Religious attendance as reproductive support

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Abstract

We argue that a central function of religious attendance in the contemporary United States is to support a high-fertility, monogamous mating strategy. Although religious attendance is correlated with many demographic, personality, moral, and behavioral variables, we propose that sexual and family variables are at the core of many of these relationships. Numerous researchers have assumed that religious socialization causes people to feel moral reactions and engage in behaviors promoted by religious groups. On our view, mating preferences are centrally involved in individual differences in attraction to religious groups. In a sample of 21,131 individuals who participated in the US General Social Survey, sexual behaviors were the relatively strongest predictors of religious attendance, even after controlling for age and gender. Effects of age and gender on religious attendance were weaker and substantially reduced when controlling for sexual and family patterns. A sample of 902 college students provided more detailed information on religious, moral, and sexual variables. Results suggest that (1) moral views about sexual behavior are more strongly linked to religious attendance than other moral issues, and (2) mating strategy is more powerful than standard personality variables in predicting religious attendance. These findings suggest that reproductive strategies are at the heart of variations in religious attendance.
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1. Introduction

Whereas the United States is often referred to as a highly religious nation—which it is relative to other Western countries—on measures of religiosity like service attendance, the US population is in fact remarkably divided. According to data from the 2006 wave of the US General Social Survey (GSS), around 42% of adults hardly ever attend religious services, around 18% attend several times a year or once a month, and around 40% attend services more or less regularly (two or three times a month or more).

What are the causes and consequences of these differences in religious attendance? To understand religious participation in the contemporary United States, we propose the following Reproductive Religiosity Model: whatever their cognitive foundations or historical sources, a primary function of religious groups in the contemporary United States is to support low-promiscuity, marriage-centered, heterosexual, high-fertility sexual and reproductive strategies. Religious groups do this through the enforcement of moral norms and the provision of familial support that mitigate the risks and enhance the effectiveness of these strategies. The relationship between religious participation and sexual and family variables is a causally complex one where past religious participation makes low-promiscuity, high-fertility strategies more attractive, but also where those favoring these strategic elements will have increased incentives (and those pursuing alternate strategies will have decreased incentives) to affiliate with religious groups, incentives that can change over the life course.

To say that participation in religious groups serves the function in the contemporary United States of assisting low-promiscuity, high-fertility reproductive strategies is not to say that this is either the evolved or even historical function of religiosity generally or religious participation specifically. Our view is that, whatever the evolved sources or historical developments, in the contemporary United States, religious participation has come to serve, among other ends, the goal of buttressing a limited set of competitive sexual and

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reproductive strategies. We expand on this point in the conclusion. There are numerous facets of religious belief and behavior, likely driven by different cognitive and affective mechanisms. Our model is, to a large extent, orthogonal to evolutionary work exploring the cognitive foundations of religious beliefs (e.g., Atran, 2002; Boyer, 2001; Kirkpatrick, 2005), which we find generally plausible in explaining the evolutionary foundations but largely silent on the sources of contemporary individual differences. To the extent these theorists would claim that that religious attendance serves no *current* function within the contemporary United States, we would have a real disagreement; however, we do not believe that these theorists have made that claim.

1.1. The relationship between contemporary religious participation and evolved mating and reproductive strategies

Evolutionary approaches to human mating and fertility posit an evolved psychology that contains a complex mix of available sexual and reproductive strategies, with individual differences in people's choice of strategies influenced by a range of individual, ecological, and cultural factors (Buss & Schmitt, 1993; Gangestad & Simpson, 2000; Hill & Kaplan, 1999; Kaplan & Gangestad, 2005; Kenrick, Li, & Butner, 2003; Schaller & Murray, in press; Schmitt, 2005). Mating strategies can involve short-term and long-term approaches. Fertility decisions balance concerns over optimal timing of life events, embodied capital investments, and the quality and quantity of offspring. In mating and fertility decisions, complex tradeoffs are called into play in relation to individuals' own features (e.g., mate value) and local conditions, resulting in widespread strategic diversity both within and across cultures.

In the contemporary United States, this diversity is on brilliant display. According to data from the 2006 wave of the GSS, for Americans in their 40s and 50s, around 29% have had only one or two sexual partners since age 18 years, while 32% have had 10 or more; around 37% are in a first marriage, while around 46% have experienced divorce (with around 41% of these divorced individuals having remarried); around 21% have had no children, while 31% have had three or more.

To understand our Reproductive Religiosity Model, one must first acknowledge the typical tradeoffs and risks of monogamous, long-term, high-fertility strategies. For men pursuing these strategies, the basic bargain is that they are agreeing to high levels of investment in wives and children while foregoing extra-pair mating opportunities. In return, they receive increased paternity assurance and increased within-pair fertility. Given that these men are making high levels of familial investment, their central risk is cuckoldry.

For women pursuing these strategies, the basic bargain is that they are agreeing to provide increased paternity assurance and within-pair fertility while foregoing opportunities to obtain sexier genes for their children. In return, they receive increased male investment. Their central risk is male

abandonment, especially when they have higher numbers of young children. Indeed, following the sharp rise in divorce rates in the 1960s and 1970s, single mothers and their children now form the core of American poverty (Casper & Bianchi, 2002).

In addition to risks from spousal infidelity or abandonment, high-fertility strategies also place financial and household management burdens on families. Events that may be manageable inconveniences for most single people or childless couples—like getting the flu, temporarily being laid off from work, or uninsured damage from a storm—can become very serious problems for families with young children. In addition, a further risk of high-fertility strategies is that children from large families will be individually less well funded than their social competitors on average.

A central claim of the Reproductive Religiosity Model is that one of the primary functions of religious groups in the United States is to help tip the balance of the risks outlined above in favor of monogamous, high-fertility strategies. Individuals pursuing these strategies need increased assurances of commitment from their marriage partners. Religious participants seek honest assurances by embedding themselves within sexually conservative communities that increase the social costs of, and reduce opportunities for, promiscuity. Religious groups do not simply express a dislike for promiscuous conduct—they express moral condemnation. Moralizations of this sort impose genuine social costs on those who are noncompliant, damaging their reputations and ostracizing them. These moralizations serve not only to manipulate the cost–benefit equations for members but also to discourage those with competing, disruptive strategies from affiliating with the group in the first place. Also, religious groups typically do not limit their moral enforcement to their own members but work to impose sexually conservative norms on their wider communities, including, in recent decades, through organized political efforts.

In addition to the propagation and enforcement of moral norms benefiting low-promiscuity, high-fertility strategists, religious groups in the United States also typically have as part of their core mission the provision of everyday support for members. These programs can range from informal efforts (such as when women team up to provide meals for the family of a sick mother); to Mother's Day Out programs providing babysitting once a week so that mothers can run errands; to daily daycare operations, private schools, or home-schooling assistance; and to charitable collections to help members through hard times, including those who have lost work, experienced uninsured property loss, or suffered the death of a spouse.

The Reproductive Religiosity Model relies on the fact that individuals adjust their level of religious participation over the course of their lives, in sync with ongoing life-history plans and outcomes that affect the relevant cost–benefit calculus. Young adults, for example, may often abandon religious participation in the years before they

settle down and start families, particularly when they are drawn to partying, hooking up, and other sorts of promiscuous experimentation before attempting long-term, child-rearing relationships. Elderly people, in contrast, usually have much less to lose by submitting to prohibitions against promiscuous conduct and can find increased benefits in religious groups' community involvement and social-insurance functions, even when their children have grown and left their households.

Our approach finds common ground with suggestions by Kirkpatrick (1999, 2005) and Buss (2002). Both raise the possibility that people may be attracted to or repelled from religious affiliations by the fit between long-term reproductive strategies and traditional family morals, by the social and coalitional support provided by religious groups, and other motives that have been explored in evolutionary analyses. Indeed, Kirkpatrick (2005) makes a specific prediction that we test below—that gender differences in religiosity might derive from gender differences in preferred mating strategies.

1.2. Predictions

In this article, we explore the relationships posited by the Reproductive Religiosity Model. A primary prediction is that correlations with religious attendance involving sexual and family variables will typically be larger in size than correlations involving other variables. Further, we hypothesize that controlling for sexual and family variables will typically reduce substantially the relationships between religious attendance and other variables but that controlling for other correlates typically will not reduce substantially the relationships between religious attendance and sexual and family variables. This pattern would support our theory that sexual and family variables play a central role in the relationship between religious attendance and its other correlates.

We test these predictions in three ways. First, we investigate correlations involving age, gender, and cohort with religious attendance in a representative US sample. Most discussions of these relationships assume a straightforward causal flow from age/gender/cohort to religious participation and then to sexual and family behaviors (for exceptions, see McCullough, Enders, Brion, & Jain, 2005; Stolzenberg, Blair-Loy, & Waite, 1995). If the standard view held, one would not expect that controlling for sexual and family lifestyle variables would substantially reduce the relationship between age/gender/cohort and religious attendance.

Second, we investigate correlations involving various personality variables and sexual and family behaviors and plans in an undergraduate sample. Most discussions assume that personality variables affect religiosity, which then affects sexual and family behaviors and plans, a model that would not predict that controlling for sexual and family behaviors and plans would substantially eliminate the relationships between other personality variables and religious attendance.

Third, we investigate correlations involving a range of moral views in an undergraduate sample. Our claim is that sexual and family morals are dominant correlates of religious attendance. These moral attitudes are not only centrally concerned with the direct prohibition of nonmarital sexual behavior but also related sexual and family issues such as pornography, divorce, cohabitation, homosexuality, drinking and drug usage (which are transparently associated with promiscuity), and abortion and birth control (which reduce the costs of promiscuity and enhance the ability of small-family strategists to produce well-funded children).

Most discussions of the moral correlates of religiosity claim no special role for sexual and family morals. According to common accounts, religious groups espouse a range of moral views, including conservative sexual morals, injunctions against lying, stealing, and other antisocial behaviors, as well as, for most faiths, injunctions to help the poor, treat one's neighbors well, and related prosocial views. Indeed, it is common to see religious groups described as institutions of generalized sociality or social control, serving the primary function of increasing within-group cooperation (e.g., Kenrick, Neuberg, & Cialdini, 2007; Sosis & Alcorta, 2003; Spilka, Hood, Hunsberger, & Gorsuch, 2003; Wilson, 2002). We do not deny that religious participation is often correlated with general prosocial views, and we find it plausible that under various conditions, religious behavior might primarily serve functions relating to within-group cooperation. However, our claim is that within the contemporary United States these functions, though they may exist, are typically not as important in explaining individual differences in religious attendance as the motives cited by the Reproductive Religiosity Model. Therefore, we predict that the sexual and family factors will include the strongest correlates and that many of the smaller prosocial correlations essentially will be byproducts of conservative sexual and family morals within the contemporary United States. There may indeed be fruitful connections between our approach and views of religious behaviors as costly signals of in-group loyalty (e.g., Sosis & Alcorta, 2003), but our view is that, in the contemporary United States, religious groups have more to do with supporting a set of competitive reproductive strategies than with supporting more general alliances.

2. Methodology

2.1. US General Social Survey

We analyzed data from two samples. The first was the GSS, a project that has been surveying probability samples of American adults on a wide variety of items every year or two since 1972. We excluded individuals for whom sexual history was not available, which had the effect of excluding all waves prior to 1989 (the year the GSS first started obtaining sexual history), half of the 2006 wave, as well as those with missing data in the ordinary course. We also excluded individuals

with missing data on frequency of religious attendance, marital history, or children.

Our final GSS sample included 21,131 individuals. The average age was 44.5 (S.D.=16.6), the average year of birth was 1953.2 (S.D.=17.3), and the sample was 56% female. The sample contained 80% European Americans, 13% African Americans, 4% Latino Americans, 1% Asian Americans, and 2% others. Regarding religious affiliation, the sample contained 57% Protestants, 24% Catholics, 2% Jews, 4% others, and 13% with no religious affiliation.

Our religious participation variable was a single item that measured frequency of religious attendance, from a low value of "never" to a high value of "more than weekly." The lifestyle variables included number of sexual partners since age 18 (capped at 20 sexual partners and log-transformed), marital history, and number of biological children ever born (capped at 8 children).

2.2. Undergraduate sample

Our undergraduate sample consisted of students at four American universities, one in the Southwest (39% of the sample), one in the Southeast (27% of the sample), one in the North-central region (22% of the sample), and one in the South-central region (12% of the sample). Participants received course credit for participation and took the survey online. We excluded individuals with missing data on our religious participation variables as well as all participants beyond their fourth year or over the age of 23 years to ensure a comparable undergraduate sample across the four institutions.

Our final student sample for this dataset included 902 individuals. The average age was 19.2 (S.D.=1.3) and the sample was 61% female. The sample contained 68% European Americans, 10% Asian Americans, 9% Latino Americans, 8% African Americans, and 5% others. Regarding religious affiliation, the sample contained 32% Protestants, 26% Catholics, 7% Jews, 3% Muslims, 2% Orthodox Christians, 2% Buddhist, 6% other, and 22% with no religious affiliation.

We asked two questions about frequency of religious attendance: how frequently participants attend religious services now and how frequently they expected to attend if they were to have young children. Overall, 18% were presently attending services weekly or more, and 51% expected to go with their own children to services weekly or more.

We asked about future family plans, including, on seven-point Likert scales, whether they expected to marry, whether they expected to have children, how important desire to have children would be in their long-term mate selection, whether they thought they would seek divorce if their spouse were behaving in an unacceptable manner, and their sexual orientation. We asked the age at which they thought they would marry, the age at which they thought they would have their first child, and the number of children they expected to have. We included a modified version of the Sociosexual Orientation Index, for which we eliminated the item

regarding how many one-night stands they have had (we find that participants are confused by the wording of this item) and added an item on participants' number of nonintercourse (hookup) partners in the past 3 years, in addition to breaking down number of past sexual partners into heterosexual and homosexual partners.

We standardized the sociosexual variables and, following Jackson & Kirkpatrick (2007), we divided them into two groups—one containing items regarding past sexual experience ("Past sex"; Cronbach's α=.64) and the other containing the items relating to sociosexual attitudes, anticipated future partners, and sexual fantasies ("Sociosexual attitudes"; Cronbach's α=.84).

Questions involving desire for marriage, desire for children, desire for a long-term mate who wants children, and number of children desired were closely related, so we standardized them and combined them into a single item ("Family desire"; Cronbach's α=.82). Age expected at marriage and age expected at first child were also closely related (r=.75), and were combined into a single item ("Family age").

We included a short version of the Big 5 personality items (Rammstedt & John, 2007), a 12-item self-control scale (Cronbach's α=.85), and an eight-item sensation-seeking scale (Cronbach's α=.80). We also asked about the number of times per month they typically got drunk.

Our moral measures had the participants rate the immorality of a number of items on seven-point Likert scales, which were presented to participants in random order. The items relating directly to sexual and reproductive strategies included casual, non-intercourse sex (e.g., oral sex where the partners are not in a serious relationship with each other or with anyone else) ("Hooking up"); casual sexual intercourse (where the partners are not in a serious relationship with each other or with anyone else) ("Casual sex"); sexual intercourse with a person where one of the partners is in a serious relationship with someone else ("Cheating sex"); homosexual sexual activity ("Homosexuality"); using birth control ("Birth control"); aborting a recently conceived embryo ("Abortion"); and getting divorced ("Divorce"). The items not relating directly to sexual and reproductive strategies included getting drunk ("Drunk"); using recreational drugs like marijuana ("Drugs"); shoplifting something inexpensive from a store ("Shoplifting"); lying to a friend to spare their feelings about something not very important ("Small lie"); lying to a friend about something important ("Big lie"); lying to one's parents about how one spends one's time ("Lie to parents"); disobeying one's parents ("Disobey parents"); cheating on an exam ("Cheat on exam"); teasing someone who does not have many friends and making them feel bad ("Teasing"); disobeying traffic laws like speed limits, requirements to signal when changing lanes, etc. ("Traffic laws"); refusing to forgive someone who has done wrong ("Not forgiving"); being demanding and unpleasant with a waiter/waitress or a store clerk and making them feel bad ("Demanding"); using

Table 1
Correlations and partial correlations between religious attendance and sexual, family, and demographic variables from the GSS sample (*N*=21,131)

	Correlations with religious attendance	Partial correlations, controlling for other variables	Partial correlations, controlling for variables reproductive
Reproductive variables:			
Sex partners	−.28	−.23	–
Married and not divorced	.20	.17	–
Children	.16	.10	–
Other variables			
Age	.16	–	.06
Cohort	−.16	–	−.06
Female	.13	–	.05

All *p* values <.001.

curse words in everyday speech ("Cursing"); keeping what one has for oneself, when there are people around who have greater needs ("Not sharing"); and telling a friend you cannot help them with something they need when you really could help ("Not helping").

3. Results

3.1. Relationships between religious participation and lifestyle variables

Table 1 shows relationships between frequency of religious attendance and various sexual and family variables

and demographic variables from our GSS sample. Our primary prediction was that the sexual and family variables as a group would be stronger correlates and would reduce the effects of the demographic variables to a greater extent than the demographic variables would reduce the effects of the sexual and family variables in partial correlations. The predictions held—the largest correlations in Table 1 involve number of sexual partners and whether the respondent has been married and not divorced, and controlling for the sexual and family variables in partial correlations reduced the size of the relationships between attendance and the demographic variables almost to 0.

Table 2 shows relationships between frequency of religious attendance and various sexual and family variables and drinking, personality, and gender variables from our undergraduate sample. Again, our primary prediction was that the sexual and family variables as a group would be stronger correlates and would reduce the correlations involving the other variables to a greater extent than those other variables would reduce the correlations involving the sexual and family variables in partial correlations. The prediction again held. The strongest correlates of religious attendance in Table 2 involve sociosexual attitudes, past sex partners, desire to marry and have children, age expected at marriage and first child, and expectations regarding whether the participant would initiate divorce if the spouse was behaving unacceptably. The only other variable approaching the size of these correlations was frequency of getting drunk. Though we do not include it among the sexual and family variables, drinking is strongly related to promiscuous sexual activity among university students (Weeden & Sabini, 2007). And, as with the GSS results, controlling for the sexual and

Table 2
Correlations and partial correlations between religious attendance and sexual, family, drinking, personality, and gender variables from an undergraduate sample (*N*=902)

	Correlations:		Partial correlations, controlling for other variables:		Partial correlations, controlling for reproductive variables:	
	Present attendance	Future attendance	Present attendance	Future attendance	Present attendance	Future attendance
Reproductive variables:						
Sociosexual attitudes	−.36 **	−.30 **	−.28 **	−.25 **	–	–
Past sex partners	−.28 **	−.15 **	−.20 **	−.12 **	–	–
Family desire	.19 **	.27 **	.17 **	.24 **	–	–
Family age	−.18 **	−.25 **	−.13 **	−.20 **	–	–
Divorce initiation	−.25 **	−.18 **	−.23 **	−.18 **	–	–
Homosexual	−.10 *	−.12 **	−.11 *	−.11 *	–	–
Other variables:						
Drunk	−.27 **	−.12 **	–	–	−.09 *	.02
Self control	.12 **	.02	–	–	−.02	−.09 *
Sensation seeking	−.16 **	−.11 *	–	–	−.01	.01
Extraverted	.01	.06	–	–	.06	.06
Agreeable	.11 *	.12 **	–	–	−.01	.01
Conscientious	.11 *	.10 *	–	–	.02	.01
Anxious	−.04	−.05	–	–	.01	−.03
Open	−.08	−.07	–	–	−.07	−.06
Female	.06	.12 **	–	–	−.04	.01

* *p*<.01.
** *p*<.001.

Table 3
Correlations and partial correlations between religious attendance and restrictive moral views from an undergraduate sample (*N*=902)

	Correlations		Partial correlations, controlling for other variables		Partial correlations, controlling for reproductive variables	
	Present attendance	Future attendance	Present attendance	Future attendance	Present attendance	Future attendance
Reproductive variables						
Abortion	.53 **	.46 **	.35 **	.30 **	–	–
Casual sex	.50 **	.42 **	.26 **	.23 **	–	–
Homosexuality	.49 **	.43 **	.30 **	.28 **	–	–
Hooking up	.49 **	.39 **	.25 **	.18 **	–	–
Divorce	.34 **	.31 **	.16 **	.16 **	–	–
Birth control	.24 **	.18 **	.07	.04	–	–
Cheating sex	.19 **	.16 **	.08	.07	–	–
Other variables						
Drunk	.42 **	.28 **	–	–	.06	−.05
Drugs	.38 **	.32 **	–	–	−.01	−.02
Cursing	.36 **	.35 **	–	–	.05	.11 *
Disobey parents	.31 **	.29 **	–	–	.04	.07
Lie to parents	.30 **	.22 **	–	–	.04	−.01
Not forgiving	.26 **	.20 **	–	–	.11 *	.07
Shoplifting	.22 **	.22 **	–	–	.04	.07
Not sharing	.20 **	.21 **	–	–	.05	.10 *
Small lie	.20 **	.19 **	–	–	−.05	−.02
Not helping	.15 **	.17 **	–	–	.06	.11 *
Cheat on exam	.16 **	.15 **	–	–	.02	.04
Big lie	.15 **	.11 *	–	–	.00	−.03
Teasing	.09 *	.11 *	–	–	.02	.06
Traffic laws	.09	.06	–	–	−.03	−.03
Demanding	.05	.06	–	–	.01	.03

* *p*<.01.
** *p*<.001.

family variables in partial correlations in the undergraduate sample reduced the size of the relationships between attendance and the nonsexual and nonfamily variables almost to 0.

3.2. Relationships between religious participation and moral attitudes

In Table 3, we show a similar analysis with the undergraduate sample on the relationships between frequency of attendance and views on the immorality of various behaviors relating to sexual and family matters and not relating to sexual and family matters. Our prediction was that the sexual and family moral correlates (i.e., those directly relating to diverse sexual and reproductive strategies) would be larger in size and would reduce the correlations involving the nonsexual and nonfamily moral variables to a greater extent. As with the prior analyses, the sexual and family correlates were dominant. The leading correlates are those reproductive variables involving widely contested behaviors in the contemporary United States—abortion, casual sex and hooking up, homosexuality, and divorce—along with those variables closely associated with promiscuous lifestyles among college students—drinking, drug usage, cursing, and lying to and disobeying parents. Controlling for sexual and family morals eliminated almost entirely most of the relationships between frequency of attendance and a variety of nonsexual and nonfamily morals.

The results in Table 3 indicate a strong degree of overlap among the various moral variables and a substantial overall association between religious attendance and moralization in a wide range of contexts. Even among the reproductive morals, there was substantial reduction in size after controlling for moral attitudes not directly relating to reproductive matters. Indeed, the weaker reproductive correlates of religious attendance in the sample (involving birth control and cheating sex) were reduced almost fully by controlling for the range of nonreproductive morals. We do not have a ready account of why the relationships involving abortion, casual sex, and homosexuality should be so much stronger than those involving birth control and cheating sex, but this does not interfere with the general point: the clearly dominant correlations involve moral attitudes relating to sex and fertility.

4. Discussion

Previous research has established that religious attendance is correlated with a host of other variables and generally assumed a particular causal direction—that socialization into a religious culture resulted in certain types of moral judgments and behaviors (e.g., Cohen & Rozin, 2001). The present analyses examined the relative importance of the widely discussed correlates of religious attendance but suggest a different possible explanation, one

involving the underlying social functions of religious groups. As predicted by the Reproductive Religiosity Model, the clearly dominant correlates of religious attendance among those we tested involve morals and lifestyles emphasizing low-promiscuity, marriage-centered, heterosexual, and high-fertility sexual and reproductive strategies.

Our results replicate prior findings that age, cohort, gender, agreeableness, conscientiousness, sensation seeking, and a range of cooperative morals all correlate with frequency of religious attendance. However, we go beyond prior studies in showing further that these relationships tend to be substantially smaller in size than, and usually reduced almost entirely by controlling for, variables tracking differences in sexual and family lifestyles and morals.

Given that controlling for sexual and family lifestyles almost fully eliminated the relationship between age, cohort, and gender on the one hand and religious attendance on the other, it is a plausible explanation that a causal chain exists going from age, cohort, and gender to sexual and family lifestyles and then to religious attendance. This conclusion is significant because it claims causal flow from lifestyles to religiosity, while most accounts claim in contrast that the causal flow runs from age, cohort, and gender to religiosity to lifestyles. These traditional accounts would not predict that controlling for lifestyles would almost fully reduce the relationship between age, cohort, and gender on the one hand and religious attendance on the other.

Similarly, many religion researchers would claim that personality variables affect religiosity, which then affects sexual and family variables. However, this claim does not predict that sexual and family variables could statistically account for the relationship between personality variables and religious attendance, which we found in our undergraduate sample.

In the end, we believe we found solid evidence for two empirical points that flow from the Reproductive Religiosity Model. The first is that sexual and family correlates dominate nonsexual and nonfamily correlates of religious attendance. Without regard to one's view on the direction of causality involved, we have clear evidence that individual differences in sexual and family traditionalism are at the heart of individual differences in religious participation. Second, we have presented evidence that, while not necessarily definitive, is strongly suggestive that these sexual and family differences can be causes and not just effects of differences in religious attendance. On our view, these findings can be explained as a result of individuals' decisions to increase or decrease their level of religious participation as a function of whether participation advances or hinders their conditional, competitive sexual and reproductive strategies.

5. Conclusion

We have presented a model claiming that a central function of participation in contemporary US religious groups is the support of monogamous, high-fertility reproductive strategies. Morals and lifestyles that relate to these reproductive strategies tend to dominate other correlates of religious attendance and do so in a manner consistent with the view that differences in reproductive strategies may in part play a causal role in determining differences in religious participation. This is not to say, though, that other motivations do not simultaneously affect religious participation. For example, it seems likely to us that some individuals may be motivated by desires for greater involvement in local communities (perhaps at times for benefits relating to social insurance or business development), ethnic ties (as in the case of African-American churches and Jewish synagogues), and a range of other social motives. Different individuals and different religious groups might call into play various mixtures of complex motives. Furthermore, we have focused on religious attendance, not other aspects of religiousness. Clearly, religious attendance (a social act) can more directly serve reproductive and support functions than some other aspects of religiousness, such as belief in God. We make no claims here about the manner in which this model relates to other aspects of religiousness.

To be clear, the Reproductive Religiosity Model is meant to apply narrowly to the primary religious groups in the contemporary United States. Our claim is that, in the United States, at this point in history, religious participation centrally involves moralizing and supporting a low-promiscuity, marriage-centered, heterosexual, high-fertility reproductive strategy. While we see interesting parallels in, for example, historical accounts of Puritanical prohibitions and modern accounts of sexually restrictive Islamic cultures, we express no firm opinion on whether the details of our account of the contemporary United States apply to religious groups in past centuries in the United States, to religious groups in other countries, or even to every religious or ethnic group within the contemporary United States. We do not claim that there is anything that *necessarily* connects religious participation with sexual conservatism. Indeed, for example, based on data we obtained from university students in Singapore, we have good reason to believe that individual differences in religiosity among Asian Buddhists has little to do with differences in sexual matters.

We do not present an "evolutionary theory of religiosity" in its typical sense—that is, we are not expressing any opinion on the ancient evolutionary foundations of religious concepts or sensibilities. Instead, the claims are that humans have evolved adaptations for a variety of competitive sexual and reproductive strategies, including adaptations involving the use of social alliances and moralistic pressures in support of those strategies, and that in the contemporary United States, religious participation has become primarily involved with these strategic support efforts for those pursuing low-promiscuity, marriage-centered, heterosexual, high-fertility strategies.

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