants differs significantly across ethnic groups (Chang, Kidd, Livak, Pakstis, & Kidd, 1996), perhaps due to different patterns of migration throughout history (C. Chen, Burton, Greenberger, & Dmitrieva, 1999). Across populations, the 2-, 4-, and 7-repeat alleles are the three most common variants, together comprising at least 90% of observed allelic diversity (Wang et al.,

2004). The most common allele in Caucasian and East Asian populations is the 4-repeat allele, which is considered the non-susceptibility variant. In Caucasian populations, the 7-repeat allele is the second most common allele, followed by the 2-repeat allele. However, in East Asian populations, the 2-repeat allele is the second most common after the 4-repeat, and the 7-repeat is extremely rare (Chang et al., 1996). Studies with Caucasian samples have usually shown that risky/antisocial tendencies are highest among people with the 7-repeat allele (e.g., Ebstein et al., 1996) but sometimes show that these tendencies are highest among people with the 2-repeat allele (Keltikangas-Jarvinen, Raikkonen, Ekelund, & Peltonen, 2004). Studies on East Asian samples typically show that these tendencies are highest among people with the 2-repeat allele (Zhong et al., 2010) or the 2- and 7-repeat alleles combined (Reist et al., 2007).[14]

Evidence suggests that the 2-repeat allele was derived from the 7-repeat allele (Wang et al., 2004), and that these alleles share some biochemical properties and functions (Reist et al., 2007). DRD4 variants coded by the 2- and 7-repeat alleles, compared to the 4-repeat allele, show a lower efficiency activating the downstream effector when dopamine binds to them (Asghari et al., 1995; Wang et al., 2004). Therefore, the 2- and 7-repeat alleles exhibit a "suboptimal" response to dopamine and lower dopaminergic signaling (Wang et al., 2004), which is thought to underlie their

[14] A few researchers have examined the association between 5-repeat alleles and novelty seeking, but this analysis is not always possible given the particularly low frequency of 5-repeat alleles (it is a rare variant, along with 3-, 6-, and 8-repeat alleles; Ding et al., 2002). See Tsuchimine et al. (2009) for finding that 5/5 DRD4 genotypes (1.8% of sample) were highest on novelty seeking trait in Japanese sample and Keltikangas-Jarvinen et al. (2004) for finding that 5-repeat alleles (3.2% of sample) were similar to 2-repeat alleles in novelty seeking among Finnish.

connection to novelty seeking traits (Klugar, Siegfried, & Ebstein, 2002), ADHD (Swanson et al., 2001) preference for immediate behavior reinforcement (Tripp & Wickens, 2008), and perhaps also their environmental sensitivity.

Thus, in the present research we grouped 2-repeat and 7-repeat alleles together as susceptibility variants and other alleles as non-susceptibility variants across European Americans and Asians/Asian Americans.[15] We hypothesized a gene (DRD4 susceptibility variant) × religion (implicit religion prime) interaction on prosocial behavior such that people with susceptibility variants would show greater prosocial behavior (i.e., more willingness to volunteer for pro-environmental causes) when primed with religion than not, while people with non-susceptibility variants would not be affected by the religion prime.

Method

Participants. One hundred and eighty undergraduates participated in this study for course credit or $10. However, two participants were excluded from analyses because one had no DRD4 data available, and one was ethnically mixed. Thus, the final sample included 178 participants (68 males, 106 females, and 4 declined to answer) of both European American (n = 109) and Asian/Asian American backgrounds (n = 69) with ages ranging from 17 to 53 (M = 19.32, SD = 2.96).[16]

[15] Although culture can moderate the association between genes and behavior (H. S. Kim et al., 2010a, 2010b, 2011; Sasaki, H. S. Kim, & Xu, 2011), we did not expect a moderating impact of culture in this study because religious teaching emphasizes prosociality in the same manner in both cultures as mentioned above.

[16] Data were collected as part of a larger study (see H. S. Kim et al., 2011).

Materials and procedure. Following informed consent, participants were randomly assigned to either the religion or neutral implicit priming activity, which was introduced as a "verbal fluency task" (Shariff & Norenzayan, 2007). All participants were given a set of 10 five-word strings and instructed to unscramble the words to make a four-word phrase or sentence by dropping the irrelevant word. For example, a participant given the string "felt she eradicate spirit the" could create the sentence "she felt the spirit." Of the 10 sentences given in the religion prime, half contained words relevant to religion: God, prophet, spirit, sacred, or divine. The remaining half did not contain religion words, and neither was there a consistent theme in these alternate concepts. For the neutral prime, all 10 sentences contained non-religion words that did not form a cohesive theme (e.g., shoes, sky, holiday, worried).

In order to tap into prosocial behavior toward society in general rather than a specific person or group, we measured participants' willingness to volunteer (i.e., donating time) for prosocial causes supporting the environment. After being introduced to an ostensibly separate study surveying students' opinions about environmental issues on campus, they read brief descriptions of 36 actual organizations and clubs available at the college (e.g., the Green Campus Program, which promotes energy efficiency on campus) and indicated their behavioral intentions to get involved with each on a checklist (i.e., being added to the mailing list, participating in projects, requesting more information about the organization), with higher scores on the checklist indexing greater willingness to volunteer for pro-environmental causes. Last, participants completed a trait measure of

religiosity (e.g., “My religious beliefs lie behind my whole approach to life”; Worthington et al., 2003) and demographics (e.g., age, sex, ethnicity) and provided saliva samples before debriefing.

DNA extraction and genotyping. Participants provided a saliva sample using the Oragene Saliva kit OG-500 (DNA Genotek, Ontario, Canada) for DNA analysis at the end of the study. Saliva collection and DNA extraction were conducted according to manufacturer (Oragene) recommendations. DRD4 genotypes were identified using the labeled forward primer VIC-5’-AGG ACC CTC ATG GCC TTG -3’ and the unlabeled reverse primer 5’-GCG ACT ACG TGG TCT ACT CG -3’ (Lichter et al., 1993). Polymerase chain reaction (PCR) was performed in a total volume of 10 µL containing 25 ng of DNA, 0.5 µl of each primer (10µM stock), 0.1 µl Takara LA Taq, 5 µl 2x GC Buffer II (Takara Bio Inc., USA), and 1.6 µl dNTP. PCR cycling conditions consisted of an initial 1 min denaturation at 95°C, followed by 30 cycles of 94°C for 30 sec, 62°C for 30 sec, 72°C for 2 min, and finally 72°C for 5 min. PCR products were electrophoresed on an ABI 3730 DNA analyzer (Applied Biosystems) with a LIZ1200 size standard (Applied Biosystems). Data collection and analysis used Genemapper software (Applied Biosystems).

Results

DRD4 distribution and variant grouping. Consistent with past research on similar ethnic groups (Chang et al., 1996; C. Chen et al., 1999), the 4/4 DRD4 variant was the most common among European Americans (53.2%) and Asian/Asian Americans (60.9%). For European Americans, variants with at least one 7-repeat

allele were the next most common (23.9%), followed by variants with at least one 2-repeat allele (18.3%), and the main variants with 4- and 7-repeat alleles (4/4, 4/7, 7/7) were in Hardy-Weinberg equilibrium, $\chi^2(2, n = 79) = 2.92$, $p = .23$. For Asians/Asian Americans, variants with at least one 2-repeat allele were the next most common (37.6%) after the 4/4 variant, followed by those with at least one 7-repeat allele (1.4%), and the main variants with 4- and 2-repeat alleles (4/4, 2/4, 2/2) were in Hardy-Weinberg equilibrium, $\chi^2(2, n = 67) = 0.39$, $p = .82$.

Participants with at least one susceptibility variant (i.e., 2- or 7-repeat allele) were grouped together for analyses, and participants with only non-susceptibility variants (i.e., 3-, 4-, 5, or 6-repeat allele) were grouped together—a grouping that takes into account the functional and evolutionary similarity of DRD4 2- and 7-repeat alleles (Reist et al., 2007; see also Jovanovic, Guan, & Van Tol, 1999). There were 71 participants with susceptibility variants (44 European Americans and 27 Asian/Asian Americans) and 108 with non-susceptibility variants (68 European Americans and 40 Asian/Asian Americans).

Manipulation check and religiosity equivalence by genotype. As a priming manipulation check and a test of religiosity equivalence by genotype, we conducted a two-way analysis of variance (ANOVA) on religiosity by Prime (religion vs. neutral) and DRD4 (2-/7-repeat alleles vs. no 2-/7-repeat alleles). Confirming the manipulation check, results showed that there was a significant main effect of Prime, $F(1, 170) = 15.00$, $p < .001$, such that people reported higher religiosity when primed with religion ($M = 3.39$, $SD = 1.58$) versus not ($M = 2.52$, $SD = 1.32$). Results also

established religiosity equivalence by genotype given that there was no main effect of DRD4, $F(1, 170) = 0.72$, $p = .40$. That is, there was no difference in religiosity between people with 2-/7-repeat alleles ($M = 2.86$, $SD = 1.42$) and without 2-/7-repeat alleles ($M = 3.02$, $SD = 1.58$), and thus, any differential impact of the religion prime on prosocial behavior between DRD4 variants is not likely to be due to systematic differences in trait religiosity by genotype. Finally, there was no interaction between Prime and DRD4 on religiosity, $F(1, 170) = 0.01$, $p = .97$.

Effects of ethnicity. Generally, the ethnicity of participants did not significantly affect prosocial behavior. A three-way ANOVA of DRD4 (2-/7-repeat alleles vs. no 2-/7-repeat alleles), Prime (religion vs. neutral), and Ethnicity (European American vs. Asian/Asian American) showed no main effect of Ethnicity on willingness to volunteer ($p = .504$), and Ethnicity did not significantly interact with any other variables: Ethnicity × DRD4 ($p = .566$), Ethnicity × Prime ($p = .442$), and Ethnicity × DRD4 × Prime ($p = .292$). Removing the non-significant three-way interaction term revealed that the two-way interaction of interest—DRD4 × Prime—was significant for both European Americans and Asians/Asian Americans ($p = .046$ and .004, respectively);[17] therefore, the results are reported collapsed across ethnicities.

[17] Results are consistent for European Americans when comparing 7-repeat alleles to 4-repeat alleles, as in Bachner-Melman et al. (2005), though the interaction is marginal ($p = .088$) due to reduced sample size. Results are consistent for Asians/Asian Americans when comparing 2-repeat to 4-repeat alleles, as in Zhong et al. (2010). The interaction remains significant ($p = .001$).

DRD4–religion prime interaction. In order to test our hypothesis, we conducted a two-way ANOVA of DRD4 variant and religion prime on prosocial behavior. There was no main effect of DRD4, $F(1, 174) = 0.23$, $p = .636$, and a significant main effect of religion, $F(1, 174) = 4.19$, $p = .042$, $\eta^2 = .02$, such that people implicitly primed with religion ($M = 21.11$, $SD = 15.56$) were more willing to volunteer than people not primed with religion ($M = 18.16$, $SD = 14.17$). Importantly, this main effect was qualified by a significant interaction of DRD4 variant and religion prime, $F(1, 174) = 11.87$, $p = .001$, $\eta^2 = .06$. Planned pairwise comparisons showed differential effects of the religion prime on prosocial behavior for 2-/7-repeat allele and non-2-/7-repeat allele carrier groups. Whereas the religion prime did not significantly impact willingness to volunteer for people without 2-/7-repeat alleles, $p = .266$, people with 2-/7-repeat alleles were significantly more willing to volunteer when primed with religion ($M = 26.08$, $SD = 14.76$) than not primed with religion ($M = 14.28$, $SD = 12.00$), $p = .001$, Cohen's $d = 0.88$. Pairwise comparisons split by prime showed that people with 2-/7-repeat alleles were less willing to volunteer than people without 2-/7-repeat alleles in the neutral prime condition ($M = 20.64$, $SD = 14.93$), $p = .040$, Cohen's $d = 0.47$. However, people with 2-/7-repeat alleles were more willing to volunteer than people without 2-/7-repeat alleles in the religion prime condition ($M = 17.52$, $SD = 15.35$), $p = .006$, Cohen's $d = 0.57$. See Figure 11 for key findings.

Discussion

Summary of Results

Our findings demonstrate that DRD4 interacts with religion to impact prosocial behavior. We found an overall main effect of implicitly priming religion, consistent with previous research on the effect of religion primes on prosocial behavior (Pichon et al., 2007; Shariff & Norenzayan, 2007). However, the interaction of DRD4 and religion shows how implicit thoughts of religion may not encourage prosocial behavior in the same way for everyone.

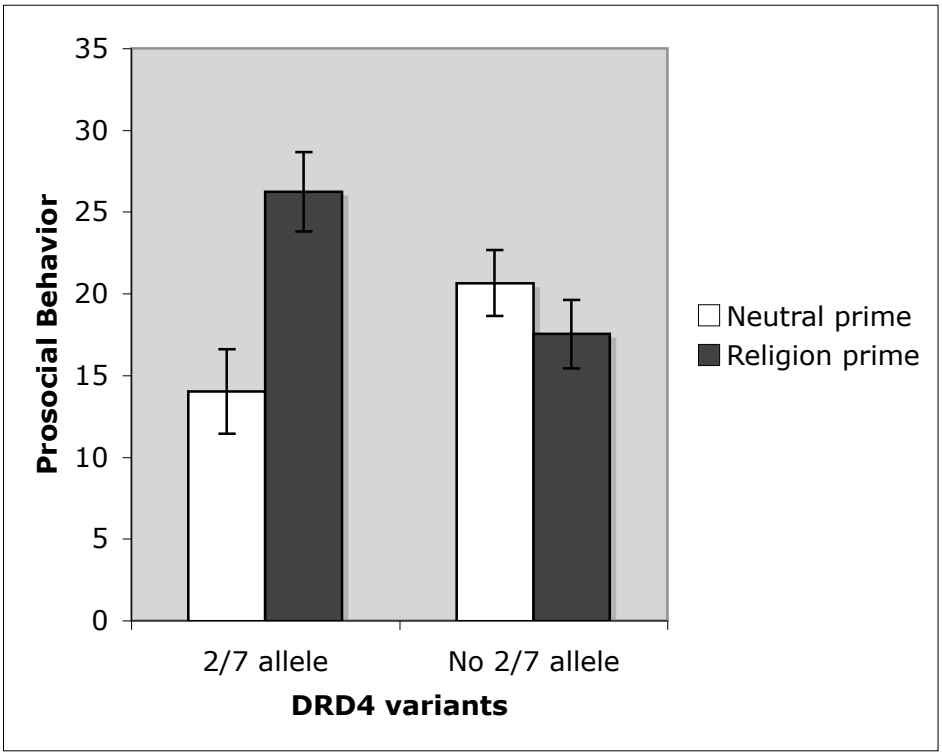

Figure 11. Religion prime increases prosocial behavior for those with DRD4 2-/7-repeat alleles but not for those without 2-/7-repeat alleles. Error bars represent standard error of the mean (Study 8).

These results build on past research on DRD4 and altruism (e.g., Bachner-Melman et al., 2005), showing that people with DRD4 susceptibility variants were less willing to volunteer compared to people with non-susceptibility variants in situations where there was no environmental pressure to behave prosocially, as in the neutral prime condition. Yet when those with susceptibility variants were implicitly primed with religion, they were the most willing to volunteer—more than people with the same variants who were not primed with religion, and more than people with non-susceptibility variants who were primed with religion. The current findings are in line with research showing that people with susceptibility variants demonstrate greater prosocial behavior when they experience environmental pressure to do so (Bakermans-Kranenburg & van IJzendoorn, 2011; Knafo et al., 2011), but this research is the first to show that a situational prime has differential effects for people with different genetic predispositions.

Implications for Theories on Morality

Philosophers and laypeople alike have long been preoccupied with issues of morality, discussing what makes an action moral or what motivates moral behavior. Some believe that the greatest moral actions derive from a sense of duty, as Kant argued, but why do people feel a sense of duty to behave prosocially in the first place? Given the role of dopamine in reward-related processes (Nemirovsky, Avale, Brunner, & Rubinstein, 2009), an interesting, if controversial, possibility is that people with certain genetic variants are predisposed to behave prosocially for particular reasons. Some people may be motivated to act prosocially because the act

itself makes them feel good, which is perhaps the case for people without 2- or 7-repeat alleles, since there is evidence that 4-repeat alleles tend to exhibit greater dopamine signaling compared to those with 2- or 7-repeat alleles (Wang et al., 2004). Others may engage in prosocial behavior because they feel pressured to do so, which may apply to those with 2-/7-repeat alleles, who tend to experience lower dopamine signaling compared to those with 4-repeat alleles (Wang et al.). Interestingly, these same people with lower baseline dopamine signaling may exhibit the most prosocial behavior when they have an external reason to do so. The introduction of genes into the moral philosophy debate may change the way people understand motivations for moral behavior.

Psychologists have examined the topic of morality from the perspective of moral reasoning (e.g., Kohlberg, 1969) to the more recent perspective of moral intuitions (e.g., Haidt, 2008). Given the present findings, G × E research may make important contributions to a broad array of research on morality. Some research has already shown that DRD4 and other dopamine-related genes may predict altruistic behaviors (Bachner-Melman et al., 2005), preferences for fairness (Zhong et al., 2010), and disgust sensitivity (Kang, Kim, Namkoong, & An, 2010). Yet a fuller picture of morality may come from investigating how genetic tendencies and situational variables interact to impact different aspects of moral judgment.

The present research focused on religion as an external influence to behave prosocially, but people extend good graces for reasons unrelated to religion, including secular institutions and laws (Shariff & Norenzayan, 2007) and social responsibilities

(which tend to vary by culture; see J. G. Miller et al., 1990), among other motivations (see Batson & Powell, 2003 for review of research on prosocial behavior). Thus, future research should examine whether genetic sensitivity to these other forms of environmental influence also have consequence for prosocial behavior.

Building on the Susceptibility Gene Hypothesis in G × E Research

A large body of research is accumulating in support of the idea that certain genes are associated with susceptibility, plasticity, or sensitivity in response to environmental inputs (e.g., Bachner-Melman et al., 2005; Belsky et al., 2007, 2009; Obradović & Boyce, 2009; Way & Taylor, 2010). This Susceptibility Gene Hypothesis is in contrast to the notion that genetic variants map onto "good versus bad" traits and behaviors, and it seems best able to account for G × E studies, which show different outcomes for people with similar genetic tendencies depending on differences in their environments (e.g., Taylor et al., 2006). In conjunction with previous studies, the present research suggests that people with particular genetic tendencies are more likely to be impacted by different levels of environmental influence—from implicit experimental priming to the relational or interpersonal level (e.g., attachment-related: see Bakermans-Kranenburg & van IJzendoorn, 2011) and to the situational and societal level (e.g., cultural: see H. S. Kim et al., 2010a, 2010b, 2011).

Although some previous G × E research on European American and East Asian cultures has shown gene-culture interactions on behavioral outcomes (e.g., emotional support; H. S. Kim et al., 2010b), it is important to note that gene-culture

interactions should only be expected when cultural norms differ with respect to the outcome of interest. Given that there are no known differences in the way religion emphasizes prosociality in mainstream American and East Asian cultures (see Batson et al., 1993), the current study did not show different outcomes for these groups according to genotype.

The current research is the first to demonstrate that an experimentally manipulated situational prime moderates the link between genes and an outcome, suggesting that environmental influences examined in G × E research should be extended to include features of the situational context that fluctuate from moment to moment. It is possible that, due to different genetic susceptibilities to environmental influence for prosocial or antisocial behavior, people with certain DRD4 variants may have systematically different pro-/anti-social responses to certain experimental conditions. In addition, people with genetic variants of other genes, such as 5-HTTLPR, tend to be more susceptible to environmental influence for stress reactivity (Taylor et al., 2006) and may therefore show different stress-related responses to experimental conditions. Future research should examine how different susceptibility genes may be sensitive to different types of experimental manipulations.

Concluding Remarks

Debates surrounding morality — what is right versus wrong — may not be settled by scientific investigation. What research can provide, however, is an explanation (rather than a justification) of the conditions under which different people choose to act on what is right. Using the G × E perspective in concert with implicit

experimental techniques, this research opens exciting possibilities for understanding how different people choose to behave prosocially and why.

CHAPTER V

Conclusion

The study of religion in psychology is fascinating to consider from a sociological perspective. Despite it being one of the oldest forms of large-scale social interaction, religion has not yet gained the widespread interest in psychology to match its scope of influence. There are many possible explanations for this missing piece in psychology literature, but personal interests (or disinterests) aside, psychologists certainly have their work cut out for them in unpacking religion. As Baumeister (2002) writes, "Like television, money, sex, and aggression, religion is an important fact of life, and psychology cannot pretend to be complete unless it understands religion alongside these other phenomena" (p. 165). As evidenced by religion's increased presence as a topic in prominent scientific journals (e.g., Norenzayan & Shariff, 2008, *Science*) and the noticeable rise in attendance at religion-relevant conference symposia, mainstream acceptance of research on religion is clearly gaining momentum. Still, many basic puzzles remain, not the least of which are, to return to the questions posed in Chapter I: what is religion and how can it be studied scientifically?

Summary of Findings and the Multipronged Approach to Religion Research

Across a range of topics, from coping to prosocial behavior, and using a variety of methods and perspectives, including cultural psychology and genetics, this research has demonstrated how religion can be multiply conceptualized and studied in psychology. In Chapter II, I found that religion interacts with culture to influence values and coping. For people from more individualistic cultures who tend to value personal agency, religion facilitated acceptance of the situation to gain an overall

sense of control in difficult times, whereas this did not seem to be the case for people from more collectivistic cultures. On the other hand, people seemed to use religion to gain a sense of community to cope with difficulties regardless of cultural background, but this was especially true for people from collectivistic cultures who tend to value relationships over personal agency. In Chapter III, I tested the generalizability of the "religious right" phenomenon and found that religion may not lead to political conservatism for everyone. In fact, the religion–conservatism link depended on power such that religion was related to increases in political conservatism significantly more for the powerful than the powerless. Last, in Chapter IV, I demonstrated that the effect of priming religion on prosocial behavior was moderated by genes such that people with a genetic predisposition for sensitivity to environmental pressures to behave prosocially exhibited the most prosocial behavior in response to religion priming, whereas people without this genetic predisposition showed the same amount of prosocial behavior regardless of the contextual prime. Overall, this research has shown how the effects of religion on thought and behavior may critically depend on key moderators located in the person, situation, or culture.

Additionally, this research highlights the importance of using multiple methods, different perspectives, and diverse samples to address questions involving religion in psychology. Across eight studies, this research addressed questions of religion's impact in people's everyday lives (Study 3), in different cultures (Studies 1–3) and worldwide (Study 4), in the public sphere of cultural products (Study 1), and as a causal force in individual minds (Studies 2 & 5–8). Much of this research was

crafted from the perspective of social psychology, which focuses on the power of the situation (e.g., as in Studies 4–7 on power as a moderator), but this research also drew on the gene–environment interaction framework (Study 8) to understand religion's influence. Also central to this research was the cultural psychological perspective. The idea that people (indeed, even the undergraduates in the majority of psychology studies) are always in a cultural context is an essential point to understand as a cognitive or behavioral science researcher because investigations of human thought and behavior always involve culture, whether or not it was intended in the studies. In order to truly understand human psychology, researchers need to consider how people may at times think and act differently according to the cultural context, just as people may think and act differently according to the situation. Failure to do so will likely contribute to an understanding of only a specific type of human being (i.e., WEIRD people: Western, Educated, Industrialized, Rich, and Democratic; Henrich, Heine, and Norenzayan, 2010a, 2010b), which is not in keeping with the ultimate goals of the field. In sum, a multipronged approach to studying religion in psychology may contribute to a more complete and accurate understanding of the phenomenon.

Putting the Current Investigation in Perspective

In addition to demonstrating empirically that the impact of religion may depend on a variety of factors and should be studied in a number of ways, a central goal of this research was to specify and utilize a working theoretical framework in order to piece together existing research on religion, including the investigations presented here, and to make new predictions for future research in this area. In this

section, I address this goal by integrating religion research on one specific behavioral outcome—namely, prosocial behavior—while also offering a number of possibilities for future investigations on these topics.

Using the framework specified in Chapter I, I consider the findings from Chapter IV together with past research to understand how religion may be related to prosocial behavior. Chapter IV provided some evidence that religion priming (Figure 12, part a) increases the tendency to behave prosocially for people with certain DRD4 variants (Figure 12, part b) who may be more susceptible to pressures from religion priming to behave prosocially (Study 12). In addition, some past research has shown that religious people (Figure 12, part c) may be more sensitive to religion priming (Shariff & Norenzayan, 2007, Study 2; Figure 12, part a), and that intentions to behave prosocially seem to vary depending on characteristics of the target of prosocial behavior [e.g., people may act more prosocially toward others who they perceive to be more deserving of help (Pichon & Saroglou, 2009) or relationally close or a part of their ingroup (Norenzayan & Shariff, 2008; Saroglou, Pichon, Trompette, Verschueren, & Dernelle, 2005; Tan & Vogel, 2008); see Figure 12, part d]. Taking these existing studies together, the picture of religious prosociality is becoming somewhat clearer.

Yet there are other aspects of the person, situation, and culture that have yet to be tested in this framework. For instance, what role might culture play in the relationship between religion and prosocial behavior? As discussed in Chapter IV, different religions worldwide emphasize prosociality as a virtue in the same way.

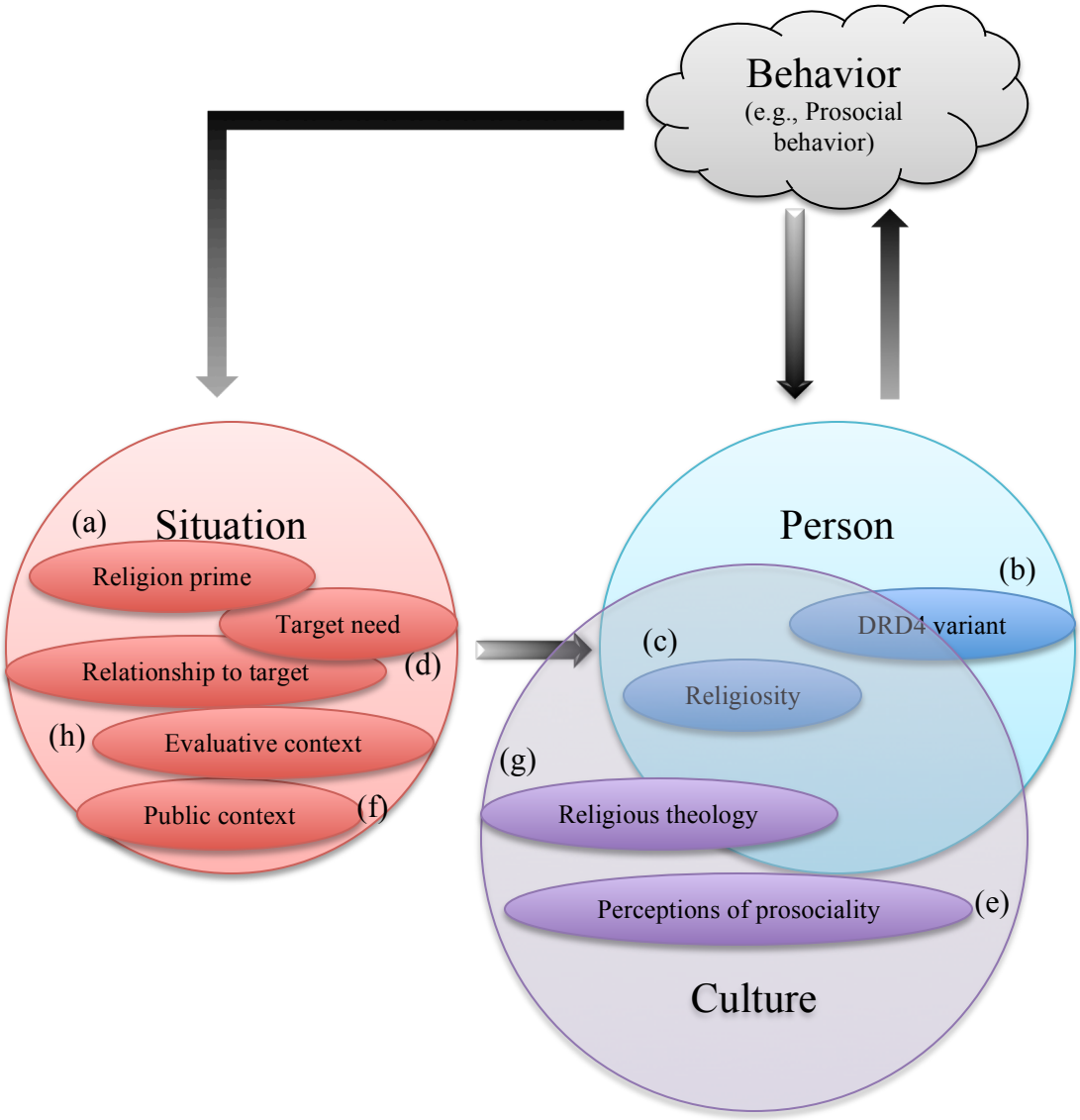

Figure 12. The case of religion and prosocial behavior within a working theoretical framework. Although religion priming (a) may generally lead to greater prosocial behavior, this relationship may also depend on: 1) aspects of the person, such as genes (b) and beliefs (c) and 2) aspects of the situation, such as perceived need of and relationship to the target (d) and the public (f) and evaluative nature of the context (h), in interaction with 3) aspects of the culture, such as perceptions of prosocial behavior (e) and shared religious theologies (g).

Thus, one may not expect that religion increases prosocial behavior more for some cultures than others overall. An interesting possibility, though, is whether religion may encourage prosocial behavior *for different reasons* across cultures. People everywhere likely agree that prosocial acts are inherently good, but research has shown that cultures may differ in the degree to which they consider prosocial behavior to be a matter of social responsibility or personal choice (J. G. Miller et al., 1990; Figure 12, part e). In cultures where people perceive helping others to be a social responsibility, reminders of religion (Figure 12, part a) may lead to greater prosocial behavior especially in public contexts (Figure 12, part f), where behavior is potentially under the scrutiny of others. However, in cultures where people perceive prosociality to be a personal choice, reminders of religion may not have as strong an impact in public versus private settings.

Other aspects of the cultural context may play a role as well. As argued by A. B. Cohen (2009), religion can be conceptualized as a form of culture, and thus people with different shared religious beliefs may also show systematic differences in their patterns of behavior. Just as religion may potentially encourage prosocial behavior for different reasons across (national or ethnic) cultures, it is possible that people of different religious traditions may also differ in their reasons for engaging in prosocial behavior. For example, people from Calvinist versus Arminian traditions within Protestantism differ on the issue of divine salvation, or the question of whether believers can lose God's favor based on their actions (Figure 12, part g). While Calvinists believe that one can never lose salvation, Arminians believe it is possible

to lose salvation due to wrongdoing. Based on findings that Arminians may be more sensitive to evaluative threats, showing heightened self-awareness in these situations compared to Calvinists (Sasaki & Cleveland, 2012), it is possible that Arminians may behave more prosocially in response to religion priming (Figure 12, part a) compared to Calvinists when they are placed in an evaluative context (Figure 12, part h).

There are of course many ways in which culture, as well as other aspects of the person or situation, may have consequence for the link between religion and prosocial behavior. I offer the proposed framework simply as a starting point for investigators to think about how their current conceptualizations of religion can relate to a behavior of interest in different ways depending on other conceptualizations and moderating factors that may have been previously overlooked.

Is Religion Ultimately "Good" or "Bad?"

Inevitably, when it comes to a topic like religion, people are interested to know the religious beliefs of the researchers conducting a particular study on the topic. Aside from the social reasons for determining whether other investigators share their beliefs,[18] one reason people would probably like to know a researcher's stance on the issue of God or religion is to gain clues about their motives: Are they trying to prove that religion is ultimately good? Or is their goal to show, once and for all, that

[18] These social reasons are usually bad ones for scientists to have because whether religious creeds are true or not has no bearing on the issue of whether religion should be understood from a psychological perspective. It only matters whether a construct is true in the minds of people in order for it to be important and useful in psychology. Just as beliefs themselves need not be "real" things for them to be important in understanding human cognition and behavior (A. S. Cohen & German, 2010), religion or God need not be real in order for them to have real impacts on people's lives.

the world would be better off without it? People often assume, at times rightly so, that investigators who are religious themselves have the former goal in mind, while staunch atheists aim for the latter.

The question of whether religion is "ultimately" good or bad, while legitimate, has produced no consistent response from a scientific perspective, and based on the known body of research relevant to this issue, I would argue that answering this question should not be the goal of scientific inquiries on religion. Admittedly, it is at times irresistible to discover an outcome of religion and *not* form a prescriptive conclusion about what people should do or believe based on that particular finding. Just as learning a new bit of evidence that eating complex carbohydrates is good for you (after years of hearing it is bad for you) pushes people to include more carbs in their diet (when for years they excluded them), learning that religious involvement is linked to longevity, for instance (McCullough, Hoyt, Larson, H. G. Koenig, & Thoresen, 2000), may make people wonder whether they should be joining their nearest church or synagogue. Yet the problem with this habit of prescriptive inference is that what makes religion "good for you" is not clearly defined and varies significantly across people and contexts. Indeed, one does not have to read far into the literature on religion to see that the conclusion for how people *should* live their lives with respect to religion, from a scientific point of view, is not at all clear.

Evidence for the Good and Bad of Religion

Research tells us that religious thought is natural (Bloom, 2007) and has origins far back in human history (Mann, 2011, June), which perhaps explains why

humans have cognitive mechanisms that support the ability to have these sorts of beliefs in the first place (Boyer, 2003). Those searching for the good in religion may fixate on the finding that religious people lead healthier lives (W. R. Miller & Thoresen, 2003), but this finding is true mostly in places with difficult living conditions or in cultures where other people have strong religious beliefs, too (Diener et al., 2011). Certain ideas of God may be particularly effective for enforcing moral imperatives to do good (Roes & Raymond, 2003), yet governments can at times provide similarly effective imperatives (Kay et al., 2008; Shariff & Norenzayan, 2007). Thoughts of religion have the potential to encourage prosocial behavior even toward strangers (Shariff & Norenzayan, 2007), but at the same time, religion can also contribute to outgroup prejudice (Hall et al., 2010; M. K. Johnson et al., 2010), support for radicalism and extreme violence (Ginges, Hansen, & Norenzayan, 2009; McGregor, Nash, & Prentice, 2010), and the legitimacy of group status differences in the minds of the powerful (Study 7 in Chapter III). Some have argued that costly commitments to religious groups can result in greater longevity for the group more so than secular groups with similar requirements (Sosis, 2004), arguably because of religion's effectiveness in increasing within-group cooperation over and above baseline levels of cooperation seen among non-kin[19] (Norenzayan & Shariff, 2008; Shariff & Norenzayan, 2007; Sosis, 2004). Yet the extent to which religion

[19] To be clear, findings on religion and cooperation do not address the question of why people cooperate with strangers *at all* (see Delton, Krasnow, Cosmides, & Tooby, 2011 for explanation of cooperation in one-shot encounters), but rather, why people in religious groups may be even *more* cooperative with non-kin compared to people who are not in religious groups.

encourages people to cooperate with others may depend on an individual's predispositions at the level of genes (Study 8 in Chapter IV), and thus, religion may not lead to greater prosociality for all.

Religion is neither all good nor all bad based on the current bank of evidence, and thus, attempting to settle this debate scientifically would prove a futile endeavor. As other researchers have pointed out, religion has both positive and negative consequences, yet at the same time, the ways in which religion exerts its influence are not altogether incoherent (Bloom, 2012; Graham & Haidt, 2010). Many of religion's effects appear to revolve around motivations relevant to the core aspects of religion put forth in Chapter I. For instance, religion seems to be about commitment to a group that shares one's beliefs, which can lead to social fusion within a group but also fission between groups. Religion also seems to center around belief in a supernatural being who cares about moral behavior and has the capacity to allay or arouse existential anxieties (e.g., via salvation or damnation); these qualities can be at the same time comforting and frightening and may thus be related to positive and negative psychological outcomes. In sum, any of the core aspects of religion can be capable of both good and bad depending on a number of key factors. Therefore, a beneficial practice for researchers studying religion, regardless of their personal religious or non-religious creeds, may be to consider a variety of behavioral outcomes that are both positive and negative in nature.

Practical Implications of the Present Research

It is critically important to address basic questions of how religion might be impacting people for reasons beyond the theoretical. In a sense, there is an urgency to answer these questions because so much of the world's population is religious, and religion has, as discussed above, been linked to so many good and bad outcomes. Take the 9/11 terrorist attacks for instance. Irrespective of one's personal religious convictions, it is painfully clear that research should address why something like this could have occurred. Just as it is important for the behavioral sciences to study how people cope with such an event in the aftermath, so too should the field have something to say about the antecedents of the event from a psychological point of view. The minds of Mother Teresa and Osama bin Laden may have shared the same underlying belief in an all-knowing, all-powerful God, yet in one mind, religion led to peace and in the other, to destruction. A one-dimensional view of religion coupled with broad sweeping claims of its effects will not answer the question of how religion can manifest itself so differently in two minds. Only when the field adopts a more nuanced view of what religion is and how it impacts people will scientists more effectively answer some of the most pressing practical issues involving religion in the world today.

Final Thoughts

Although religion may at times have general and far-reaching effects, it is more often the case that its implications are heavily qualified by a number of factors. Religion is, to a certain extent, what individuals and societies make of it. Individuals use religion for their own benefit, to cope with their personal difficulties or engage in

a tightknit social network. Society uses religion for its own benefit, too, perhaps to increase feelings of likeness and encourage cooperation in large groups. Yet religion is not an immutable phenomenon that exerts its force monolithically. As it moves across societies and through time, it is inevitably changed by its surroundings and the people who experience it. Thus, not only are people impacted by religion, but people can impact the way religion carries out its influence—at the level of the person, through individual minds and bodies, and at the level of society, through social contexts and the beliefs and values shared among cultural beings.

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Appendix I
Religion Implicit Prime
(Shariff & Norenzayan, 2007)

Please complete the following verbal fluency task. Do your best to complete every item.

Instructions:

Unscramble the following groups of words to make a four-word phrase or sentence by dropping the irrelevant word.

Example:

high winds the flies plane → the plane flies high

1. felt she eradicate spirit the _____
2. dessert divine was fork the _____
3. appreciated presence was imagine her _____
4. more paper it once do _____
5. send I over it mailed _____
6. evil thanks give God to _____
7. yesterday it finished track he _____
8. sacred was book refer the _____
9. reveal the future simple prophets _____
10. prepared somewhat I was retired _____

Appendix II

Neutral Implicit Prime (Shariff & Norenzayan, 2007)

Please complete the following verbal fluency task. Do your best to complete every item.

Instructions:

Unscramble the following groups of words to make a four-word phrase or sentence by dropping the irrelevant word.

Example:

high winds the flies plane → the plane flies high

1. fall was worried she always _____
2. shoes give replace old the _____
3. retrace good have holiday a _____
4. more paper it once do _____
5. send I over it mailed _____
6. saw hammer he the train _____
7. yesterday it finished track he _____
8. sky the seamless blue is _____
9. predictable he shoes his tied _____
10. prepared somewhat I was retired _____