Brands: The Opiate of the Nonreligious Masses?

Ron Shachar

Faculty of Management, Tel Aviv University, Tel Aviv 69979, Israel; and Fuqua School of Business, Duke University, Durham, North Carolina 27708, shachar@duke.edu

Tülin Erdem

Stern School of Business, New York University, New York, New York 10012, terdem@stern.nyu.edu

Keisha M. Cutright, Gavan J. Fitzsimons

Fuqua School of Business, Duke University, Durham, North Carolina 27708
{kmw25@duke.edu, gavan@duke.edu}

Are brands the "new religion"? Practitioners and scholars have been intrigued by the possibility, but strong theory and empirical evidence supporting the existence of a relationship between brands and religion is scarce. In what follows, we argue and demonstrate that religiosity is indeed related to "brand reliance," i.e., the degree to which consumers prefer branded goods over unbranded goods or goods without a well-known national brand.

We theorize that brands and religiosity may serve as substitutes for one another because both allow individuals to express their feelings of self-worth. We provide support for this substitution hypothesis with U.S. state-level data (field study) as well as individual-level data where religiosity is experimentally primed (study 1) or measured as a chronic individual difference (study 2). Importantly, studies 1 and 2 demonstrate that the relationship between religiosity and brand reliance only exists in product categories in which brands enable consumers to express themselves (e.g., clothes). Moreover, studies 3 and 4 demonstrate that the expression of self-worth is an important factor underlying the negative relationship.

Key words: brands; brand reliance; brand choice; religion; self-expression; self-worth
History: Received: February 3, 2010; accepted: June 16, 2010; processed by Robert Meyer. Published online in *Articles in Advance*.

1. Introduction

The interesting relationship between brands and religion has attracted the attention and imagination of both scholars and practitioners for many years. Yet strong theory and empirical evidence in support of this relationship is scarce. This research addresses this issue. We begin by developing a theoretical foundation for this relationship and proceed to provide important empirical support.

Some years ago, the global advertising agency Young & Rubicam asserted that brands are the new religion and that brand builders are similar to missionaries of Christianity and Islam (Tomkins 2001). A few years later, Belk and Tumbat (2005) argued that the Macintosh brand has a community following that is equivalent to a religion in many ways, characterized by a strong network of adherents, faith in a "savior" (Steve Jobs), and general enmity toward a common evil (IBM, Microsoft, etc.). These are just two of several examples that demonstrate a shared interest in the fascinating relationship between religion and brands among both practitioners and academic scholars. They also demonstrate the great breadth with which people can think of the terms "brands" and "religion." For example, the term *brands* may lead one to think of concepts related to "loyalty," "community," "value," and "positioning," among others. Certainly, no single study can examine the relationship among all possible concepts related to brands and religion. In this study we focus on the concepts of "brand reliance" and "religiosity," which we consider to be quite fundamental to developing an understanding of how religiosity impacts consumers' decisions.

We define brand reliance as the degree to which consumers prefer branded goods over unbranded goods or goods without a well-known national brand (e.g., store brands). This definition captures the value that consumers place on the benefits they derive from brands. These benefits can take many forms, including simplifying decision making, reducing risk, and providing benefits that go beyond functional benefits, such as offering experiential and self-expressive benefits (Aaker 1991). Consumers differ in how much they value such benefits and, thus, in how much they value brands. We introduce the notion of *brand reliance* to capture the value that consumers place on the benefits they derive from brands.

The notion of brand reliance is clearly related to the concept of brand equity. One way of thinking

about brand reliance is as the weight that the individual is placing on the equity of a brand. However, whereas brand equity is a characteristic of a brand, brand reliance is a characteristic of the individual. Furthermore, whereas brand equity is a characteristic of a specific brand, brand reliance is a characteristic of the individual when she assesses brands in general. Its close connection to brand equity demonstrates the fundamental nature of brand reliance and thus our interest in using this concept to represent brands in this study.

The term *religiosity* is also quite broad. It can be perceived, among other things, as the degree to which one believes in God or participates in the activities of a religious community (e.g., gathering in church every Sunday). In this study we define it as *the centrality of religion to the individual as reflected in his or her attitude and behavior towards life.* This definition is quite similar to the one used by Pearce et al. (2003) and enables us to develop a general perspective of how religiosity is associated with brand reliance by leveraging a variety of important operationalizations of the construct. We return to the definition of religiosity in the following.

A priori, it is unclear whether brand reliance and religiosity are indeed related (i.e., whether the correlation between them is different from zero) and if they are, what the nature of this relationship is (i.e., is the correlation positive or negative?). Thus, in what follows, we first review previous work that provides some evidence suggesting that the broad concepts of religiosity and brands may be related. We then briefly report the results of a field study that indicate that our specific constructs of interest are in fact related, and negatively so. Building on this preliminary evidence, we then discuss what we believe to be an important mechanism underlying this relationship and present four studies in support of our hypotheses. Specifically, we will suggest that religiosity and brand reliance are negatively related, at least in part, because both allow individuals to express aspects of themselves to others. One specific aspect that both brands and religion are well positioned to express is a sense of self-worth. We argue for a compensatory mechanism such that when an individual expresses her self-worth via one medium (be it brands or religion), she needs the other medium less. Thus, brands and religion function as substitutes in expressing self-worth.

To test these hypotheses, studies 1 and 2 demonstrate that the negative relationship between religiosity and brand reliance appears at the individual level—whether religiosity is experimentally primed (study 1) or measured as a chronic individual difference (study 2). Furthermore, these studies highlight the role of self-expression by demonstrating that this relationship only exists in product categories in which the brands enable consumers to express themselves (e.g., clothes) and not in product categories in which the brands satisfy only functional needs (e.g., batteries).

Studies 3 and 4 show that it is the expression of self-worth that leads to the negative relationship between brand reliance and religiosity. Specifically, study 3 demonstrates that priming religiosity as a vehicle for expressing self-worth leads to a decrease in brand reliance, but priming religiosity as satisfying other needs (e.g., security) does not lead to the same result. Study 4 directly identifies the mediating role of self-worth expression in this relationship. Furthermore, throughout these studies, we reduce the plausibility of alternative explanations related to demographic variables, materialism, and demand characteristics.

2. Related Literature and a Theoretical Framework

We begin by discussing previous findings that speak to the possibility of a general relationship between religion and brands. We then briefly report the results of a field study that provides insight into the relationship between our specific constructs of interest: brand reliance and religiosity. Next, we discuss the important roles of brands, focusing on their role in allowing individuals to express themselves, particularly as it relates to expressing self-worth. We also discuss research that has demonstrated that religious beliefs and practices can also express self-worth. We then present our theoretical argument for the relationship between religiosity and brand reliance. We suggest that religiosity and brand reliance are negatively related because both allow individuals to express their self-worth.

2.1. Earlier Findings on the Relationship Between Brands and Religion (and a Field Study)

The idea that there may be a relationship between brands and religion has not gone unnoticed in the literature. Although not focused on brand reliance, researchers have studied the relationship between religiosity and various aspects of shopping behavior. For example, Sood and Nasu (1995) concluded that devout Protestants prefer to buy products on sale versus when they want them, shop in all kinds of stores rather than only the better stores, and prefer stores with the lowest prices versus stores with the best assortment. Similarly, Essoo and Dibb (2004) found that casually religious respondents have different shopping behaviors compared to devout respondents. Casually religious respondents are trendier (i.e., attach more importance to brand names in their self-reports of preferences) and more innovative (i.e., will try any new product once). Interestingly, Rindfleisch et al. (2010) found that one aspect of

Table 1   Descriptive Statistics

Model parameter	Mean	Median	Std. dev.	Minimum	Maximum
Apple stores	0.5177	0.5273	0.4473	0.0000	1.6508
Brand stores	8.5989	8.0426	3.7022	2.0252	22.2857
Brand–discount ratio	0.3434	0.2667	0.2652	0.0000	1.3500
Congregations	1.1804	1.0671	0.5267	0.4694	2.3466
Attendance	0.4160	0.4300	0.0940	0.2400	0.5800
Median income	43,172.4902	42,649.0000	6,205.2983	32,397.0000	56,409.0000
College educated (%)	0.2408	0.2350	0.0475	0.1480	0.3910
Urbanization	75.48	75.50	15.84	37.72	100.00

Note. Apple stores, number of Apple stores in each state, divided by population and multiplied by 1 million; *Brand stores*, number of Macy's, Gap, and Banana Republic stores in each state, divided by population and multiplied by 1 million; *Brand–discount ratio*, number of the three department stores used for *Brand stores* divided by the number of discount stores (Costco, Kmart, Target, Walmart, and Sam's) in each state; *Congregations*, number of congregations per thousand people in each state; *Attendance*, percentage of self-reported church and synagogue attendance in each state; *Urbanization*, percentage of people who live in urban areas.

religiosity, religious fundamentalism, leads to greater brand loyalty and self-brand connections, suggesting that once religious individuals choose a product they are more likely to remain loyal to it.

Research into brand communities also provides interesting findings about the relationship between brands and religion. In addition to the previously mentioned study by Belk and Tumbat (2005), Muñiz and Schau (2005) found that the Newton community (centered around personal digital assistants discontinued by Apple) reflected five key religious themes: (1) tales of persecution, (2) tales of faith being rewarded, (3) tales of survival, (4) tales of miraculous recovery, and (5) tales of resurrection.

Although these studies suggest that shopping behavior may well be related to religious beliefs and that brand communities exhibit religious practices and beliefs, they have not examined the relationship between religiosity and brand reliance and thus have not yet identified its theoretical foundations. It is therefore unclear whether we should expect religiosity to be positively or negatively correlated with brand reliance. Thus, before discussing or exploring the underlying mechanism that might account for a relationship between religiosity and brand reliance, we sought to confirm that a relationship indeed exists and determine what form it takes using a field study with macrolevel data.

2.1.1.   A Field Study. In the field study, we constructed three very crude measures of brand reliance based on the assumption that in a geographical area where brand reliance is high, brands should flourish and their presence should be evident. These measures include (a) the number of Apple[1] stores (per million residents) (*Apple stores*), (b) the number of brand

stores such as Macy's and Gap (per million) (*brand stores*), and (c) the *brand–discount store ratio* (where the discount stores include chains such as Kmart). In measuring religiosity, we used two well-accepted measures from the literature: the number of congregations per thousand people in each state (*congregations*) and percentage of self-reported church and synagogue attendance in each state (*attendance*). We regressed each of our measures of brand reliance on each of the measures of religiosity, controlling for income, education, and urbanization. Table 1 reports the descriptive statistics for these data, and Table 2 reports the regression results. Details of this analysis are given in Appendix A. This appendix also presents the results of the same analysis using county-level data.

As can be seen in Table 2, the relationship between religiosity and brand reliance is negative in all six regressions. The *p*-values associated with the religiosity parameters vary between 0.02 and 0.14. It is important to note that the analyses revealed such consistent patterns even though they were done (i) with few observations, (ii) while controlling for a number of covariates, and (iii) with crude measures. However, it is still plausible that there are other relevant covariates not included here. Thus, the takeaway from these results may be viewed as modest, yet they provide a basis for further studying the relationship between religiosity and brand reliance and, importantly, a basis for focusing on reasons that religiosity might be negatively correlated with brand reliance. In what follows, we explore what we consider to be a primary reason that religiosity and brand reliance are negatively related—namely, the expression of self-worth that both permit.

2.2.   Brands and Their Self-Expressive Role
Brands enhance the value of products in many ways. Of course, one major function of a brand name is to simplify a consumer's decision process (i.e., reduce risk, reduce search costs, provide a signal

---

[1] Apple was identified as an interesting brand to study separately based on its use by several scholars in the past as an example of a brand with a strong identity (e.g., Fitzsimons et al. 2008) and as a brand that highlights the religious nature of brands (e.g., Belk and Tumbat 2005, Muñiz and Schau 2005).

Table 2 Multiple Regressions with *Religiosity*, *Income*, *Education*, and *Urbanization* as Independent Variables

Model parameter	DV: *Apple stores* estimate (t-statistic)	DV: *Brand stores* estimate (t-statistic)	DV: Ratio estimate (t-statistic)
Congregations	−0.2518 (−2.04)	−1.9714 (−1.63)	−0.1444 (−1.485)
Income	0.28E−04 (2.76)	0.0002 (1.93)	0.16E−04 (2.05)
Education	−2.57 (−2.09)	11.84 (0.98)	0.41 (0.42)
Urbanization	0.0117 (3.08)	0.0127 (0.34)	−0.0015 (−0.50)
Constant	−0.6601 (−1.21)	−1.1306 (−0.21)	−0.1772 (−0.41)
R-squared	0.64	0.49	0.36
Adjusted *R*-squared	0.61	0.45	0.31
Attendance	−0.7870 (−1.49)	−12.40 (−2.54)	−0.7795 (−1.94)
Income	0.30E−04 (2.92)	0.0002 (1.86)	0.16E−04 (2.04)
Education	−2.81 (−2.16)	5.64 (0.47)	0.05 (0.05)
Urbanization	0.0165 (5.17)	0.0521 (1.77)	0.0014 (0.56)
Constant	−1.01 (−2.05)	0.8528 (0.19)	−0.1298 (−0.35)
R-squared	0.62	0.53	0.38
Adjusted *R*-squared	0.59	0.49	0.33

of quality, and allow for identification of the product source; Keller 2003). However, brands also provide self-expressive benefits (Belk 1988, Grubb and Grathwohl 1967, Sirgy 1982). Many researchers have found that consumers are attracted to brands that provide an opportunity to express attributes and qualities that are congruent with the self (Aaker 1999, Escalas and Bettman 2003, Kleine et al. 1993).

As a part of their self-expressive function, brands allow people to express that they are meaningful, worthwhile beings, and deserving of good things in their lives. In other words, brands can help people communicate a sense of self-worth. For example, Dalton (2008) demonstrated that trading up to more expensive products in self-relevant categories (e.g., a Duke student trading up from a plain white t-shirt to a Duke t-shirt) provides a means to repair feelings of self-worth.

Importantly, branded products should allow individuals to express their self-worth more than generic products and store brands because (1) branded products are generally perceived as higher in quality and higher prestige (Bagwell and Bernheim 1996, Bellizzi et al. 1981, Cunningham et al. 1982, Dick et al. 1995, Richardson et al. 1994), and (2) generics and store brand purchases lead to the perception of individuals being "cheap" (Dick et al. 1995).

2.3. Religiosity and Its Self-Expressive Role
Brands are certainly not the only way that individuals can express their self-worth. One's level of religiosity may also play a role in the expression of self-worth. Religiosity is a broad, multidimensional construct that is operationalized in a variety of ways in the literature (e.g., participation in religious activities such as church attendance, membership in religious organizations, dispositional measures of religious attitudes and beliefs, etc.; Hill and Hood 1999). Given that

one of our primary objectives is to establish that religiosity and brand reliance are indeed related (regardless of why people are religious), we embrace this broad view of religiosity. Thus, consistent with prior literature, we operationalized religiosity in a variety of ways, including church attendance, dispositional measures, and manipulations of the salience of religious beliefs. However, in testing our theory regarding the behavioral mechanism that may underlie this relationship, we focus on the specific dimension of religiosity that we expect to play an important role in this relationship—its ability to allow individuals to express themselves, particularly as it relates to self-worth.

The idea that religion can be used to express the self has a solid foundation in the literature. An early investigation by Braden (1947) identifies religion as an important part of forming and expressing one's personality. Furthermore, several studies have highlighted religion as an important means of establishing and expressing identity as an individual and as a member of a group (Chong 1997, Lewins 1978, Seul 1999, Williams 1988). Importantly, one critical aspect of self-expression that religion should enable (just like brands) is the expression of self-worth. Religion is a primary source of self-worth for many people, particularly when they hold benevolent images of God and a commitment to their religious beliefs (Crocker et al. 2003, Francis 2005, Nelson 1989, Seul 1999, Smith et al. 1979, Spilka et al. 1985). Religion may enhance feelings of self-worth because it provides the belief that one is loved, valued, and unique in the eyes of God (Crocker et al. 2003).

2.4. Theoretical Framework
Based on the literature we have just discussed regarding the functions of brands and religion, it is clear that both brands and religion allow individuals to

express aspects of themselves and, more specifically, to express feelings of self-worth. Thus, it seems reasonable to expect that brands and religiosity will serve as substitutes for one another when it comes to the expression of self-worth. In other words, when religiosity is high, people should be better able to express their self-worth and should therefore demonstrate less brand reliance, and vice versa.

However, this negative relationship between religion and brands should not exist for every product category. If a critical driver of this relationship is in fact the ability to express one's self, the relationship should exist only in product categories where brands can be used for self-expression. For example, we would expect to find this relationship in the clothing category but not in the battery category (where the brands are more likely to only satisfy functional needs). Product category, in other words, will function as a moderator of the opportunity to express one's self-worth.

Across several studies, we first seek to confirm the negative relationship between religiosity and brand reliance (that we observed through our field analyses) by both experimentally priming religiosity as well as measuring it as a chronic individual difference. We not only demonstrate that the relationship exists but we demonstrate that it does so in product categories in which brands satisfy self-expression needs, but not in categories in which the brands only satisfy functional needs. We later demonstrate that this is true, at least in part, because of the role that both religion and brands play in the expression of self-worth.

3. Analysis of the Relationship Between Brand Reliance and Religiosity

3.1. Overview
The macrolevel data of the field study mentioned earlier provide an interesting and encouraging basis for exploring the relationship between religiosity and brand reliance. In what follows, we intend to provide support for this relationship through a series of experiments and surveys designed to isolate the impact of the religiosity construct on brand reliance. Furthermore, we seek to demonstrate that this relationship is driven by the tendency for *both* religious beliefs and brand reliance to satisfy individuals' needs for self-expression, and particularly their needs to express feelings of self-worth. In each of the studies that follow, we measure brand reliance as the tendency of the individual to prefer branded goods over unbranded goods or goods without a well-known national brand (e.g., store brands) in a series of several choices. Given the similarity of the choice model used across the studies, the following section is designed to describe the details of the model.

3.2. Estimating Brand Reliance via a Choice Model
In §1, we defined the notion of brand reliance as the degree to which consumers prefer branded goods over unbranded ones or over goods without a well-known national brand (e.g., store brands). To capture this, in each one of the studies that follows, we present our participants with several scenarios designed to refer to everyday shopping activities. Each scenario involves a different product category (e.g., watches, batteries), and participants are asked to choose between a well-known national brand and a complementary private label or store brand in the respective category (with real pictures of the products and real prices provided). As an example, in one scenario, participants read

> You are on your way home from work when you all of a sudden get a piercing headache. You realize that you don't have any medicine with you or at home, so you stop at the nearest CVS drug store to pick some up. What do you choose?

Their options were Motrin ibuprofen (24 tablets, $4.29) and CVS/pharmacy ibuprofen (24 tablets, $3.76). It is important to note that we do not argue that the brand equity of private labels such as CVS is zero. We simply claim that brand equity is higher for the branded products than for private label products. We return to this issue soon.

The prices that we use in these scenarios are those that are advertised online. In other words, we are using "real" prices. Still, in studies 3 and 4 we create price variation across respondents to identify the price sensitivity parameter and its heterogeneity in the population. Specifically, the price of the branded product is randomized among the respondents. Each branded product has four possible values; the highest possible price is the price advertised online.[2] The other prices are lower than the advertised price because the gap between the prices of the brand and the private label was large to begin with.

We follow the choice modeling literature in computing a measure of the impact of brand name on choice from the series of choices participants make. Although ours is the first attempt to estimate brand reliance, we can rely (in this task) on previous studies that used choice data to estimate, for example, brand equity. We start by describing the intuition behind our approach.

Consider the case where individuals are facing two products that are identical in all of their observable attributes, including price. If 75% of them choose

---

[2] Specifically, if $p_{b,k}$ is the price of the branded product in scenario k, and z_k is the difference between the branded products and store brands, then the four prices of the branded product were $p_{b,k}$, $p_{b,k} - 0.25z_k$, $p_{b,k} - 0.5z_k$, and $p_{b,k} - 0.75z_k$.

brand A and the rest choose brand B, we can say that brand A has a higher brand equity than brand B (see, for example, Goldfarb et al. 2009). If our aim is to measure overall brand equity, the differences among the individuals (i.e., the fact that some individuals chose A and others B) are not of great interest. Here, however, we are actually interested in these differences, and to identify them we need multiple observations from each respondent. Therefore, our respondents are asked to make several choices in various product categories. This approach enables us to identify individuals who systematically tend to prefer branded goods over the private labels or store brands. Furthermore, we do not actually require that the two products be identical in all observable attributes. Any observable difference, such as price, can be controlled for in the analysis.

The formal foundations of our approach are as follows. In each of the K product choices (also referred to as shopping scenarios and denoted by k), each individual (denoted by i) is facing two alternatives (denoted by j), where $j \in \{b, g\}$ (i.e., the individual is choosing between a brand, $j = b$, and a generic product, $j = g$). Thus, for example, for the headache medicine scenario previously described, $j = b$ for Motrin and $j = g$ for CVS.

The (indirect) utility of individual i from choosing product j in shopping scenario k is

$$u_{i,j,k} = \alpha_{i,j} + \mu_{j,k} + \gamma_i p_{i,j,k} + \varepsilon_{i,j,k}, \qquad (1)$$

where (i) $p_{i,j,k}$ is the price of product j faced by individual i in scenario k and γ_i is the individual-specific price sensitivity, (ii) $\mu_{j,k}$ is the a priori tendency in the population to prefer option j in product category k and the random variable $\varepsilon_{i,j,k}$ is the individual variation around this population mean, and (iii) $\alpha_{i,j}$ is an individual-specific parameter that reflects her taste for products of type j (i.e., $\alpha_{i,b}$ represents her taste for branded products and $\alpha_{i,g}$ represents for her taste for generic products).

The decision rule of the individual is $d_{i,k} = 1 \Leftrightarrow \mu_{i,b,k} \geq u_{i,g,k}$ and $d_{i,k} = 0$ otherwise, where $d_{i,k}$ is a binary variable that is equal to 1 if the individual chooses the branded alternative in product category k and 0 otherwise. The decision rule can be rewritten as

$$d_{i,k} = 1 \quad \Leftrightarrow \quad \alpha_i + \mu_k + \gamma_i p_{i,k} + \varepsilon_{i,k} \geq 0, \qquad (2)$$

where (i) $\alpha_i \equiv \alpha_{i,b} - \alpha_{i,b}$ is, as explained below, the brand reliance parameter of individual i; (ii) $\mu_k \equiv \mu_{b,k} - \mu_{g,k}$ is the kth category fixed effect (also referred to, as explained below, as "category-specific brand reliance"); (iii) $p_{i,k} \equiv p_{i,b,k} - p_{i,g,k}$ is the price difference faced by individual i between the branded good

and the private label (or store brand) in the kth product category; and (iv) $\varepsilon_{i,k} \equiv \varepsilon_{i,b,k}$ is a random variable unobserved by the researcher (but observed by the individual). In other words, two elements in Equation (2) represent brand reliance, μ_k and α_i. The first captures possible differences in the tendency to rely on brands in one category versus another. This is the average tendency in the population and can be thought of as the "intercept" of brand reliance. The second represents the individual variation around these category-specific "means."

The individual-specific parameter α_i is the center of our attention. Notice that the higher α_i, the more likely individual i is to select the branded product *in each one of the k product categories*. It is important to note that in each product category, the description of both alternatives was the same, other than the name of the product and its price. In other words, because we account for the price difference, the only systematic difference between the alternatives is the name of the product (national brand versus store brand). Thus, the parameter α_i captures exactly the reliance on a brand. Importantly, in defining α_i as brand reliance, we capture important sources of heterogeneity in why people differ in this regard as part of our definition of brand reliance, including (1) systematic differences in perceptions of and beliefs about national brands versus store brands (including quality perceptions) and (2) systematic differences in the weights attributed to brand perceptions (including weights attached to perceived quality). Thus, α_i captures both consumer differential perceptions and beliefs about brands, which may be at least partially the result of differential brand knowledge, as well as heterogeneity in consumer tastes (differences in weights attached to various perceptions). We should note here that in scanner panel research, the brand-specific constants in choice models have been conceptualized as brand equity. However, we measure these (individual-specific) constants across categories such that our α_i captures individual i's tendency to prefer branded products rather than a specific brand's equity to that individual.

Furthermore, we expect α_i to vary in the population for various reasons. The main objective of this research is to demonstrate that one of the factors that contributes to the variation in the reliance on brands is the individual's religiosity. Specifically, we assume that

$$\alpha_i = [\alpha r_i + x_i \alpha_x] + \sigma_\alpha \tilde{\alpha}_i, \qquad (3)$$

where $\tilde{\alpha}_i$ comes from a standard normal distribution, x_i is a vector of individual's characteristics (e.g., income and materialism tendency), and r_i measures individual i's degree of religiosity. As explained in more detail below, in study 2 we measure religiosity as a chronic individual difference, whereas in the

other studies we prime (or activate) religious beliefs in a treatment group and compare that group to a control group. The specific measurement of the variables r_i and x_i in each of the studies is described in the data description subsections below and presented in the tables.

The main parameter of interest in this study is α. Our hypothesis is that $\alpha < 0$—i.e., the higher the degree of individual's religiosity, the lower her tendency to rely on brands.

To construct the likelihood function of this model we need to specify the distribution of both ε and the price sensitivity parameter γ_i. We assume that $\varepsilon_{i,k}$ is distributed according to an extreme value $(0, \sigma_\varepsilon^2(r_i))$ distribution. In other words, following Salisbury and Feinberg (2010), we allow the variance of $\varepsilon_{i,k}$ to be a function of the individual's religiosity (be it primed or chronic). We also assume that

$$\gamma_i = \gamma + \sigma_\gamma \tilde{\gamma}_i, \tag{4}$$

where $\tilde{\gamma}_i$ comes from a standard normal distribution. In all studies, other than studies 1 and 2, we estimate both γ and σ_γ^2. In studies 1 and 2, as mentioned previously, the price difference does not vary across individuals but only across categories. Because our model includes category fixed effect μ_k, the price variation is being consumed by it, and, hence we cannot identify these two parameters (γ and σ_γ^2) in studies 1 and 2.

Thus, the likelihood of the data is

$$L(Y, \theta)$$
$$= \prod_{i=1}^{N} \int_{-\infty}^{\infty} \int_{-\infty}^{\infty} \prod_{k=1}^{K}$$
$$\cdot \frac{[(1-d_{i,k}) + d_{i,k} \exp([\alpha r_i + x_i \alpha_x] + \sigma_\alpha \tilde{\alpha} + \mu_k + (\gamma + \sigma_\gamma \tilde{\gamma}) p_{i,k})]}{1 + \exp([\alpha r_i + x_i \alpha_x] + \sigma_\alpha \tilde{\alpha} + \mu_k + (\gamma + \sigma_\gamma \tilde{\gamma}) p_{i,k})}$$
$$\cdot \phi(\tilde{\alpha}) \phi(\tilde{\gamma}) \, d\tilde{\alpha} \, d\tilde{\gamma}, \tag{5}$$

where ϕ is the density function of a standard normal random variable, Y is a matrix of all the observable variables (e.g., choices and prices), and θ is a vector with all the parameters (e.g., α and σ_α). Note that we have (i) tested whether α and γ are correlated and found that they are not, and (ii) found that σ_ε^2 is not a function of r_i and thus we have normalized it at 1.[3] The model is estimated via maximum likelihood with numerical integration using GAUSS.

---

[3] In the experiments (studies 1, 3, and 4), in which religiosity was primed, we have set the variance of ε at 1 for the religiosity condition and estimated the variance of each of the other conditions (for example, the neutral condition in study 1). In study 2, in which r_i represents a chronic individual difference, we have formulated the variance as $\sigma_\varepsilon^2(r_i) = \exp(\gamma r - i)$.

3.3. Study 1: Experimental Manipulation of Religiosity

The primary objective of study 1 is to simply demonstrate that individuals are less likely to choose branded products when religion is salient than when it is not. Thus, we experimentally manipulate the salience of religious beliefs and measure brand reliance in a series of choices as described above. Importantly, although some of the products in this series of choices enable self-expression (i.e., product categories in which the brands enable consumers to express themselves), others are primarily functional (i.e., product categories in which the brands are valued primarily for functional attributes such as performance). Thus, we are able to begin investigating whether the relationship between religiosity and brand reliance is driven by the self-expressive needs of individuals. If our hypothesis is correct and religiosity decreases brand reliance because religion provides an alternate means of satiating the need for self-expression, then the relationship between religiosity and brand reliance should be most obvious among product categories with self-expressive benefits (versus categories with primarily functional benefits).

3.3.1. Data Description and Collection. Forty-five participants (of which 14 were female) were recruited at a public university in the Southeast. The ages ranged from 18 to 38 years (median, 20). Participants identified themselves as Christian (64.4%), non-religious (17.8%), Jewish (2.2%), Hindu (11.1%), and other (4.4%). Participants were white (51.1%), Asian (15.6%), black (15.6%), Native American (4.4%), native Hawaiian (2.2.%), and other (11.1%).

Religiosity. To isolate the impact of religious beliefs on brand choice, we sought to activate religious beliefs through a priming manipulation. Participants were assigned to one of two conditions: a religion condition and a neutral condition. In the religion condition, participants were asked to write about "what your religion means to you personally." The participants in the neutral condition were asked to write about "a couple of routine activities that you typically do on an average day," a task frequently used to create a neutral baseline (e.g., Lerner and Keltner 2001) among participants. A pretest was conducted among 51 individuals to confirm that the religion condition effectively enhanced the salience of religious beliefs relative to the neutral condition. Specifically, participants were asked to indicate how much they agreed with the following statements pertaining to the writing exercise (where 1 = strongly disagree and 7 = strongly agree): (i) "I thought about how religion plays a role in my everyday affairs," (ii) "I thought about how my religious beliefs impact my daily choices," (iii) "I thought about the reasons that I do

or do not believe in God," and (iv) "I thought about the advantages and disadvantages of religion." We then created an index of the mean response to all four items for each individual ($\alpha = 0.86$). Results confirmed that the religion prime effectively enhanced the salience of religious beliefs relative to the neutral prime ($M_{\text{religion}} = 5.2$, $M_{\text{neutral}} = 3.3$, $F(1, 49) = 17.77$; $p = 0.0001$). Furthermore, the manipulations did not impact positive mood ($F(1, 49) = 0.40$, $p = 0.53$) or negative mood ($F(1, 49) = 0.64$, $p = 0.43$) as measured by the positive and negative affect scale (Watson et al. 1988).

Brand reliance. Following the manipulation, participants were told to imagine that they were going shopping for several items and to choose what they would normally buy. Specifically, participants were shown pictures of two products at the same time: one was a national brand and one was a store brand. The pictures were horizontally displayed next to each other such that in half of the choices, the national brand was displayed on the left and the store brand, on the right; this was reversed for the other half. The order in which the six different pairs of products were displayed was the same across all participants. The products in each pair were either members of a category that provided self-expressive benefits or one that provided primarily functional benefits. Specifically, for the self-expressive categories, the choices included Ralph Lauren versus Target brand sunglasses, a Fossil versus a Target brand watch, and Adidas versus Walmart brand soccer socks. For the functional categories, the choices included Pepperidge Farm versus Kroger brand bread, Energizer versus CVS brand batteries, and Motrin versus CVS brand ibuprofen. The real prices were displayed directly below each product. Importantly, the products were selected such that they did not differ on aspects other than the brand name and the price in any systematic fashion (i.e., we sought to maintain the same color, same size, etc., within the pairs of products).

Of note, a pretest was conducted with 44 participants to confirm that the brands we selected as expressive and functional were perceived as such by participants. Each participant was asked to rate the list of branded products (where 1 indicated that the brand was primarily functional and 6 indicated that the brand was primarily expressive.) The expressive brands were rated as significantly more expressive than the functional brands $[(t(1, 43) = 10.01, p < 0.0001)$; $M_{\text{expressive brands}} = 4.77$, $M_{\text{functional brands}} = 2.95]$.

3.3.2. Results. Using the choice model described previously, we first find a marginal effect of the religion condition on brand reliance ($\alpha = -1.04$, $t = -1.73$, $p = 0.08$) whereby individuals in the religion condition are less likely to choose brands than those in the neutral condition (see Table 3(a)). Next, we test our hypothesis that there should be an inter-

action between religiosity and the degree to which the products reflect functional or self-expressive benefits. Specifically, we test whether the impact of the manipulations is strongest among the categories in which the branded product is regarded as self-expressive. To do so, we reestimate the model with separate brand reliance parameters for "self-expressive" and functional categories. As expected, we find a significant effect of the manipulations among the self-expressive categories ($\alpha = -1.99$, $t = -2.74$, $p = 0.01$), but not among the functional categories ($\alpha = -0.03$, $t = -0.05$, $p = 0.96$) (see Table 3(b)). In other words, individuals in the religion condition are only less likely to choose branded products than individuals in the neutral condition in the self-expressive categories. In Appendix B we report the results of a similar experiment in which the nonbranded option represents a "true" generic (rather than a store brand). The results are consistent with those reported here.

3.3.3. Discussion of Study 1 Results. This study supports our basic hypothesis that religiosity decreases brand reliance. Furthermore, our findings also

Table 3(a) Study 1: Effect of Religion Manipulation on Brand Reliance (All Brands Combined)

Model parameter	Estimate	Standard error	t-Statistic	p-Value
Religion	−1.04	0.60	−1.73	0.08
Brand reliance heterogeneity (σ_α^2)	1.73	0.40	4.33	0.00
Category-specific brand reliance (i.e., fixed effects μ_k) for each of the six categories				
Category 1, μ_1	−1.69	0.61	−2.78	0.01
Category 2, μ_2	0.25	0.54	0.46	0.64
Category 3, μ_3	−1.29	0.58	−2.22	0.03
Category 4, μ_4	−0.94	0.56	−1.67	0.10
Category 5, μ_5	−0.61	0.55	−1.11	0.26
Category 6, μ_6	0.52	0.54	0.96	0.34

Table 3(b) Study 1: Effect of Religion Manipulation on Brand Reliance (with Expressive and Functional Brands Separated)

Model parameter	Estimate	Standard error	t-Statistic	p-Value
Religion × functional brands	−0.03	0.72	−0.05	0.96
Religion × expressive brands	−1.99	0.73	−2.74	0.01
Brand reliance heterogeneity (σ_α^2)	1.88	0.44	4.24	0.00
Category-specific brand reliance (i.e., fixed effects μ_k) for each of the six categories				
Category 1, μ_1	−2.21	0.67	−3.29	0.00
Category 2, μ_2	−0.25	0.60	−0.42	0.67
Category 3, μ_3	−1.81	0.64	−2.81	0.00
Category 4, μ_4	−0.56	0.61	−0.92	0.36
Category 5, μ_5	−0.20	0.60	−0.33	0.74
Category 6, μ_6	1.04	0.61	1.72	0.09

support the hypothesis that this relationship is specific for brands that enable individuals to communicate something about themselves (i.e., brands with self-expressive benefits). We suggest that religion impacts the choice of self-expressive brands (that is, brands with self-expressive benefits), but not predominantly functional brands, because religion satiates individuals' needs to express themselves just as self-expressive brands do. Stated differently, brand preferences are affected more by religion in self-expressive categories than in functional ones. When religious beliefs are salient, individuals appear to have a lower need for self-expressive brands, but not necessarily functional brands. We further explore this self-expression hypothesis in the next study.

3.4. Study 2: Dispositional Measures of Religiosity

Study 2 has two main objectives. First, we seek to replicate the relationship between religiosity and brand reliance by using a different operationalization of the religiosity construct (i.e., a validated religiosity scale). Specifically, instead of priming religious beliefs, we measure religiosity as a chronic individual difference. Conceptually, whether we prime or measure religiosity, we should observe a similar relationship with brand reliance. Second, we seek to provide further support for our hypothesis that self-expression is an underlying driver of the relationship between religion and brand reliance. We do so by leveraging extraversion as an individual difference measure that effectively captures the need for self-expression.

We expect to find that individuals who are dispositionally high in religiosity will have a lower brand reliance than those who are low in religiosity and that this effect will be found in self-expressive categories but not in functional ones. Moreover, we expect this pattern to be strongest among individuals who have the greatest needs to express themselves to others (i.e., extraverts).

3.4.1. Data Description and Collection. Three-hundred fifty-six participants completed an Internet-based survey (of which 250 were female) with ages ranging from 18 to 84 years (median, 52). The majority of participants identified themselves as Christian (68.0%), followed by nonreligious (19.1%), Jewish (4.2%), Buddhist (0.8%), Muslim (0.6%), and other (7.3%). Participants were white (89.0%), Hispanic (3.1%), Asian (1.4%), black (4.8%), and other (1.7%).

Brand reliance. Participants made six product choices exactly as they did in study 1. Thus, we have three self-expressive cases and three functional ones.

Extraversion. After completing the choice exercise, participants completed a measure of extraversion (John et al. 1991). The eight-item subscale is designed

to assess traits related to expressiveness, sociability, positive emotions, activity, energy, and dominance. (An example item includes "I see myself as someone who... is outgoing... has an assertive personality"; 1 = strongly disagree and 5 = strongly agree). Scale reliability was high ($\alpha = 0.87$).

Religiosity. Participants were then asked to complete the Religious Commitment Inventory-10 (Worthington et al. 2003). This 10-item measure is designed to assess the degree to which a person adheres to his or her religious values, beliefs, and practices and uses them in daily living (e.g., "My religious beliefs lie behind my whole approach to life" and "I enjoy working in the activities of my religious affiliation"; 1 = not at all true of me and 5 = totally true of me). The scale's reliability was high ($\alpha = 0.95$). Moreover, it has demonstrated strong convergent validity with other measures of religiosity (including church attendance) and strong discriminant validity with respect to measures such as spirituality and morality (Worthington et al. 2003).

Demographics. Because we use chronic differences across individuals in their levels of religiosity (rather than priming it), it makes sense to account for additional observable differences. Thus, in the analysis we allow brand reliance to differ across gender, age, ethnicity, education, and income, in addition to the unobserved differences and the differences with respect to religiosity. Note that religiosity is not correlated with any of the demographic variable other than age (for which the correlation is 0.23, $p < 0.0001$).

3.4.2. Results. As expected, we first find that religiosity is associated with lower brand reliance for self-expressive categories ($\alpha = -0.26$, $z = -3.24$, $p = 0.001$) but not for functional categories ($\alpha = 0.00$, $z = 0.04$, $p = 0.97$) (see Table 4(a)).

Next, we explore whether the relationship between religiosity and brand reliance is moderated by extraversion. Specifically, we seek to understand whether the relationship between religiosity and brand reliance is stronger for individuals who are high on the extraversion scale. To test this, we reestimate the model described previously with an additional parameter. Specifically, for the expressive categories, we allow religiosity to have a main effect (on brand reliance) as well as an interaction effect (with respondents' extraversion ratings). As expected, we find that the relationship between religiosity and brand reliance is stronger among people who are high in extraversion ($\alpha = -0.32$, $z = -3.71$, $p = 0.0002$) (see Table 4(b)). Notice that this effect is on top of the main effect of religiosity ($\alpha = -0.29$, $z = -3.48$, $p = 0.0005$).[4]

---

[4] Note that when extraversion is also allowed to interact with the functional categories, both the main effect of religiosity and its

Table 4(a)   Study 2: Effect of Religiosity Scale Measure on Brand Reliance (with Expressive and Functional Brands Separated)

Model parameter	Estimate	Standard error	t-Statistic	p-Value
Religiosity × expressive brands	−0.26	0.08	−3.24	0.001
Religiosity × functional brands	0.00	0.08	0.04	0.97
Low income	0.61	0.41	1.50	0.14
Average income	0.80	0.41	1.97	0.05
High income	1.12	0.42	2.69	0.01
Age	−0.16	0.05	−3.07	0.00
Gender (male)	0.43	0.16	2.72	0.01
Ethnicity (Native American)	−0.70	1.0	−0.70	0.48
Ethnicity (Asian)	−0.03	0.42	−0.06	0.95
Ethnicity (black)	0.53	0.31	1.74	0.08
Ethnicity (Hispanic)	0.07	0.53	0.14	0.89
Education (high school diploma)	0.37	0.34	1.10	0.27
Education (some college)	0.14	0.34	0.41	0.68
Education (undergraduate degree)	0.24	0.36	0.67	0.50
Education (graduate degree)	0.10	0.36	0.29	0.77
Brand reliance heterogeneity (σ_α^2)	0.61	0.10	5.93	0.00
Category-specific brand reliance (i.e., fixed effects μ_k) for each of the six categories				
Category 1, μ_1	0.00	—	—	—
Category 2, μ_2	−0.13	0.16	−0.82	0.41
Category 3, μ_3	−1.80	0.17	−10.44	0.00
Category 4, μ_4	−3.09	0.26	−11.70	0.00
Category 5, μ_5	−2.08	0.19	−10.69	0.00
Category 6, μ_6	−1.90	0.19	−9.98	0.00

Notes. The reference group for ethnicity reflects white individuals. The reference group for education reflects individuals with less than a high school diploma.

Table 4(b)   Study 2: Effect of Religion Scale Measure on Brand Reliance Among Expressive Brands, for Levels of Extraversion

Model parameter	Estimate	Standard error	t-Statistic	p-Value
Religiosity × expressive brands	−0.29	0.08	−3.48	0.0005
Extraversion × expressive brands	−0.32	0.09	−3.71	0.0002
Religiosity × functional brands	0.00	0.08	0.01	0.99
Low income	0.61	0.41	1.48	0.14
Average income	0.81	0.41	1.98	0.05
High income	1.09	0.42	2.57	0.01
Age	−0.16	0.05	−3.10	0.00
Gender (male)	0.43	0.16	2.73	0.01
Ethnicity (Native American)	−0.69	1.00	−0.69	0.49
Ethnicity (Asian)	−0.03	0.41	−0.08	0.94
Ethnicity (black)	0.54	0.31	1.78	0.07
Ethnicity (Hispanic)	0.01	0.52	0.03	0.98
Education (high school diploma)	0.39	0.34	1.15	0.25
Education (some college)	0.14	0.35	0.41	0.68
Education (undergraduate degree)	0.26	0.36	0.71	0.48
Education (graduate degree)	0.13	0.37	0.36	0.72
Brand reliance heterogeneity (σ_α^2)	0.60	0.10	5.87	0.00
Category-specific brand reliance (i.e., fixed effects μ_k) for each of the six categories				
Category 1, μ_1	0.00	—	—	—
Category 2, μ_2	−0.13	0.16	−0.82	0.41
Category 3, μ_3	−1.80	0.17	−10.43	0.00
Category 4, μ_4	−3.10	0.27	−11.53	0.00
Category 5, μ_5	−2.08	0.19	−10.70	0.00
Category 6, μ_6	−1.90	0.19	−9.92	0.00

Notes. The reference group for ethnicity reflects white individuals. The reference group for education reflects individuals with less than a high school diploma.

It is also worth noting that although the differences are not statistically significant, it is reassuring to see that brand reliance is higher for higher income levels.

3.4.3.   Discussion of Study 2 Results. In study 2, we again find a negative relation between religiosity and brand reliance—this time, by measuring religiosity as a chronic individual difference variable. Importantly, this relationship holds in self-expressive categories but not in functional categories. Thus, this study provides additional support for the idea that individuals with low levels of religiosity use brands to meet a need for self-expression that people with a high sense of religiosity can satisfy through religion. The support for this idea is further strengthened by the analysis of the relationship between religiosity and brand reliance at varying levels of extraversion, a construct conceptually related to a desire to express the self to others. Specifically, we find that the negative relationship between religiosity and the reliance on self-expressive brands is strongest among individuals who are highest in extraversion.

interaction with extraversion are insignificantly different from zero (for the main effect, $\alpha = 0.001$ and $z = 0.016$; and for the interaction, $\alpha = 0.003$ and $z = 0.036$; the results of this estimation are not reported in any table).

Together with study 1, this study provides evidence that a relationship between religiosity and brand reliance exists, and further, that this relationship is based on an underlying need for self-expression. However, up to this point, it is unclear exactly what aspects of self-expression underlie the relationship between religiosity and brands. Does religion satiate the need to express something specific that counteracts the need to buy brands? We explore this question in the remaining two studies.

3.5.   Study 3: Multiple Experimental Manipulations of Religiosity
The objective of study 3 is to understand whether religion and brands satisfy a specific aspect of the need for self-expression. We hypothesize that a specific facet of self-expression that both religion and brands satisfy is the need to express one's sense of self-worth. As mentioned previously, previous research has indicated that people find and express a sense of self-worth through brands (Banister and Hogg 2003, Dalton 2008, Grubb and Grathwohl 1967). It has also been shown that people find a sense of self-worth in their religious beliefs (e.g., Crocker et al. 2003). We argue that when such religious beliefs are salient, the

need to express feelings of self-worth is satisfied, and as a result, the consumer has no remaining need to express their feeling of self-worth (through brands). In other words, consumers that express their self-worth through religion will demonstrate lower brand reliance when the primary benefit of a brand is self-expressive (versus functional).

To demonstrate the importance of self-worth in the relationship between religiosity and brands, and to demonstrate that not all aspects of religion will have the same effects on brand reliance, we activate religious thought in a variety of ways. In one condition, we ask participants to think about religion as a source of self-worth. In a second condition, we ask participants to write about religion as a source of security. "Security" is leveraged as just one example of a specific function of religion that is distinct from self-worth but that could explain the relationship between religiosity and brand reliance (because a brand's reputation can also serve as a source of security). Thus, the security condition allows us to demonstrate that not all aspects of religion will have the same effects on brand reliance. In a third condition, we ask participants to think about someone else's religious beliefs. This allows us to activate religious thought and further demonstrate that it is not the mere activation of any thoughts associated with religion that decreases brand reliance. We assign a final group of participants to a fourth condition designed to serve as a neutral benchmark with no mention of religion. If our hypothesis is correct, and religion's specific role as a source of self-worth is a primary driver in the relationship between religiosity and brand reliance, then individuals in the "religion as self-worth" condition should show less brand reliance than individuals in the other three conditions.

Importantly, by using multiple manipulations of religiosity, we also seek to address alternative explanations for the relationship between religiosity and brand reliance that suggest that our results are driven by participants who correctly guess the hypothesis and desire to please the experimenter in their responses, or by participants' potential fear of endorsing materialistic values when religion is salient. Specifically, if we find that individuals in the "religion as security" or "other's religion" conditions *do not* exhibit lower brand reliance, we can rule out the possibility that religiosity results in lower brand reliance because individuals think that generic products are the "correct" response—either because they believe it is what the experimenter is expecting or because they believe it is what their religious teachings dictate. To further confront the latter possibility, we demonstrate that our results are not merely a reaction against materialistic values by including a measure of materialism.

3.5.1. Data Description and Collection. One hundred and twenty-two participants (of which 64 were female) were recruited from an online research company's database. The ages ranged from 18 to 81 years (median, 56). Participants identified themselves as Christian (68.9%), nonreligious (21.3%), Jewish (4.9%), and other (4.9%). Participants were white (84.4%), Asian (3.3%), black (5.7%), Native American (1.6%), Hispanic (3.3%), and other (1.6%).

Religiosity. Participants were assigned to one of four conditions. In the religion as self-worth condition, they were asked to describe how religious beliefs and activities "provide you with a sense of self-worth." In the religion as security condition, participants were asked to describe how religious beliefs "provide you with a sense of safety and security." In the other's religion condition, participants were asked to think of someone's whose religious beliefs were different from their own and to describe them without discussing their own religious beliefs. In the neutral condition, participants were asked to write about the routine activities of their day.

Brand reliance. Following the manipulation, participants were asked to select a product in a series of choices. To generalize our findings beyond the specific categories used in studies 2 and 3, participants chose among 12 different categories in this study. And, just as in the previous studies, half of the categories included an expressive brand (Bath and Body Works bodywash, a Nike gym bag, Timberland gym shoes, a Starbucks coffee mug, a Citizen watch, a Calvin Klein wallet), and half included a functional brand (Q-Tips cotton swabs, a Reach toothbrush, Rogaine hair-growth treatment, ChapStick lip moisturizer, a General Electric refrigerator, an Emerilware fry pan.) The procedure was the same as what is described in study 1.[5]

Materialism. Following the brand choices, individuals were asked to complete a brief measure of materialism via Richins' (2004) material values nine-item scale. The scale is designed to measure the degree to which individuals consider the ownership and acquisition of material goods to be an important part of achieving major life goals and desired states. Participants were asked to rate statements such as "I'd be happier if I could afford to buy more things" and "My life would be better if I owned certain things I don't have" on a five-point scale (where 1 = strongly

---

[5] As in study 1, a pretest was conducted to confirm that the brands we selected as expressive and functional were perceived as such by participants. Thirty-nine participants rated the list of expressive and functional brands (where 1 indicated that the brand was primarily functional and 6 indicated that the brand was primarily expressive). The expressive brands were rated as significantly more expressive than the functional brands ($t(1, 38) = 10.87$, $p < 0.0001$; $M_{\text{expressive}}$ brands = 4.43, $M_{\text{functional}}$ brands = 2.75).

disagree and $5 =$ strongly agree). Scale reliability was strong ($\alpha = 0.85$).

3.5.2. Results. To test our hypothesis that individuals in the religion as self-worth condition should exhibit less brand reliance than individuals in the other conditions, we again estimate a choice model (see Table 5(a)). First, focusing on categories with self-expressive brands, we find that individuals in the religion as self-worth condition demonstrate lower brand reliance than those in the neutral condition ($\alpha = -1.26$, $t = -2.38$, $p = 0.02$), but individuals in the religion as security ($\alpha = 0.33$, $t = 0.63$, $p = 0.53$) and other's religion conditions ($\alpha = 0.04$, $t = 0.08$, $p = 0.94$) do not. However, when we look at categories with functional brands, this pattern does not exist. Individuals do not demonstrate lower brand reliance than those in the neutral condition when they are in the religion as self-worth condition ($\alpha = -0.57$, $t = -1.24$, $p = 0.21$), the religion as security condition ($\alpha = 0.23$, $t = 0.46$, $p = 0.64$), or the other's religion condition ($\alpha = -0.07$, $t = -0.15$, $p = 0.88$).

Next, we reanalyze the model to account for materialism (see Table 5(b)). As one might expect, higher materialism is associated with higher brand reliance ($\alpha = 0.47$, $t = 2.46$, $p = 0.01$). However, the inclusion of materialism does not change the pattern. When focusing on categories with expressive brands, individuals in the religion as self-worth condition demonstrate lower brand reliance than those in the neutral condition ($\alpha = -1.16$, $t = -2.30$, $p = 0.02$), but individuals in the religion as security ($\alpha = 0.44$, $t = 0.86$, $p = 0.39$) and others' religion conditions ($\alpha = 0.06$, $t = 0.12$, $p = 0.91$) do not. This pattern does not exist among categories with functional brands.

3.5.3. Discussion of Study 3 Results. By asking individuals to focus on a specific aspect of religion, this study demonstrates that one important reason that religion may reduce brand reliance is because it provides a source of self-worth that reduces individuals' needs to express self-worth through brands. We find that individuals who think about religion as a source of self-worth show less brand reliance than those in a neutral condition. Furthermore, this effect exists in self-expressive product categories but not in functional ones. Moreover, we find that individuals who think about religion as a source of security or think about the religion of others do not show this decreased tendency to rely on self-expressive brands. Thus, this study demonstrates that not just any aspect of religiosity will result in decreased brand reliance. Instead, it appears that religion is most likely to reduce brand reliance when it serves as a source of self-worth expression.

Furthermore, by showing that different manipulations of religion lead to different levels of brand

reliance, this study should also alleviate concerns that priming religion just leads people to choose fewer brands because they think they are "supposed to," either because they have guessed the experimenter's hypothesis or because they believe their religion requires certain choices. Additionally, our incorporation of the measure of materialism should reduce fears that religion simply primes a disdain for materialistic values and choices.

3.6. Study 4: Experimental Manipulation of Religiosity and Expression of Self-Worth Mediation

In study 4, our goal is to directly demonstrate that a decreased need to express one's self-worth mediates the relationship between religiosity and brand reliance. Specifically, we seek to demonstrate that when religious beliefs are made salient, individuals have a weaker need to use brands to express their self-worth, which then lowers their reliance on brands. To test this hypothesis, we first manipulate the salience of religious beliefs. We then measure individuals' needs to express self-worth through brands. Finally, we measure brand reliance through a series of product choices.

3.6.1. Data Description and Collection. Forty-two participants (of which 20 were female) were recruited at a private university in the southeast region of the United States. The ages ranged from 18 to 28 years (median, 19). Participants identified themselves as Christian (42.9%), nonreligious (40.5%), Hindu (9.5%), and Buddhist (7.1%). Participants were white (38.1%), Asian (40.5%), black (9.5%), Hispanic (7.1%), and other (4.8%).

Religion. As in study 1, participants were assigned to either a religion condition or a neutral condition. In the religion condition, participants were asked to write about what their religion means to them. In the neutral condition, they were asked to write about the activities that they typically do on an average day.

Self-worth measure. To understand how the religion and neutral manipulations impacted individuals' needs to express self-worth through brands, we first asked participants to answer the one-item measure: "To what extent does buying brand-name products help you express your feelings of self-worth?" (on a scale from 1 to 5, where $1 =$ not at all and $5 =$ to a great extent). Next, we asked participants to indicate how buying brand-name products makes them feel, using a list of adjectives identified as measures of positive feelings of self-worth (Leary et al. 2001, McFarland and Ross 1982). The adjectives included proud, competent, resourceful, smart, effective, efficient, and confident ($\alpha = 0.92$). Notice that this scale represents the degree to which buying a brand injects into the individual feelings of self-worth. We expected

Table 5(a)   Study 3: Effect of Multiple Manipulations of Religiosity on Brand Reliance

Model parameter	Estimate	Standard error	*t*-Statistic	*p*-Value
Self-worth condition (among expressive brands)	−1.26	0.53	−2.38	0.02
Security condition (among expressive brands)	0.33	0.53	0.63	0.53
Other's religion condition (among expressive brands)	0.04	0.52	0.08	0.94
Self-worth condition (among functional brands)	−0.57	0.46	−1.24	0.21
Security condition (among functional brands)	0.23	0.50	0.46	0.64
Other's religion condition (among functional brands)	−0.07	0.47	−0.15	0.88
Price sensitivity (γ)	−0.58	0.21	−2.79	0.01
Brand reliance heterogeneity (σ_α^2)	−1.49	0.16	−9.16	0.00
Price heterogeneity (σ_γ^2)	−0.63	0.19	−3.37	0.00
Category-specific brand reliance (i.e., fixed effects, μ_k) for each of the 12 categories				
Category 1, μ_1	−2.21	0.51	−4.36	0.00
Category 2, μ_2	−0.94	0.44	−2.13	0.03
Category 3, μ_3	2.01	0.46	4.37	0.00
Category 4, μ_4	−1.91	0.48	−4.00	0.00
Category 5, μ_5	−0.90	0.40	−2.23	0.03
Category 6, μ_6	−0.87	0.40	−2.16	0.03
Category 7, μ_7	−0.91	0.43	−2.11	0.03
Category 8, μ_8	−0.58	0.42	−1.38	0.17
Category 9, μ_9	−2.53	0.49	−5.19	0.00
Category 10, μ_{10}	0.05	0.39	0.14	0.89
Category 11, μ_{11}	−0.43	0.51	−0.84	0.40
Category 12, μ_{12}	−0.30	0.63	−0.47	0.64

Note. The base condition is the neutral one.

Table 5(b)   Study 3: Effect of Multiple Manipulations of Religiosity on Brand Reliance, Controlling for Materialism

Model parameter	Estimate	Standard error	*t*-Statistic	*p*-Value
Self-worth condition (among expressive brands)	−1.16	0.51	−2.30	0.02
Security condition (among expressive brands)	0.44	0.51	0.86	0.39
Other's religion condition (among expressive brands)	0.06	0.50	0.12	0.91
Self-worth condition (among functional brands)	−0.49	0.44	−1.12	0.26
Security condition (among functional brands)	0.33	0.48	0.70	0.48
Other's religion condition (among functional brands)	−0.05	0.46	−0.12	0.91
Materialism	0.47	0.19	2.46	0.01
Price sensitivity (γ)	−0.54	0.20	−2.64	0.01
Brand reliance heterogeneity (σ_α^2)	1.51	0.18	8.37	0.00
Price heterogeneity (σ_γ^2)	0.54	0.19	2.82	0.00
Category-specific brand reliance (i.e., fixed effects μ_k) for each of the 12 categories				
Category 1, μ_1	−3.59	0.78	−4.61	0.00
Category 2, μ_2	−2.33	0.74	−3.14	0.00
Category 3, μ_3	0.63	0.73	0.86	0.39
Category 4, μ_4	−3.29	0.76	−4.33	0.00
Category 5, μ_5	−2.26	0.71	−3.18	0.00
Category 6, μ_6	−2.23	0.71	−3.14	0.00
Category 7, μ_7	−2.29	0.73	−3.13	0.00
Category 8, μ_8	−1.94	0.72	−2.71	0.01
Category 9, μ_9	−3.90	0.76	−5.10	0.00
Category 10, μ_{10}	−1.30	0.70	−1.87	0.06
Category 11, μ_{11}	−1.83	0.78	−2.35	0.02
Category 12, μ_{12}	−1.66	0.85	−1.96	0.05

Note. The base condition is the neutral one.

that individuals with weak needs to use brands to express their self-worth would score low on this scale. A *z*-score was formed to combine the one-item measure of self-worth with this scale measure (both measures held independently as mediators). We consider this combined variable to be a reflection of individuals' needs to express their self-worth through brands.

Brand reliance. Participants were then asked to choose products in 12 different categories. The list of products was the same as in study 3, and thus half of the categories included a self-expressive brand and the other half included a functional brand. The procedure was again the same as what is described in study 1.

3.6.2.   Results. To test our hypothesis that the need for expression of self-worth mediates the rela-

tionship between religiosity and brand reliance, we estimate the choice model with and without the self-worth mediator. When this variable is not included (see Table 6(a)), we find that individuals in the religion condition demonstrate less brand reliance (among the categories with self-expressive brands) than those in the neutral condition ($\alpha = -1.05$, $z = -2.50$, $p = 0.01$). As expected, this relationship does not exist among categories with functional brands ($\alpha = -0.41$, $z = -0.96$, $p = 0.33$).

Table 6(a) Study 4: Effect of Manipulation of Religiosity on Brand Reliance

Model parameter	Estimate	Standard error	t-Statistic	p-Value
Religion × expressive brands	−1.05	0.42	−2.50	0.01
Religion × functional brands	−0.41	0.43	−0.96	0.33
Price sensitivity (γ)	−1.13	2.25	−0.50	0.62
Brand reliance heterogeneity (σ_α^2)	0.91	0.17	5.29	0.00
Price heterogeneity (σ_γ^2)	0.03	2.15	0.01	0.99
Self-worth mediator	0.00	—	—	—
Category-specific brand reliance (i.e., fixed effects, μ_k) for each of the 12 categories				
Category 1, μ_1	0.76	0.46	1.67	0.09
Category 2, μ_2	−2.03	0.58	−3.49	0.00
Category 3, μ_3	0.62	0.86	0.72	0.47
Category 4, μ_4	1.00	0.46	2.16	0.03
Category 5, μ_5	−0.57	0.46	−1.25	0.21
Category 6, μ_6	−0.45	0.46	−0.98	0.33
Category 7, μ_7	1.64	0.50	3.29	0.00
Category 8, μ_8	0.74	0.45	1.63	0.10
Category 9, μ_9	−1.75	0.57	−3.06	0.00
Category 10, μ_{10}	1.33	0.48	2.77	0.01
Category 11, μ_{11}	0.56	0.47	1.20	0.23
Category 12, μ_{12}	0.62	0.51	1.22	0.22

Table 6(b) Study 4: Effect of Manipulation of Religiosity on Brand Reliance, Controlling for Self-Worth Mediator

Model parameter	Estimate	Standard error	t-Statistic	p-Value
Religion × expressive brands	−0.57	0.42	−1.37	0.17
Religion × functional brands	0.06	0.43	0.15	0.88
Price sensitivity (γ)	−0.93	2.24	−0.41	0.68
Brand reliance heterogeneity (σ_α^2)	0.78	0.17	4.64	0.00
Price heterogeneity (σ_γ^2)	0.02	1.47	0.01	0.99
Self-worth mediator	0.60	0.20	2.95	0.00
Category-specific brand reliance (i.e., fixed effects, μ_k) for each of the 12 categories				
Category 1, μ_1	0.48	0.45	1.06	0.29
Category 2, μ_2	−2.32	0.58	−4.00	0.00
Category 3, μ_3	0.27	0.86	0.32	0.75
Category 4, μ_4	0.71	0.45	1.57	0.12
Category 5, μ_5	−0.86	0.45	−1.89	0.06
Category 6, μ_6	−0.73	0.45	−1.63	0.10
Category 7, μ_7	1.36	0.49	2.78	0.01
Category 8, μ_8	0.46	0.44	1.03	0.30
Category 9, μ_9	−2.03	0.57	−3.58	0.00
Category 10, μ_{10}	1.05	0.47	2.23	0.03
Category 11, μ_{11}	0.26	0.46	0.58	0.56
Category 12, μ_{12}	0.32	0.50	0.63	0.53

Next, to test the hypothesis that a lower need to express self-worth through brands mediates this relationship, we included the self-worth index in the estimation (see Table 6(b)). As a result, the relationship between the manipulations and brand reliance is no longer significant ($\alpha = -0.57$, $z = -1.37$, $p = 0.17$).[6]

3.6.3. Discussion of Study 4 Results. Study 4 allows us to directly demonstrate that religion reduces brand reliance by reducing individuals' needs to use brands to express their feelings of self-worth. Specifically, we find that when individuals are primed with religion, they are less likely to need branded products to express self-worth than individuals in a neutral state. As a result, they are less likely to choose brands than those who are not primed with religion (when the brands possess highly expressive attributes). It is important to note that this need to express self-worth through brands does not impact the choice of brands with primarily functional attributes.

4. General Discussion

This research was designed to provide a theoretical perspective and empirical evidence to support what many have guessed—that religiosity and brands are related. We find that the relationship between religiosity and brand reliance is negative and can be seen at the state, county, and individual levels. Furthermore, at the individual level it is found both when religiosity is experimentally primed (studies 1, 3, and 4) and when it is measured as a chronic individual difference (study 2).

Furthermore, studies 1 and 2 not only document the relationship between religiosity and brand reliance, they also demonstrate the role of self-expression in this relationship. Specifically, in both studies the relationship exists for product categories in which brands enable self-expression but does not exist for categories in which the main benefits from the brand are primarily functional. In study 2, we also find that the relationship (in the self-expressive product category) is the strongest among extraverts (i.e., individuals who are high in extraversion). Because extraverts are people who have a high need to express themselves, this finding reinforces the role of self-expression in the relationship between religiosity and brand reliance.

Given that both brands and religion are well positioned to express a sense of self-worth, we suggest that it is the expression of self-worth that leads to the negative relationship between religiosity and brand

---

[6] Because the Sobel test does not apply to a model with unobserved heterogeneity, we have also estimated a model without such heterogeneity and applied the test to determine whether the drop in significance of religiosity when the self-worth index is included is reliable. The Sobel test statistic is significant (test statistic = −2.47, $p = 0.01$).

reliance. Studies 3 and 4 provide support for this hypothesis. Specifically, study 3 demonstrates that priming religiosity as a vehicle for expressing self-worth leads to a decrease in brand reliance, but priming it as satisfying other needs (e.g., security) does not lead to the same result. Study 4 directly identifies the mediating role of self-worth expression in this relationship.

Taken together, these studies reveal a negative relationship between religiosity and brand reliance across various data sets, various measures of religiosity, and three different empirical approaches (field, survey, and experimental). Furthermore, the empirical work goes beyond just documenting the relationship; it suggests that the expression of self-worth is an underlying driver of the relationship.

4.1. Future Research
Although we view the identification of the mechanism behind the relationship between religiosity and brand reliance as an important contribution of this research, we do not claim that this is the only mechanism behind this relationship. That said, the evidence in studies 3 and 4 suggests that the expression of self-worth is certainly an important mechanism. Specifically, in study 4 we find that self-worth is a mediator, and when it is accounted for in the estimation, the relationship between religiosity and brand reliance becomes insignificant. Study 3 does not demonstrate that self-worth is the only mechanism, but it eliminates a significant candidate—security. Whereas these studies seem to suggest that self-worth is a primary mechanism, we prefer to think about them as providing evidence for the self-worth idea as one of the primary mechanisms, rather than as eliminating other possible (possibly secondary) mechanisms. We hope that future studies can examine such additional mechanisms.

Future research might also further investigate the role of self-worth in consumers' preferences for brands. Although there is evidence on the usefulness of brands in expressing self-worth (Dalton 2008), this line of research is in its early stages. Our study contributes to this line of research by demonstrating that the expression of self-worth plays an important role and can explain interesting phenomena in brand choice. We hope that our findings will encourage future research into the importance of this type of expression for brands.

In considering additional avenues for future research, we reemphasize here that "brands" and "religion" are very broad concepts, and we have thus focused on specific aspects of each in this research. Examining other specific aspects of these concepts and tracing the web of the relationship between the two seems promising in light of our results.

Future research might also seek to understand which stages of a consumer's decision process are affected by religiosity. Is religiosity influential in whether individuals become aware of branded and nonbranded products? Does it impact the initial attitudes that they develop and the items that they are willing to consider? Or is religiosity primarily influential in the final choice phase? Our data suggest that religiosity certainly plays a role in the choice phase, independent of its possible impact on other phases of the decision process. (In studies 1, 3, and 4, where religiosity was manipulated, we can be confident that religiosity was not driving brand choice as a function of awareness or previous attitudes toward brands because there should not have been systematic differences in such factors across the manipulated conditions. As for differences in consideration, all participants were forced to consider the same two items, so differences in what people considered is unlikely to be where the action lies.) However, this is not to say that religiosity does not also play a role in earlier phases of the decision process. For example, our theory would also support the notion that religiosity is critical in determining what people are willing to consider (i.e., highly religious individuals should develop consideration sets that consist of a higher proportion of nonbranded products than nonreligious individuals). Religiosity might also differentially impact the degree to which people become aware of and initially react to the introduction of brands versus generics, or it might lead consumers to differentially favor certain generics versus brands during the initial attitude formation phase of the decision process.

It is also important to note that our research does not address the question, "Why do some people express their self-worth via religion whereas others do it via brands?" and the related question, "Why do some geographical areas experience intense religion activity whereas others have a strong brand presence?" One possible answer comes to mind: social influence. Such an influence can have two facets: parental influence, which leads to personal habits, and the influence of social groups (i.e., where do your coworkers spend their Sundays—at the mall or at church?). These aspects lead to persistence (within a family) and consistency (within a geographical area). Putting them together implies that areas that have had strong religious activity in the past (say, by the end of the 19th century) might still experience a strong presence of religion, whereas areas that were developed more recently (say, in the second part of the 20th century, when the power of brands was rising) might be more populated with brands. This idea is somewhat related to Bronnenberg et al. (2009). Related to the idea of understanding how religion and brands differ in prominence across individuals

and geographical areas, it would also be interesting to execute a trend analysis that explores the relationship between religion and brand reliance over time.

Finally, the substitution effect between religion and brand reliance identified in this research implies that brands and religion implicitly compete over consumers/believers. And as discussed in §1, the two sides are already adopting the techniques of their competitors: spiritual leaders are branding their religions, with virtually all denominations investing in logo design, merchandising, etc.; brands are injecting religious feeling into their products and services. Future research that explores when and how individuals and populations shift in the degree to which they use brands versus religion to meet fundamental needs (e.g., self-worth) may provide interesting insights for marketers and spiritual leaders alike in converting people from a brand to God or from God to a brand.

Acknowledgments

Thanks go to James R. Bettman, Barak Libai, Eitan Muller, Oded Netzer, Priya Raghubir, and Russell Winer, who were kind enough to share some of their expertise.

Appendix A. Exploratory Field Analysis with State- and County-Level Data

State-Level Analysis

In creating our (three alternative) crude measures, we assumed that in a geographical area in which brand reliance is high, brands should flourish and their presence should be evident. Thus, a reasonable state-level measure of brand reliance is the number of brand stores in the state, normalized by the population of the state.

Our three measures of brand reliance include (a) the number of Apple stores (per million residents) (*Apple stores*), (b) the number of brand stores (per million) (*brand stores*), and (c) the *brand–discount store ratio*. The correlations between the number of Apple stores and the other two measures (i.e., b and c) are 0.7 and 0.6, respectively, and the correlation between b and c is 0.82. We have chosen the "number of Apple stores" as a key measure because the uniqueness and strength of Apple's brand has enabled several scholars in the past to study the effects of brands on consumers (e.g., Fitzsimons et al. 2008) and to demonstrate the religious nature of brands (Belk and Tumbat 2005, Muñiz and Schau 2005). However, we recognize that the uniqueness of the Apple brand may be seen as a weakness if Apple is considered to be too unique for such an analysis. Consequently, our second measure is based on a combination of several more common brands. In constructing the list of brands to be included in this measure, we considered all the department stores in the United States. We then selected three department stores that meet the following major criteria: (a) they have many stores, (b) they have a presence in each of the states in the United States, and (c) they are clearly selling branded goods. The three stores

that we found suitable for our task were Macy's, Gap, and Banana Republic.[7]

The third measure of brand reliance is a ratio between brand and discount stores. The discount stores we use are Costco, Kmart, Target, Walmart, and Sam's. These five were chosen because (a) they have many stores, (b) they have a presence in each state of the United States, and (c) they have a clear "value" positioning. This *brand–discount store ratio* measure is less sensitive to the states' level of consumption compared to the first and second measures.[8] We should note that we do not argue that these stores do not sell branded goods. In some cases they do (e.g., one can buy Sony in Costco). However, unlike the brand stores mentioned above that are known for their branded products, these stores are known for their "value-for-money" property. Furthermore, we do not argue that the brand equity of private labels is zero. We simply claim that brand equity is higher for the brand stores than for the discount stores. If this claim is true, the ratio between brand and discount stores should be higher in a state where brand reliance is high. Specifically, as discussed previously, brand reliance can be perceived as the weight put (by consumers) on brand equity. Thus, in a state with high brand reliance, there should be higher demand for brand stores versus discount stores, and thus this ratio captures brand reliance well.

In measuring religiosity, we use two well-accepted alternative measures in the literature: the number of congregations per thousand people in each state (*congregations*) and percentage of self-reported church and synagogue attendance in each state (*attendance*).[9] The correlation between *congregations* and *attendance* is 0.58.

Very similar religiosity measures have been used in the literature to study economic relationships. For example, McCleary and Barro (2006) study the relationship between religion and economic growth and operationalize religiosity through various measures such as frequency of attendance to religious services.

---

[7] The number of various department stores was obtained from 2005 and 2006 annual reports and corporate fact books. Apple data obtained at http://www.apple.com/retail/storelist/. We should note that Gap and Banana Republic sell only their brand-name clothing lines, and Macy's, as opposed to department stores such as Sears and JCPenney, focuses on well-known brand names.

[8] This measure accounts for the possibility that religious people simply consume less than their nonreligious counterparts. If higher religiosity implies lower consumption, then the *brand–discount store ratio* (which measures the mix of consumption rather than total consumption) should not be affected by the religiosity variables. Although this variable can be used to rule out (or not) this alternative hypothesis, we have tested it in another way. Specifically, we also collected data on retail sales in each state and normalize our first two dependent measures by retail sales to control for consumption effects. When we repeated the analysis with these measures, the main picture remained the same.

[9] The number of congregations was obtained from the 2000 American Religion Data Archive. Church and synagogue attendance percentages were obtained from a Gallup poll (Newport, F. 2006. Church attendance lowest in New England, highest in South. (April 27), http://www.gallup.com/poll/22579/Church-Attendance-Lowest-New-England-Highest-South.aspx).

The pairwise correlations between *Apple stores* and our two measures of religiosity (*congregations* and *attendance*) are −0.70 and −0.40, respectively. The *t*-statistics for these pairs are −6.84 and −3.05, respectively. In other words, there is a strong, and statistically significant, negative correlation between brand reliance and religiosity. A similar picture can be seen when using the other two measures of brand reliance. The pairwise correlations between *brand stores* and these measures of religiosity are −0.62 and −0.58 (*t*-statistics are −5.48 and −4.96, respectively), and, for the *brand-discount store ratio*, the correlations are −0.51 and −0.50 (*t*-statistics are −4.16 and −4.06, respectively).

Of course, one may argue that there are other factors that may drive any correlation between brand reliance and religiosity. For example, it is possible that consumers with lower income levels (who perhaps cannot afford to purchase branded products) resort to a higher "consumption" of religion. Although we believe that such a finding might be interesting in itself, we want to detangle it from other explanations. Similar concerns can be expressed with respect to two other potential covariates: education and urbanization. Consequently, we control for the effects of income (median income), education (college educated (%)), and urbanization (% of people who live in an urban area).[10] Descriptive statistics associated with these data are given in Table 1.

As an exploratory analysis of the empirical relationship between brand reliance and religiosity, we ran six multiple regressions for each combination of the religiosity and brand reliance measures. These six regressions are reported in Table 2.

In all the six regressions, the relationship between religiosity and brand reliance is negative. The *p*-values associated with the religiosity parameters vary between 0.02 and 0.14. We have three statistically significant results at conventional significance levels, one marginally significant result, and two insignificant results, but the lowest *t*-ratio is still 1.49.

County-Level Analysis
One shortcoming of the state-level analysis is that the number of data points is not very large. Estimating the (conditional and unconditional) correlation between religiosity and brand reliance at the county level can overcome this limitation. Furthermore, by moving to a less aggregated data set, we can check the robustness of our results.

Although data on *attendance* is not available at the county level, we were able to collect county-level information on the number of congregations per thousand people. Furthermore, because collecting our brand reliance measures at the county level is challenging, we focus on one measure—*brand stores*—and three states—California, New York, and

Texas. These states are the biggest in terms of population and are diverse in terms of political and religious views. There are 58, 62, and 254 counties in California, New York, and Texas, respectively. For Texas, we used 253 counties because no data were available for Loving County. Finally, we do not have data on the urbanization level of each county, but given that this variable was insignificant for the state-level analysis in which the dependent variable was *brand stores*, this omission does not seem significant. The table below reports the results of the multiple regressions.

	DV: *Brand stores* estimate (*t*-statistic)	
Congregations	−1.046	(−3.89)
Income	0.000001	(−0.03)
Education	46.85	(7.88)
Constant	−2.87	(−1.71)
R-Squared	0.35	
Adjusted *R*-squared	0.34	

These estimates demonstrate the robustness of our findings. Exactly as in the state-level data, the coefficient of the religiosity variable is negative. Furthermore, it remains statistically different from zero, even after controlling for income and education. The only difference from the state-level analysis is that the income effect is statistically insignificant.

Appendix B. An Experiment with "True" Generics
We seek to replicate the effect of religiosity on brand reliance by focusing on choices between branded products and "true" generics. We expect to find that priming religion will lead to less brand reliance, particularly when product categories provide self-expressive benefits.

Data Description and Collection
Participants were recruited from an online panel. Three hundred and seven participants (of which 219 were female) completed the survey with ages ranging from 18 to 87 years (median, 59). Participants identified themselves as Christian (67.4%), nonreligious (16.3%), Jewish (7.2%), Buddhist (1.0%), Hindu (1.0%), and other (7.2%). Participants were white (89.6%), Asian (2.0%), black (2.3%), Native American (2.6%), Hispanic (1.3%), and other (2.3%).

Religiosity. As in study 1, we first activated religious beliefs through priming. Half of the participants were assigned to the "religion" condition, and the other half were assigned to the "neutral" condition, both of which are described in study 1.

Brand Reliance. After the manipulation, participants were given 15 opportunities to choose between a branded and a generic product. This time, instead of the generic product being associated with a particular store or private label, it was simply identified by its product type. For example, in a choice of medicine, participants chose between Bayer Aspirin and aspirin with no brand or store associated with it. Further, participants chose products from categories that vary in the degree to which they allow for self-expression. The list of categories included "fashion" (e.g., fleece jacket, sunglasses), "high risk" (e.g., life insurance, refrigerator), and "convenience" (e.g., toothbrush, cotton swab). We expected that fashion would provide the

greatest opportunity for self-expression and would thus show the greatest differences in brand reliance among people who were primed with religion versus those who were not.

Results

We again leverage the choice model described in Appendix A to isolate brand reliance. As expected, we find a main effect of condition whereby the religiosity priming leads to lower brand reliance ($\alpha = -0.26$, $z = -2.18$, $p = 0.03$). It is important to note that this effect is strongest for the fashion category ($\alpha = -0.60$, $z = -2.10$, $p = 0.04$) relative to the high risk ($\alpha = -0.17$, $z = -1.15$, $p = 0.25$) and convenience categories ($\alpha = -0.17$, $z = -1.07$, $p = 0.28$).

Discussion

This experiment demonstrates that the relationship between religiosity and brand reliance is robust. We replicate our previous results by using true generics. We also replicate our earlier finding that the relationship is more pronounced among categories that allow for self-expression.

References

Aaker, D. A. 1991. *Managing Brand Equity: Capitalizing on the Value of a Brand Name*. Free Press, New York.

Aaker, J. L. 1999. The malleable self: The role of self-expression in persuasion. *J. Marketing Res.* **36**(1) 45–57.

Bagwell, L. S., B. D. Bernheim. 1996. Veblen effects in a theory of conspicuous consumption. *Amer. Econom. Rev.* **86**(3) 349–373.

Banister, E. N., M. K. Hogg. 2003. Possible selves: Identifying dimensions for exploring the dialectic between positive and negative selves in consumer behaviour. *Adv. Consumer Res.* **30**(1) 149–150.

Belk, R. W. 1988. Possessions and the extended self. *J. Consumer Res.* **15**(2) 139–168.

Belk, R., G. Tumbat. 2005. The cult of Macintosh. *Consumption, Markets Culture* **8**(3) 205–217.

Bellizzi, J. A., H. F. Krueckeberg, J. R. Hamilton, W. S. Martin. 1981. Consumer perceptions of national, private, and generic brands. *J. Retailing* **57**(4) 56–70.

Braden, C. S. 1947. Why people are religious: A study in religious motivation. *J. Amer. Acad. Religion* **15**(1) 38–45.

Bronnenberg, B. J., S. K. Dhar, J.-P. H. Dubé. 2009. Brand history, geography, and the persistence of brand shares. *J. Political Econom.* **117**(1) 87–115.

Chong, K. H. 1997. What it means to be Christian: The role of religion in the construction of ethnic identity and boundary among second-generation Korean Americans. *Sociol. Religion* **59**(3) 259–286.

Crocker, J., R. K. Luhtanen, M. L. Cooper, A. Bouvrette. 2003. Contingencies of self-worth in college students: Theory and measurement. *J. Personality Soc. Psych.* **85**(5) 894–908.

Cunningham, I. C. M., A. P. Hardy, G. Imperia. 1982. Generic brands versus national brands and store brands. *J. Advertising Res.* **22**(5) 25–32.

Dalton, A. N. 2008. Look on the bright side: Self-expressive consumption and consumer self-worth. Ph.D. dissertation, Duke University, Durham, NC.

Dick, A. S., A. K. Jain, P. S. Richardson. 1995. Correlates of store brand proneness: Some empirical observations. *J. Product Brand Management* **4**(4) 15–22.

Escalas, J. E., J. R. Bettman. 2003. You are what they eat: The influence of reference groups on consumers' connections to brands. *J. Consumer Psych.* **13**(3) 339–348.

Essoo, N., S. Dibb. 2004. Religious influences on shopping behaviour: An exploratory study. *J. Marketing Management* **20**(7/8) 683–712.

Fitzsimons, G. M., T. L. Chartrand, G. J. Fitzsimons. 2008. Automatic effects of brand exposure on motivated behavior: How Apple makes you think different. *J. Consumer Res.* **35**(1) 21–35.

Francis, L. J. 2005. God images and self-esteem: A study among 11–18 year-olds. R. L. Piedmont, ed. *Research in Social Scientific Study of Religion*, Vol. 16. Brill Leiden, The Netherlands, 105–122.

Goldfarb, A., Q. Lu, S. Moorthy. 2009. Measuring brand value in an equilibrium framework. *Marketing Sci.* **28**(1) 69–86.

Grubb, E. L., H. L. Grathwohl. 1967. Consumer self-concept, symbolism and market behavior: A theoretical approach. *J. Marketing* **31**(4, Part 1) 22–27.

Hill, P. C., R. W. Hood Jr., eds. 1999. *Measures of Religiosity*. Religious Education Press, Birmingham, AL.

John, O. P., E. M. Donahue, R. L. Kentle. 1991. The Big Five Inventory—Versions 4a and 54. Institute of Personality and Social Research, University of California, Berkeley, Berkeley.

Keller, K. L. 2003. *Strategic Brand Management: Building, Measuring, and Managing Brand Equity*, Vol. 2. Pearson Education, Upper Saddle River, NJ.

Kleine, R. E., III, S. S. Kleine, J. B. Kernan. 1993. Mundane consumption and the self: A social-identity perspective. *J. Consumer Psych.* **2**(3) 209–235.

Leary, M. R., C. A. Cottrell, M. Phillips. 2001. Deconfounding the effects of dominance and social acceptance on self-esteem. *J. Personality Soc. Psych.* **81**(5) 898–909.

Lerner, J. S., D. Keltner. 2001. Fear, anger, and risk. *J. Personality Soc. Psych.* **81**(1) 146–159.

Lewins, F. W. 1978. Australia: Religion and ethnic identity. H. Mol, ed. *Identity and Religion: International, Cross-Cultural Approaches*. Sage Publications, Beverly Hills, CA, 19–38.

McCleary, R. M., R. J. Barro. 2006. Religion and economy. *J. Econom. Perspectives* **20**(2) 49–72.

McFarland, C., M. Ross. 1982. Impact of causal attributions on affective reactions to success and failure. *J. Personality Soc. Psych.* **43**(5) 937–946.

Muñiz, A. M., Jr., H. J. Schau. 2005. Religiosity in the abandoned Apple Newton brand community. *J. Consumer Res.* **31**(4) 737–747.

Nelson, P. B. 1989. Ethnic differences in intrinsic/extrinsic religious orientation and depression in the elderly. *Arch. Psychiatric Nursing* **3**(4) 199–204.

Pearce, M. J., T. D. Little, J. E. Perez. 2003. Religiousness and depressive symptoms among adolescents. *J. Clinical Child Adolescent Psych.* **32**(2) 267–276.

Richardson, P. S., A. S. Dick, A. K. Jain. 1994. Extrinsic and intrinsic cue effects on perceptions of store brand quality. *J. Marketing* **58**(4) 28–36.

Richins, M. L. 2004. The material values scale: Measurement properties and development of a short form. *J. Consumer Res.* **31**(1) 209–219.

Rindfleisch, A., N. Wong, J. E. Burroughs. 2010. God & Mammon: The influence of religiosity on brand connections. S. H. K. Wuyts, M. G. Dekimpe, E. Gijsbrechts, R. Pieters, eds. *The Connected Customer: The Changing Nature of Consumer and Business Markets*. Lawrence Erlbaum Associates, Mahwah, NJ, 163–202.

Salisbury, L. C., F. M. Feinberg. 2010. Alleviating the constant stochastic variance assumption in decision research: Theory, measurement, and experimental test. *Marketing Sci.* **29**(1) 1–17.

Seul, J. R. 1999. "Ours is the way of God": Religion, identity, and intergroup conflict. *J. Peace Res.* **36**(5) 553–569.

Sirgy, M. J. 1982. Self-concept in consumer behavior: A critical review. *J. Consumer Res.* **9**(3) 287–300.

Smith, C. B., A. J. Weigert, D. L. Thomas. 1979. Self-esteem and religiosity: An analysis of Catholic adolescents from five cultures. *J. Sci. Stud. Religion* **18**(1) 51–60.

Sood, J., Y. Nasu. 1995. Religiosity and nationality: An exploratory study of their effect on consumer behavior in Japan and the United States. *J. Bus. Res.* **34**(1) 1–9.

Spilka, B., P. Shaver, L. A. Kirkpatrick. 1985. A general attribution theory for the psychology of religion. *J. Sci. Stud. Religion* **24**(1) 1–20.

Tomkins, R. 2001. Brands are new religion, says advertising agency. *Financial Times* (March 1), http://www.humphreys.co.uk/articles/e_commerce_3.htm.

Watson, D., L. A. Clark, A. Tellegen. 1988. Development and validation of brief measures of positive and negative affect: The PANAS scales. *J. Personality Soc. Psych.* **54**(6) 1063–1070.

Williams, R. B. 1988. *Religions of Immigrants from India and Pakistan: New Threads in the American Tapestry*. Cambridge University Press, New York.

Worthington, E. L., Jr., N. G. Wade, T. L. Hight, J. S. Ripley, M. E. McCullough, J. W. Berry, M. M. Schmitt, J. T. Berry, K. H. Bursley, L. O'Connor. 2003. The religious commitment inventory—10: Development, refinement, and validation of a brief scale for research and counseling. *J. Counseling Psych.* **50**(1) 84–96.