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The Chronic Dependence of Popular Religiosity upon Dysfunctional Psychosociological Conditions

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Abstract: Better understanding the nature, origin and popularity of varying levels of popular religion versus secularism, and their impact upon socioeconomic conditions and vice versa, requires a cross national comparison of the competing factors in populations where opinions are freely chosen. Utilizing 25 indicators, the uniquely extensive Successful Societies Scale reveals that population diversity and immigration correlate weakly with 1st world socioeconomic conditions, and high levels of income disparity, popular religiosity as measured by differing levels of belief and activity, and rejection of evolutionary science correlate strongly negatively with improving conditions. The historically unprecedented socioeconomic security that results from low levels of progressive government policies appear to suppress popular religiosity and creationist opinion, conservative religious ideology apparently contributes to societal dysfunction, and religious prosociality and charity are less effective at improving societal conditions than are secular government programs. The antagonistic relationship between better socioeconomic conditions and intense popular faith may prevent the existence of nations that combine the two factors. The nonuniversality of strong religious devotion, and the ease with large populations abandon serious theism when conditions are sufficiently benign, refute hypotheses that religious belief and practice are the normal, deeply set human mental state, whether they are superficial or natural in nature. Instead popular religion is usually a superficial and flexible psychological mechanism for coping with the high levels of stress and anxiety produced by sufficiently dysfunctional social and especially economic environments. Popular nontheism is a similarly casual response to superior conditions.

Keywords: religion, secularization, universality, socioeconomics, societal dysfunction, successful societies scale

Introduction

A series of questions has long surrounded the origin, evolution and the psychology of mass belief in and worship of supernatural gods, and its increasing displacement by the rise of secularism in the prosperous democracies. Key matters of inquiry include whether religious devotion is natural or supernatural in origin, why it has been nearly universal over most of human history, and why it is no longer so in advanced democracies (Bloom, 2007; Boyer, 2008; Dennett, 2006 who all agree that religion is a natural and deeply set product of the human mind). It is becoming apparent that answering these questions is dependent upon testing the contending hypotheses that characterize the opposing sides in the culture war ongoing in the United States.

Another set of questions mark the long standing cultural and political debate that continues dominate the American scene (Paul, 2005). What theological, social and economic arrangement produces the best possible societal conditions? In an influential trade book social researcher Brooks (2006) proposed that America's combination of libertarian capitalism with a high (for the 1st world) level of belief in and worship of a moral creator that encourages faith-based charity and other prosocial habits is more effective than is the government based assistance that is characteristic of the more secular 1st world democracies. Other popular works, some bestsellers, concur with the moral-creator socioeconomic hypothesis. Boyle (2005), Coulter (2006), O'Reilly (2006), D'Souza (2007), Stark (2008), Murray (2009) and Richards (2009) picture the U.S. as a "Shining City on the Hill" that stands as an example of faith-based prosperity and success to the rest of the world, and portray other, less religious and more liberal advanced democracies as socially and economically defective. Creationists further contend that popular acceptance of evolutionary science contributes to societal dysfunction (Asma, 2007; Coulter, 2006; D'Souza, 2007; Numbers, 2005). Some economic researchers (Barro, 2004; Fogel, 2000; Malloch, 2003) purport that "spiritual capital" is an important factor for national economic success, and Barro and McCleary (2003) offer that popular belief in heaven and hell is too. Note that these arguments are not limited to issues of spirituality and morality, but involve economics as well. The effort to portray religion as a necessary component of societal health and prosperity has been so successful that many Americans hold discriminatory attitudes towards proevolution nontheists, transforming atheism and the science of evolution into major societal fear factors (Edgell, Gertels, and Hartmann, 2006; Gallup, 2008).

The opposing secular-democratic socioeconomic hypothesis predicts that higher levels of popular nonreligiosity and acceptance of evolutionary science in democratic countries are actually associated with superior national conditions. Popular works, some best sellers, that support this hypothesis often propose the high degree of economic equability derived from the blend of capitalism modulated by progressive policies typical of secular societies that is responsible for their success (Bloom, 2008; Dawkins, 2006; Harris, 2006; Hitchens, 2007; Kawachi and Kennedy, 2002; Paul and Zuckerman, 2007; Phillips, 2006; Reid, 2004; Shermer, 2006; Wilkinson, 2005). Academic studies that present or cite evidence in favor of the secular-democratic socioeconomic hypothesis that is popular in Europe (Zuckerman, 2008) include Norris and Inglehart (2004) and Norenzayan and Shariff (2008), and especially Paul (2005, 2008) and Zuckerman (2006, 2008). Norris and Inglehart (2004) and Paul and Zuckerman (2007) support the socioeconomic security hypothesis that the development of a middle class majority that is sufficiently financially and socially secure due to progressive secular socioeconomic policies consistently results in a serious and measurable decline in religiosity.

Despite wide popular interest in the above issues, and the public's need for rigorous analysis over ideological driven polemics, technical research in the area has not been correspondingly comprehensive and sufficient (Bloom, 2007; Dennett, 2006; Paul, 2005; Shermer, 2006). The failure to produce a general purpose cross-national comparison of overall social and economic conditions based a broad set of indicators is especially unwarrantable. The need is all the more pressing because the U.S. and is in the process of making major decisions about the future configuration of the national socioeconomic arrangement as a result of ongoing economic and political events and crises, and appears to be undergoing the progressive secularization process characteristic of western nations (Pew, 2007) that has led to warnings by advocates of the moral-creator socioeconomic hypothesis. Norenzayan and Shariff (2008) only briefly considered the socioeconomic results of varying levels of religious versus secular prosociality in advanced nations, Jensen (2006; the only mainstream researcher to examine Paul [2005] and verified the basic result of the latter) quantitatively examined only homicide, Stark (2001) ignored reliable homicide data in favor of just a few statistically problematic indicators, Barro and McCleary (2003) considered only economic factors, and Brooks (2006) neglected much of the statistical evidence that contradicts his thesis. Broader quantitative comparisons to date have been the Happy Planet Index (Marks, Abdallah, Sims, and Thompson, 2006) with three indicators, Zuckerman (2006) with an informal examination of several, and Paul (2005) with ten plotted societal measures; these did not include a statistical analysis, or consider the issues of prosociality or causality in depth. Dennett (2006) and Bloom (2007) suggest that the controversial nature of the subject is inhibiting research (the *Journal of Religion and Society* refuses to consider further papers on the subject). Paul (2005), Shermer (2006) and Bloom (2008) have called for deeper investigations of the problem, including an explanation of why advanced nations with low levels of religious prosociality enjoy superior conditions in many measures of social health, even though it religious Americans appear to benefit from their theistic beliefs and practices compared to more secular citizens.

This study is intended to advance the investigation of the competing hypotheses on the origin, mental basis, popularity, and societal efficacy of mass religion versus secularism. In order to do so the first general purpose, broad based measure of socioeconomic conditions, the Successful Societies Scale (SSS) was constructed using over two dozen indicators to assess and compare societal and economic indicators in the 1st world. Also constructed is the special purpose Popular Religiosity Versus Secularism Scale (PRVSS) based on seven measures of mass religiosity and secularism in the same nations. The SSS and PRVSS, as well as the indicators they contain, are cross correlated with one another, as well as with measures of population diversity and immigration in order to determine what factors exhibit the strongest relationships. The raw results are used to test the competing socioeconomic hypotheses, and are combined with a review of related research to propose explanations for the observed pattern. The results of the analysis are then used to examine aspects of the nature, psychology, beginnings, and evolution of high rates of popular religiosity, as well as recent declines in western democracies.

Materials and Methods

Defining and grading religiosity

This study focuses on long term trends in popular opinion, with emphasis on the higher levels of religiosity that led to the high levels of activity, and/or serious belief in the existence of one or more supernatural deities. These criteria contain a range of religious opinion that

includes but is more diverse than absolute belief or belief in a single deity as well as organized supernaturalism, but excludes the more societally more peripheral nonscientific beliefs that have been mixed in with serious religious devotion in other studies.

The above orientation is necessary in a study that explores the large scale effects that popular religiosity and socioeconomics have upon one another, because it is the presence of absence of strong rates of religiosity versus their absence that are widely seen as having, and probably have, a major influence upon national conditions. For particular research purposes insufficient attention has been paid to the important differences that distinguish the type, depth and universality of spirituality and religious belief and activity. For example, American's level of belief in ghosts and haunted houses is nearly as widespread as fundamentalist creationism (Gallup 2005, 2006a), but the former is not a major cultural movement that has the profound impact on national politics enjoyed by the creationist cause. Nor is the degree of belief in ghosts commonly cited as potential causal factor in the level of national societal dysfunction either in academic studies or best selling popular books, and is rarely brought up in electoral contests. Likewise Gallup (2005) observes that American's belief in things paranormal is almost as high as is the level of belief in god/s, yet the latter has much greater effect on the culture war. The sociopolitical influence of organized religion compared to other supernaturalistic belief systems is of course due in part to its organization, combined with the claim that the deity of worship is an all important moral agent. In this study a spiritual person who believes in and worships a god with moral attributes and is regularly attends religious services is rated more religious than one who equally believes in a moral god but does not participate in organized worship, who in turn is more religious than a person who does not believe in or worship a god but does have a spiritual belief in amoral ghosts or astrology.

Because the emphasis is on popular trends, terms such as religious and secular are used to characterize and contrast the views of national populations, rather than the configuration of governments; the U.S. is labeled as religious compared to secular Britain because the population of the latter is less theistic than that of the former, even though the British government is officially Anglican and the American Constitution is secular

Sample selection

In accord with some data sources for this study (such as Panchaud, Singh, Darroch, and Darroch, 2000; Singh and Darroch, 2000), the nations sampled are limited to the prosperous 1st world democracies (per capita income at least \$23,000 circa 2000) with a population of about 4 million or more that have not recently experienced systemic ethnic violence such as Northern Ireland. This sample limitation is a recommended procedure because it minimizes extraneous variables that are associated with dramatic differences in education and income levels as well as political systems, in accord with Jowell's rule (1998) that "analysts of cross-national data should resist the temptation to compare too many countries at once" in order to avoid the sociological version of comparing apples and oranges (Neapolitan, 1997; Paul, 2005). Because all but Japan are share western cultures with a predominantly EuroChristian heritage this variable is also minimized, while the inclusion of the Asian Japanese culture adds a potentially informative variation. At a practical methodological level the limitation is unavoidable in that a set of statistical measures of socioeconomic conditions as comprehensive as that utilized here is available only for the prosperous democracies (as per Panchaud et al., 2000; Singh and Darroch, 2000), sociological statistics from 2nd and 3rd world nations are often unreliable if they are available at all (Gartner, 1995; Jowell, 1998; Neapolitan, 1997; Paul, 2005); the Happy Planet Index was limited to just three variables partly because quality statistics are often

unavailable for most of the 2nd and 3rd world countries included (Marks et al., 2006). Additional issues also contribute to diminishing scientific returns if the sample is extended outside the advanced democracies. By definition only 1st world nations have the potential for the great majority of the population to be socioeconomically healthy in critical factors such as lifespans and financial prosperity. It appears that all 2nd and 3rd world countries where the balance between religion and disbelief are largely organic are strongly religious (Barrett, Kurian, and Johnson, 2001; Norris and Inglehart, 2004; Paul and Zuckerman, 2007; Pew 2002, 2007), reducing their usefulness for comparative analysis. Those developing nations with lower rates of religiosity are currently or recently communistic states where state coercion has skewed the level of popular organic religiosity, and dysfunctional authoritarian socialism has contaminated the socioeconomic results. 2nd and 3rd world nations include a diverse array of dictatorial to democratic governments that maximizes extraneous factors. The prosperous democracies therefore comprise the best available mass epidemiological statistical sample, one that consists of 800 million citizens.

Religious indicator selection and scoring

Mass opinion on levels of religiosity and secularism are measured and graded by absolute belief in a supernatural creator deity (a superior measure of religious devotion than general belief in God because the latter includes partial doubters), Bible literalism (a proxy for the conservatism of mass faith), frequent attendance at religious services and frequency of prayer that measure religious activity, belief in an afterlife, agnostics and atheists, and acceptance of human descent from animals which is also a measure of creationist opinion (see Appendices). In order to maximize data uniformity, most plotted data for popular religiosity is from the International Social Survey Program 1998 Religion II poll. The ISSP statistics for western and eastern Germany were combined in accord with their respective populations. That the ISSP sampled absolute belief in a creator is another reason it forms the database for this study, although this excludes Belgium and Finland because they are not members of the consortium. International data on acceptance of human descent from animals is from the ISSP 1993 and the Eurobarometer Europeans, Science and Technology of 2005 surveys, values are averaged when the same country was sampled by both polls. That polling on absolute belief in a creator and evolution is very limited outside the 1st world is another cause to focus on the prosperous democracies.

In order to approximately measure the over all, cumulative level of popular religiosity and secularism the absolute data values for each indicator that are available for each nation are normalized by scoring them on a 0-10 scale, with zero being applied to the most religious value present in a given sample of prosperous democracies and 10 to the most secular figure. The average score on the 0-10 scale is then calculated for each nation, less any data gaps, creating its cumulative Popular Religiosity Versus Secularism Score for each nation that are used to construct the Popular Religiosity Versus Secularism Scale for 1st world nations.

Because the International Social Survey Program Religion II poll was conducted around the turn of the century, social indicators from the same time period were favored over more recent data sets, which differ little from the former because their has not been sufficient time for major change. The indicators chosen provide a broad over all measure of societal and economic conditions in each nation because they include the major categories that are based on sufficiently reliable data. The primary indicators examined are homicide, incarceration, juvenile mortality, lifespan, adolescent and all age gonorrhea and syphilis infections, adolescent abortion, adolescent births, youth and all age suicide, fertility, marriage, marriage

duration, divorce, life satisfaction, alcohol consumption, corruption, income, income disparity, poverty, employment, work hours and resource exploitation base (see Appendices). This totals 25 specific factors within 21 primary socioeconomic indicators; 4 of the primary indicators include two specific factors. Although it may prove difficult to build a markedly broader data set that more comprehensively measures and compares cross national socioeconomic conditions, it is hoped that this attempt will encourage further efforts.

Socioeconomic indicator selection and scoring

Homicide data (from the rigorous tallying by Barclay and Taveres, 2003) is reliable because it is based on forensic analysis and body counts. A comparison of nonlethal crime data is more a comparison of rates of inconsistent reportage by victims and recording of crime according to differing official criteria rather than of actual acts, and should not be used for direct quantitative assessments (as per Paul, 2005; contra Stark, 2001; Jensen, 2006). Interpol merely gathers and reports nonlethal crime statistics provided by member nations without standardizing or vetting it (Paul, 2005; Neapolitan, 1997; Barclay and Taveres, 2002). For example, assaults are reported at a rate about 6 times higher in Australia and Sweden than in Canada and France, this level of disparity is suspect. Rates of theft are reported to be twice as high in Sweden as in France; are the former actually twice as larcenous as the French, or are the latter twice as unlikely to file a report, or is the reality somewhere in-between? Similarly suspicious discrepancies exist in International Crime Victims Survey results. Reported rates of rape are two to twenty times higher in the U.S. than in other 1st world nations (Jay, 2004; MASA, 2003), but this only means that American females report being raped at far higher rates, not that American males are more prone to committing sexual assaults. As Neapolitan (1997) states, homicide “is generally regarded as the most valid and reliable of official cross-national crime indicators.... In general, violent crimes other than homicides – such as rapes, assaults, and robberies – should probably not be compared cross-nationally, unless there is substantial improvement in the quality of the data. Indications are that definitional, reporting, and recording differences are too great for these crimes to be suitable for analysis. This is particularly true for sexual offenses and rapes. Thus, cross-national comparisons of violent crime should probably be restricted to homicides.” Barclay and Taveres (2002), who calculate criminal act rates only for homicide, agree that “comparisons between the recorded [nonviolent and nonlethal violent] crime levels in different countries may be misleading.... since the definition of homicide is similar in most countries, absolute comparisons are possible.” Also see Zimring and Hawkins (1999), OECD (2001), Beeghley (2003) and Farrington, Langan, and Tonry (2004). That using nonlethal crime data for cross national purposes would garner severe criticism from criminologists is fortuitous in that murder is the most extreme crime, and contributes to societal fear and insecurity more than any other (Beeghley, 2003; Jensen, 2006; Neapolitan, 1997; OECD, 2001; Paul, 2005; Zimring and Hawkins, 1999).

Data for illegal drug use is also insufficiently dependable (contra Stark, 2001; Bloss, 2005; Gallinger, 2003; Siegal, 2005). Because alcohol is usually sold under government regulation levels of consumption are reasonably well recorded (WHO, 2004), and use of this drug is included following the suggestion by Jensen (2006). Incarceration levels are reliably recorded (ICPS, 2006).

The same is true of suicide because it is based on forensic analysis and body counts (WHO, 2001). Despite the reservations about including all age suicide cited in Paul (2005), these statistics are included in order to test whether inclusion of the data significantly improves the societal status of the US as suggested by Jensen (2006). The implication by Jensen (2006)

that it is appropriate to compare a number of specific causes of death is incorrect because this leads to an arbitrary competition between the myriad lethal mistakes humans are err to, so basic levels of juvenile and adult mortality are examined (UN, 2000).

Gonorrhea and syphilis infections are recorded sufficiently well to be compared cross-nationally, albeit only in a limited number of western nations according to the source utilized herein (Panchaud et al., 2000), who warn that information for HIV, chlamydia, genital herpes, and human papilloma virus is inadequate for quantitative cross-national comparisons.

The degree to which abortion is a measure of societal pathology is controversial, but it often signals a failure to use contraceptives. Sufficiently robust adolescent abortion rates are available for only a portion of the sample, birthrate data is better recorded (Singh and Darroch, 2000), the latter are compared in an age cohort where marriage is infrequent.

Low national birth rates may in part reflect a high perception of personal security, and may be a societal positive in nations that lack adequate habitable land area, and at a time when the global population is fast approaching 7 billion. Marriage versus cohabitation is a lifestyle choice, and there is little evidence that the much lower rates of marriage in secular democracies is adversely impacting the children of unmarried couples (Reid, 2004). Because these two reliably recorded indicators are often cited by advocates of the moral-creator socioeconomic hypothesis as important to societal health, fertility (UN, 2005) and marriage (UN, 2001) rates are included to discover whether they markedly improve the cumulative status of the US. Divorce laws remain inconsistent between democracies, so the statistics on marriage duration before divorces among married couples reflect both legal as well as social differences (Divorce Reform, 2002; OECD, 2001). Comparing societal contentment is valuable since the moral-creator social hypothesis predicts that those who do not believe in a creator should suffer from the chronic malaise of living a meaningless life terminated by final death. Life satisfaction (Marks et al., 2006). is considered a more robust measure of this factor than is happiness because it is somewhat less subjective, reflecting long-term fulfillment rather than transitory feelings of the respondent (Diener, Suh, Lucas, and Smith, 1999; Inglehart and Klingemann, 2000; Marks et al., 2006; Nettle, 2005). Corruption statistics are estimated with reasonable albeit inexact reliability by Transparency International (2000).

Economic statistics are generally robust. Adjusted per capita gross national product, poverty statistics and GINI income equality are from UN (2004). Because unemployment figures often do not include those who are out of but not searching for work, employment as a percentage of the working age population is the superior measure of this indicator (OECD, 2001). Average hours worked by each civilian in a year are included because the more free time a person has the more potential they have to engage in parenting and other family and neighborhood activities, to reduce stress through leisure activities, and because the combination of hours worked and per capita income is a measure of worker productivity (Rosnick and Weisbrot, 2006). Resource exploitation base or ecological footprint, the average planetary surface area needed to support each citizen within a nation, can be used to gauge the efficiency at which a nation transforms resources into beneficent societal conditions (Marks et al., 2006).

The over all, cumulative socioeconomic conditions of the 1st world nations were calculated using the same basic procedures for the PRVSS, with zero being applied to the most dysfunctional value present in a given sample of prosperous democracies and 10 to the healthiest, creating its cumulative Societal Success Score for each nation. The latter was used to construct the Successful Societies Scale for 1st world nations. No attempt was made to differentially weigh the various indicators for the SSS or PRVSS. In part this is because of the

difficulty of assessing their relative value. Is homicide, for example, twice or an order of magnitude as important than fertility levels? Also, the absence of other crime statistics suggests that giving extra weight to homicide alone is not appropriate, the same applies to the STDs included when others could not be included. In any case the results are sufficiently robust that weighing the indicators would not significantly alter the outcome.

The number of foreign born is sufficiently determinable for the purpose of this study (OECD, 2001). Measuring the diversity of a national population is much more difficult due to inherent definitional problems, the sole recent attempt to assay this dynamic is Fearon (2003) who tabulated both ethnic and cultural fractionalization. The two factors parallel one another, and cultural fractionalization was utilized in this inquiry in accord with the advice of Fearon (2003).

Statistical methods and miscellaneous

In addition to scatter plots the indicators were statistically analyzed with Pearson correlations (Table 1). Because the US is often a strong outlier the correlations were run both with all 17 nations sampled, and with the US excluded. The results proved so robust that further analysis to discern patterns within weak correlations was not necessary for the purposes of this analysis (Nardi, personal communication). In order to provide some longitudinal perspective information on long term trends is included when available.

Testing the competing socioeconomic hypotheses

The moral-creator socioeconomic hypothesis predicts that it is not possible for a nation to achieve a level of overall socioeconomic success equal to or greater than that of a significantly more religious country, so the existence of an example of a strongly secular nation that enjoys cumulative societal conditions equivalent to or better than those observed in the religious examples refutes the hypothesis. The greater the superiority of the secular nation, and the more examples of the latter that exist, the more the moral-creator socioeconomic hypothesis is overturned. The hypothesis is supported in if successful secular countries are not observed. A similar method is applied to the secular-democratic socioeconomic hypothesis that predicts the nonexistence of religious nations as successful as the least dysfunctional irreligious examples. If there is no consistent difference in the socioeconomic condition of nations regardless of the overall level of their religiosity then both hypothesis are unsubstantiated.

Results

The graphic and statistical results are presented in Table 1 and Figures 1-34, additional plots are in Paul (2005).

Popular secularism versus religiosity

The uniquely low cumulative PRVSS score for the U.S. of 0.9 demonstrates that it is the least secular nation among those sampled, with Ireland the next most religious. At the other end of the scale some nations approach and exceed a score of 9. For the purposes of this comparative investigation the U.S. is characterized as religious, the rest of the 1st world nations as secular to varying degrees. Creationist opinion correlates strongly positively with the overall level of religiosity when the U.S. is excluded and even more so when it is included.

The substantial divergence in levels of belief in a creator measured by the PRVSS indicates that popular religiosity is not universally and consistently high as are more primary

human attributes such as materialism and language to the degree that appears to have become widely accepted. Speech is truly universal because all mentally healthy adults possess highly sophisticated language skills (either verbal or signing among the deaf) that are already well developed in childhood, and it is essentially impossible for humans to be close to normally functional and social without the language abilities which the human brain and upper respiratory complex are highly adapted for (Deacon, 1998). The brain in combination with the tool making and using opposable thumb are also highly adapted for materialism. There is more variation in the degree of materialism between individuals and between societies than there are in linguistic abilities, but those that actually reject essentially all interest in material objects are considered aberrant by the great majority of humans who are highly desirous of material objects. The desire to fulfill material wishes is a primary factor behind the development of civilization and its ultimate industrial-corporate-consumer expression (Paul, in press). No mass society rejects materialism, societies that do so are small and rare, the few individuals who go to extremes to reject materialistic lifestyles are often considered mentally borderline, and even anti-materialist cults retain substantial materialism; anti-modernity Mennonites take pride in their traditionalist property and goods. Many religions that promote spirituality also involve a major materialistic component, including the acquisition of funds from participants. The degree of individual and religiosity can vary to a far greater extent. A third of the French qualify as atheists and another third are agnostics according to recent sampling (Times/Harris, 2006), and some other democracies appear to have similar levels of religious disinterest and skepticism (Zuckerman, 2006, 2008). Nor are those with little or no religious interests mentally or socially deficient or dysfunctional in the manner of those lacking substantial language abilities or material desires, many convinced atheists are successful members of society, to the degree that a large portion of the scientific community is in this cohort (Larson and Witham, 1999). Whether it is possible for large numbers of humans to lack any measurable attraction to supernaturalistic spirituality is not yet established, and it the near universality of religion until modern times shows that most if not all humans have the potential for a significant degree of religiosity. But it is clear that while language and materialism are primary aspects of the human condition that show limited or no fluctuation among populations over time and space, religiosity is a more flexible, optional, secondary factor that is not nearly as integral or consistent to human psychology as are more worldly matters -- it is probable that human interest in art is more universal than is supernaturalistic spirituality.

Stark (2008) denies a significant loss of theism in terms of opinion and practices in the U.S., contrary to the results of other major survey organizations and analysts (Barrett et al., 2001; Bruce, 2002; Kosmin and Keysar, 2009; Norris and Inglehart, 2004; Paul 2005; Paul and Zuckerman, 2007; Pew 2002, 2007, 2008; Smith and Kim, 2004; Taylor, 2003; Times/Harris, 2006; Zuckerman 2006). The only consistently worded longitudinal measure of theism versus nontheism since WW II, the classic question of whether or not the respondent believes in God or a higher power posed by Gallup and most recently Pew (2008), records an approximately threefold increase in nonbelievers matched by a loss in theists, Pew (2008) found that only half of Americans now absolutely believe in a personal God, and Pew (2002) estimates that Americans are only about half as religious as the populations of some 2nd and 3rd world nations. Liberal and moderate denominations have long experienced serious losses, but conservative churches are now declining as well in the U.S. (Rainer, 2005) as Bible literalism decreases (Gallup, 2006b). The loss of popular faith has been associated with a major demographic distortion in that men are considerably more irreligious than women, contributing to further declines in religiosity because children tend to pick up their religiosity or lack of it from their

fathers (Haug and Warner, 2000). The results of the PRVSS confirm that extensive secularization is underway via spontaneous conversion in all 1st world democracies despite the absence of significant organized atheism, the resistance of large scale organized religion, the superior reproductive replacement of religious cohorts, and the influx of religious immigrants from the 2nd and 3rd worlds (Barrett et al., 2001; Bruce 2002, Norris and Inglehart, 2004; Paul, 2005; Paul and Zuckerman, 2007; Pew, 2002; Zuckerman, 2006, 2008); only nontheism is proving able to achieve major growth via conversion, religions are more reliant on rapid reproduction and migration. Also significant is the lack of serious popular contention that has accompanied the rise of the nonreligious in most of the 1st world, the culture war being focused in the U.S. (Paul and Zuckerman, 2007; Zuckerman, 2008). Declines in religious belief and activity have often been precipitous; church attendance crashed in most western nations since World War II; Spain was still a Catholic dominated fascistic state a third of a century ago, now it is a secularized democracy where gays can get married and divorced and obtain a legal abortion like their heterosexual counterparts. Even in the relatively theistic US the nonreligious approximately doubled in just the last two decades. The empirical evidence indicates that popular religiosity is subject to strong and rapid fluctuations, with major declines being characteristic of contemporary western nations.

The Successful Societies Scale

Table 1. Pearson *r* correlations bold type when socio-economic conditions or other factors improve or rise with increasing secularism, regular type when factors deteriorate or decrease with increasing secularism. No underline = correlation not significant, thin underline = correlation moderate, double underline = correlation strong, thick underline = correlation very strong.

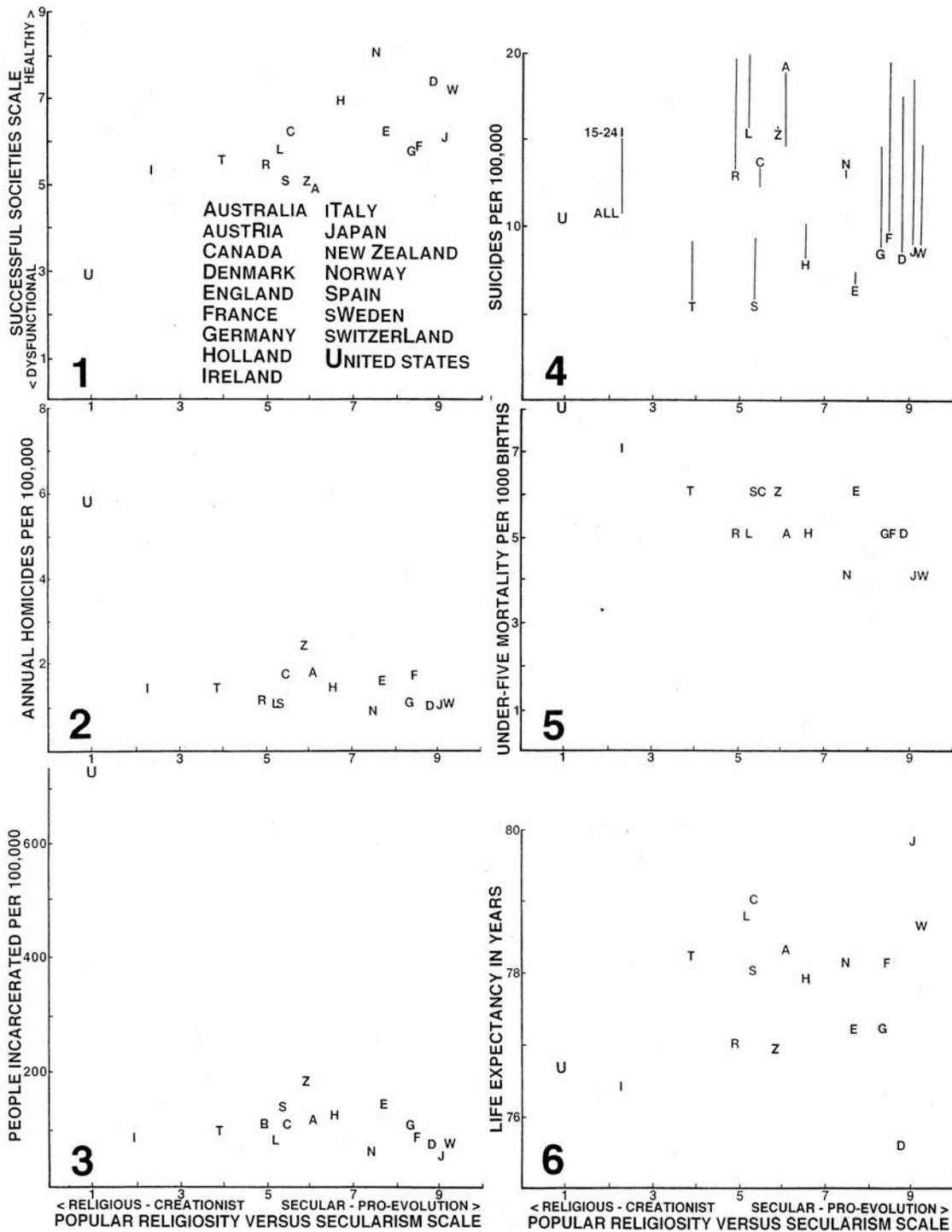
Pearson correlation	+U.S.	-U.S.	N=(+U.S.)
<i>Popular Religiosity Versus Secularism Scale compared to –</i>			
Successful Societies Scale	<u>0.705</u>	<u>0.534</u>	17
Homicides	<u>-0.611</u>	<u>-0.262</u>	17
Incarceration	<u>-0.606</u>	<u>-0.273</u>	17
Suicides 15-24 year old	<u>0.326</u>	<u>0.379</u>	17
Suicides all age	<u>0.322</u>	0.297	17
Under 5 mortality	<u>-0.835</u>	<u>-0.746</u>	17
Life expectancy	<u>0.304</u>	<u>0.198</u>	17
Gonorrhea infections 15-19 year old	<u>-0.937</u>	<u>-0.676</u>	7
Gonorrhea infections all age	<u>-0.938</u>	<u>-0.643</u>	7
Syphilis infections 15-19 year old	<u>-0.886</u>	0.213	6
Syphilis infections all age	<u>-0.856</u>	0.596	6
Abortions 15-19 year old	<u>-0.938</u>	<u>-0.825</u>	8
Births 15-17 year old	<u>-0.716</u>	<u>-0.443</u>	13
Fertility	-0.188	<u>0.038</u>	17
Marriages	<u>-0.310</u>	<u>0.197</u>	17
Marriage duration at divorce	<u>0.148</u>	<u>-0.354</u>	15
Divorces among married couples	0.298	<u>0.639</u>	17
Alcohol consumption	<u>-0.174</u>	<u>-0.345</u>	17
Life satisfaction	-0.202	-0.233	17
Corruption indices	<u>0.280</u>	<u>0.312</u>	17
Adjusted per capita income	<u>-0.390</u>	<u>-0.205</u>	17
GINI income inequality	<u>-0.813</u>	<u>-0.707</u>	17
Human poverty index	<u>-0.682</u>	<u>-0.572</u>	14
Employment levels	<u>0.205</u>	<u>0.392</u>	17
Average hours worked	<u>-0.422</u>	<u>-0.283</u>	17
Resource exploitation base	<u>-0.299</u>	0.157	17
% of population who are foreign born	-0.174	-0.178	17
Cultural fractionalization	-0.296	-0.257	17
Accept human descent from animals	<u>0.837</u>	<u>0.754</u>	16
<i>Accept human descent from animals compared to absolutely believe in God</i>	<u>-0.739</u>	<u>-0.612</u>	16
<i>Successful Societies Scale compared to -</i>			
Absolutely believe in God	<u>-0.709</u>	<u>-0.551</u>	17
Bible literalists	<u>-0.549</u>	<u>-0.256</u>	16
Attend religious services at least several times a month	<u>-0.536</u>	<u>-0.530</u>	17
Pray at least several times a week	<u>-0.711</u>	<u>-0.484</u>	16
Absolutely believe in an after life	<u>-0.669</u>	<u>-0.417</u>	16
Absolutely believe in heaven	<u>-0.725</u>	<u>-0.447</u>	16
Absolutely believe in hell	<u>-0.706</u>	<u>-0.429</u>	16
Agnostics and atheists	<u>0.547</u>	<u>0.434</u>	17
Accept human evolution from animals	<u>0.690</u>	<u>0.501</u>	17
Adjusted per capita income	<u>0.053</u>	<u>0.464</u>	17
GINI income inequality	<u>-0.822</u>	<u>-0.688</u>	17
Human poverty index	<u>-0.778</u>	<u>-0.717</u>	14
Foreign born	<u>-0.333</u>	<u>-0.395</u>	17
Cultural fractionalization	<u>-0.308</u>	<u>-0.278</u>	17

Socioeconomic conditions

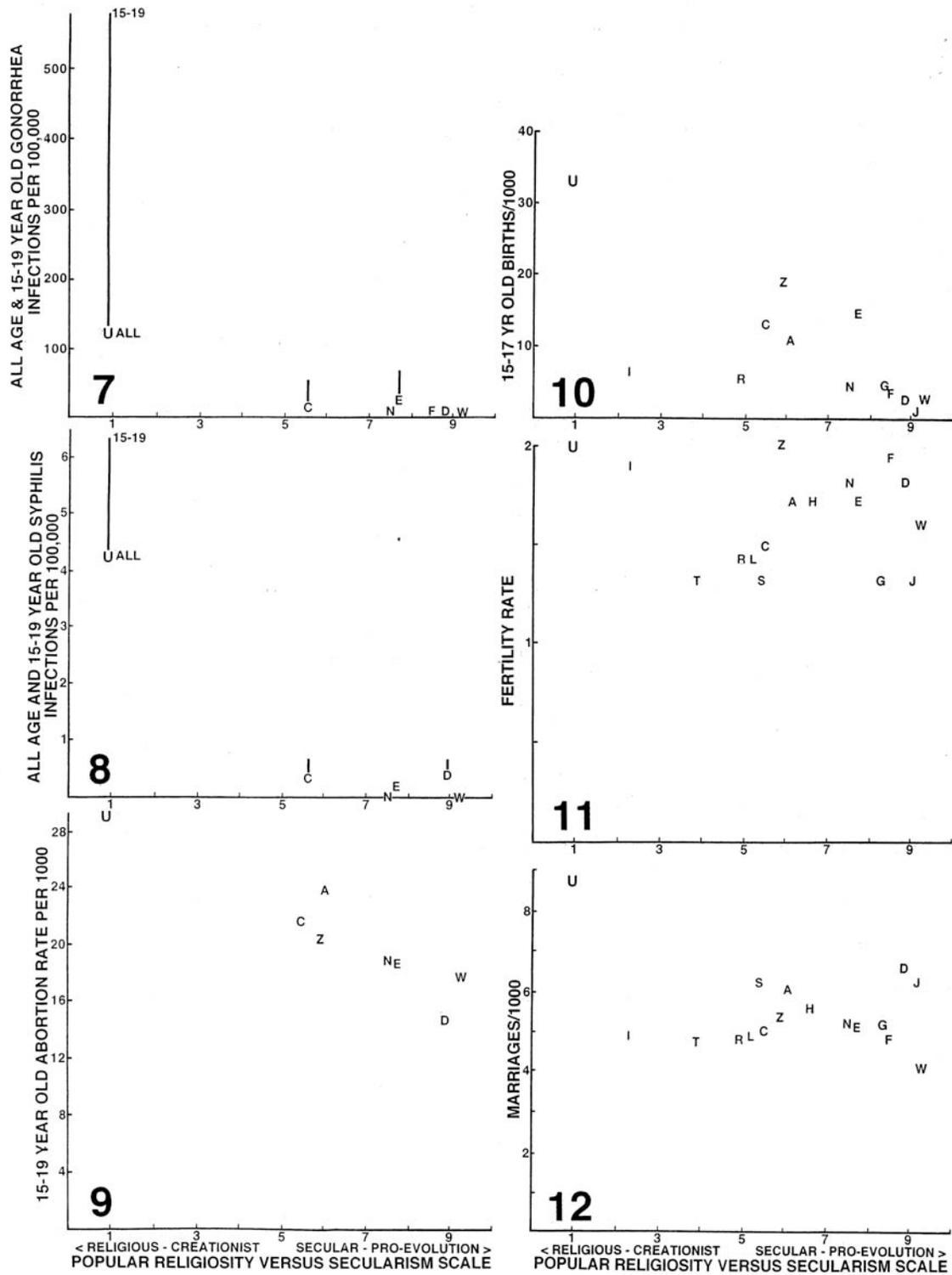
Murder was astonishingly common in crime rampant medieval Christian Europe (Lane, 1997; Neapolitan, 1997). Homicide levels in the U. S, have always been elevated well above the rates in the more secular democracies where murder rates have long been low and relatively stable, perhaps representing the minimum practically possible (Beeghley, 2003; Lane, 1997; Neapolitan, 1997). Despite a recent decline from an extreme peak in the 1980s, homicide rates are still many multiples higher in the U.S. than in any other 1st world nation (Fig. 2; Barclay and Taveres, 2003; Beeghley, 2003; Doyle, 2000; Jensen, 2006; Lane, 1997; Neapolitan, 1997; Paul, 2005), in some locations 10% of American males are murdered before age 35. Street crime-ridden cities like Detroit, Baltimore, DC, Atlanta, and New Orleans are not found in the other advanced nations (Barclay and Taveres, 2003 high murder rates sometimes reported for some European cities [UN, 2000] are exaggerated by errant inclusion of attempted homicides [Paul, in press]). Even when U.S. white-only rates are considered homicide remains above the general secular democracy levels (Barclay and Taveres, 2003; Beeghley, 2003; Doyle, 2000; Lane, 1997; Neapolitan, 1997; OECD, 2001; Paul, 2005; Zimring and Hawkins, 1999). The U.S. suffers from an unusually high level of school shootings (Hall, 2008). The correlation is very strong in favor of secularism entirely because the theistic and creationist U.S. is a strong outlier. Among the secular democracies homicides levels are consistently low, and with the U.S. removed there is no significant correlation, but the lowest homicide levels are found among some of the most hypotheistic democracies. The Interpol and International Crime Victims Survey data suggests that the U.S. is a high crime nation and is not superior to other 1st world nations in terms of nonlethal transgressions (Barclay and Taveres, 2003; Neapolitan, 1997; OCED, 2001), so inclusion of the latter should not significantly alter the cumulative SSS results in favor of the U.S.

No other country, even much more populous China, has so many inmates as does the U.S., over 2 million (ICPS, 2006). Following a steep climb in recent decades, the U.S. has half a dozen times more inmates per capita than the western norm (Fig. 3). The correlation of over 0.6 in favor of secularism is strong entirely because the U.S. is strong outlier. With the U.S. removed there is no significant correlation because incarceration rates are consistently low in the rest of the countries sampled, although the lowest incarceration levels are found among some of the most secular democracies.

Figures 1-6. See text.



Figures 7-12. See text.



The U.S. is fairly typical in youth suicide, but most of the highly secular democracies perform even better, and the correlations marginally favor secularism whether the U.S. is included or not (Fig. 4). The U.S. performs better in all age suicide, and the correlations moderately favor religious countries in this case whether or not the U.S. is included. Note that the belief that the nonreligious Scandinavian nations exhibit exceptional levels of suicide is exaggerated, nor is Japan particularly extreme.

Historical juvenile mortality rates were 50% or more, and average lifespans were just 20 years in Europe and America (Paul, 2008, 2009b). Since then enormous science and technology driven gains in reducing mortality have been achieved, but despite continued improvement no prosperous democracy loses children as rapidly as the U.S., whose mortality in infants and young children is almost twice as high as achieved by some of the most secular countries; it may not be possible to further reduce mortality rates with current technologies (Fig. 5). Some 2nd world nations have juvenile mortality rates little above the U.S. level (UN, 2000). Being above 0.7 whether the U.S. is included or not, the correlation in favor of secularism is remarkably strong. The strength of the relationship is reinforced by the progressive nature of the correlation in which higher religiosity is associated with higher losses of children and vice versa. The U.S. has among the lowest life expectancy among the sample, while highly secular Japan enjoys the longest (Fig. 6). Even though the differential is not very large in total years, the situation for the U.S. is actually worse than it seems. Although national life expectancy continues to rise, the U.S. is not keeping up with the general western pace, and now suffers from the lowest life expectancy in the 1st world (OECD, 2007). This slippage is attributable to an actual decline in average lifespans in some regions (Ezzati, Friedman, Kulkarni, and Murray, 2008), a disturbing failure occurring in none of the secular democracies (but is happening in some 2nd and 3rd world countries such as Russia). With hypotheistic Denmark exhibiting low life expectancy in the turn of the century sample the correlation in favor of secularism is modest with the U.S. included, and not significant with the U.S. excluded. Nor is there a compelling historical, mass epidemiological or clinical evidence that high rates of prayer are associated with lower levels of mortality, if anything the reverse may be true (Blumenthal et al., 2007; Paul, 2005, 2008).

STDs were endemic in old Christian Europe, and high infection rates promoted national campaigns to suppress rampant prostitution in America in the later 1800s and early 1900s (Aral and Holmes, 1996; Brandt, 1987). After being suppressed by post WW II campaigns, STDs became epidemic in the 1970s in the 1st world. Since then there has been a general decrease in western nations, but syphilis and especially gonorrhea remain at epidemic levels in the U.S., including middle class whites for the latter (Figs. 7,8; Aral and Holmes, 1996; Panchaud et al., 2000). Teen gonorrhea infection rates, for instance, are dozens to literally hundreds of times higher in the U.S. than in secular western Europe and Canada, and gonorrhea and syphilis have been nearly exterminated in the highly secular Nordic countries and France. The correlations are very strong in favor of secularism with the U.S. included in all cases. They are strong in favor of secularism with the U.S. excluded for gonorrhea. For syphilis the correlation is not significant for youth, and is moderate in favor of religiosity in the all age case. Because the sample size is limited some caution is necessary, but it is unlikely that addition of additional prosperous democracies will markedly alter the results. The data that is available suggests that the infection rates of other STDs are not lower in the U.S. relative to more secular prosperous democracies (Aral and Holmes, 1996; Panchaud et al., 2000), so inclusion of the latter would probably not significantly alter the SSS results in favor of the U.S.

Abortion rates are persistently high even when illegal (Sedgh, Henshaw, Singh, Ahman, and Shah, 2007). After a modest reduction over time youth abortion rates remain markedly higher, up to a factor of two, in the religious and creationist U.S. than in the more secular advanced democracies (Fig. 9). The correlation favoring secularism is very strong whether or not the U.S. is included, and the correlation is strongly progressive in either case.

Despite previous declines birth rates among teens that are not married are two to dozens of times lower in the secular democracies than in the U.S. (Fig. 10). The correlation is very strong in favor of secularism with the U.S. outlier included, it remains moderate with the U.S. excluded.

Following long term declines assisted by improving contraceptive technologies, the U.S. is matched in fertility only by moderately secular New Zealand, but highly secular France is not far behind (Fig. 11). Strongly secular Japan and Germany have very low fertility rates, but so do the four most religious western European nations. The correlation is not significant with the U.S. included, and is even less so with it removed.

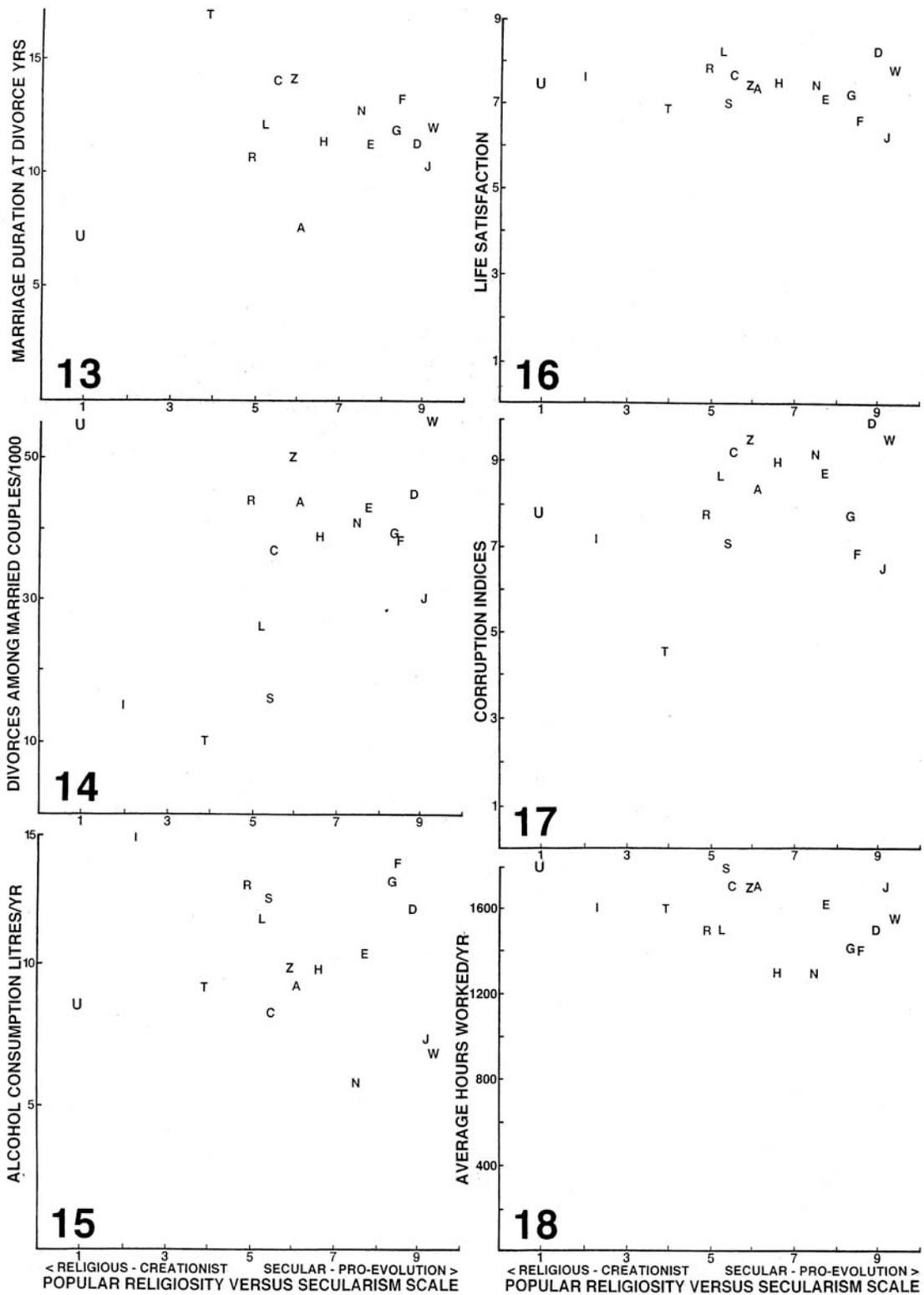
The marriage rate in the religious and creationist U.S. is so high that it is a strong outlier compared to the more secular countries (Fig. 12). With the U.S. included the correlation is moderate in favor of religiosity, with the U.S. excluded the correlation is not significant. The U.S. performs poorly in marriage duration and divorce, being uniquely low in the former and edged out in the latter only by highly secular Sweden (Figs 13, 14). With the U.S. included the correlations are not significant. With the U.S. excluded the correlation for marriage duration is moderate in favor of more religious democracies, for divorces this correlation is strong; but these results may be skewed by restrictive divorce laws in some of the more religious examples.

De Tocqueville (1835) observed that alcohol consumption rates were extraordinarily high in the new American nation, inspiring the Prohibition Movement which after backfiring led to a new wave of excessive consumption well into the post World War II era (Gately, 2008). Currently the theistic and creationist U.S. has fairly low levels of alcohol consumption, but the next most religious nation Ireland has very high levels of consumption, while some of the most secular examples are below the U.S. level (Fig. 15). With the U.S. included the correlation is insignificant, with it excluded the correlation very marginally favors secularism.

The U.S. is typical in life satisfaction, as is somewhat less religious Ireland, and the factor is both very high and very low in the most secular examples (Fig. 16). The correlation is insignificant with the U.S. included and without. Although the sample is too small for inclusion in the SSS, what is available suggests the U.S. has an unusually high rate of mental illness (Bijl et al., 2003).

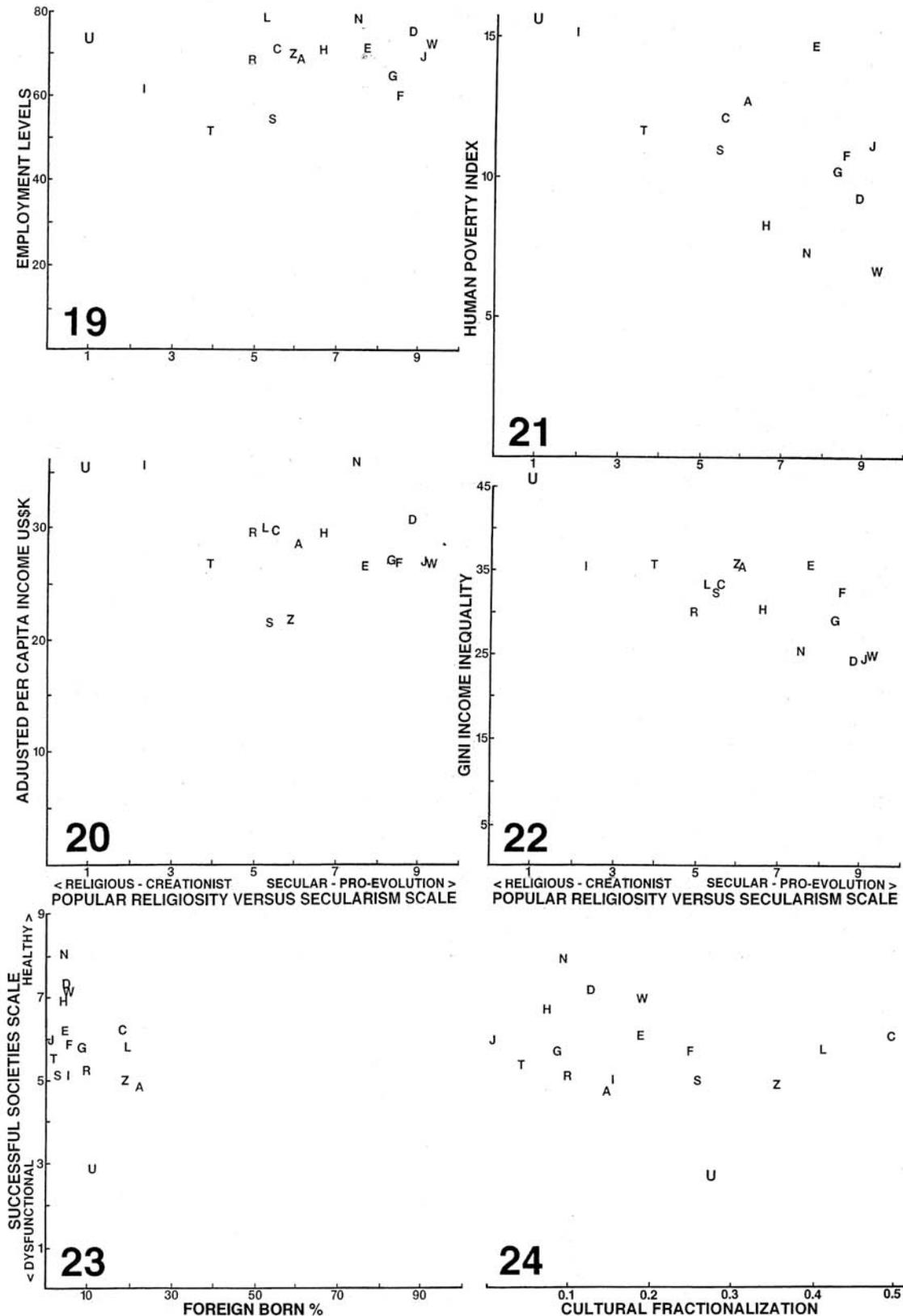
The level of corruption is fairly typical in the U.S. as well as Ireland, is very high in less theistic Italy, and is both high and very low in the least theistic democracies (Fig. 17). Regardless of whether the correlations include the U.S. the trend marginally favors secularism.

Figures 13-18. See text.



The Successful Societies Scale

Figures 19-24. See text.



Turning to economic conditions, the theistic U.S. enjoys a very high per capita GNP, matched by weakly secular Ireland and more strongly secular Norway (in part due to oil revenues), none of the highly secular democracies is especially low (Fig. 20). With the U.S. included the correlation is moderate in favor of religiosity, without the U.S. it is not significant. There is a robust progressive relationship between income inequality and the PRVSS with the religious and creationist U.S. at the high end, and the most secular democracies at the other (Fig. 22). The correlation is very strong without the U.S., it is even stronger with the U.S. included. This result verifies, with a broader measure of popular religiosity, the similar result in Norris and Inglehart (2004). In line with the high income disparity, the U.S. has an unusually large impoverished cohort, almost matched by Ireland and England, the latter being an outlier among the secular nations (Fig. 21). Otherwise there is a progressive trend with the most secular democracies having the fewest in poverty. The correlation strongly favors secularism with the U.S. included and without. The U.S. performs well in employment, as do a number of more secular democracies (Fig. 19). The worst performance is seen in moderately secular Italy and Spain. The correlation is not significant when the U.S. is included, it is moderately significant in favor of secularism when the U.S. is excluded. American's work more hours than other 1st worlders (Fig. 18), the correlation in favor of secularism is moderate with the U.S. included, and insignificant with the U.S. not included. The U.S. is much more wasteful in exploiting the resource base than its more secular counterparts, in part because American industry uses far more energy to produce a given unit of goods. The correlation is marginally in favor of secularism with the U.S. included, and is insignificant with the U.S. removed.

Of the 25 socioeconomic and environmental indicators the most theistic and pro-creationist western nation, the U.S. scores the worst in 14 and by a very large margin in 8, very poorly in 2, average in 4, well or very in 4, and the best in 1. Specifically, the U.S., scores the most dysfunctional in homicide, incarceration, juvenile mortality, gonorrhea and syphilis infections, abortions, adolescent pregnancies, marriage duration, income disparity, poverty, work hours, and resource exploitation base. The level of relative and absolute societal pathology in the U.S. is often so severe that it is repeatedly an outlier that strongly reinforces the correlation between high levels of poor societal conditions and popular religiosity.

Because the U.S. performs so poorly in so many respects, its cumulative score on the SSS is a uniquely low 2.9 (Fig. 1), placing it as an outlier so dysfunctional relative to the other advanced democracies that some researchers have described it as "sick" (Sapolsky, 2005; Wilkinson, 2005). Note that the U.S. scores so poorly even though it scores well in factors that were included even though their ability to establish dysfunction is dubious, such as fertility and marriage. Most countries sampled are in a fairly narrow middle zone from about 5 to over 6. The top scoring nations are the three Scandinavian countries sampled between 7 and 8, with Norway at the latter value, and Holland a little lower than these three. That none of the nations scores near to a perfect 10 on the cumulative SSS affirms that none are close to being ideal utopias. When the U.S. is included all specific indicators of religiosity and secularism show strong to very strong correlations when compared with the SSS, with higher levels of secularism associated with superior overall socioeconomic conditions (Figs. 25-31). With the U.S. outlier removed the correlations are moderate to good, with the exception that the Bible literalism correlation is no longer significant, a reflection of the consistent lack of significant conservative theism in the secular democracies. Higher levels of acceptance of nontheism and evolution are associated with superior social conditions. There is little difference in the results comparing general belief in an after life versus heaven and hell (partly contra Jensen, 2006).

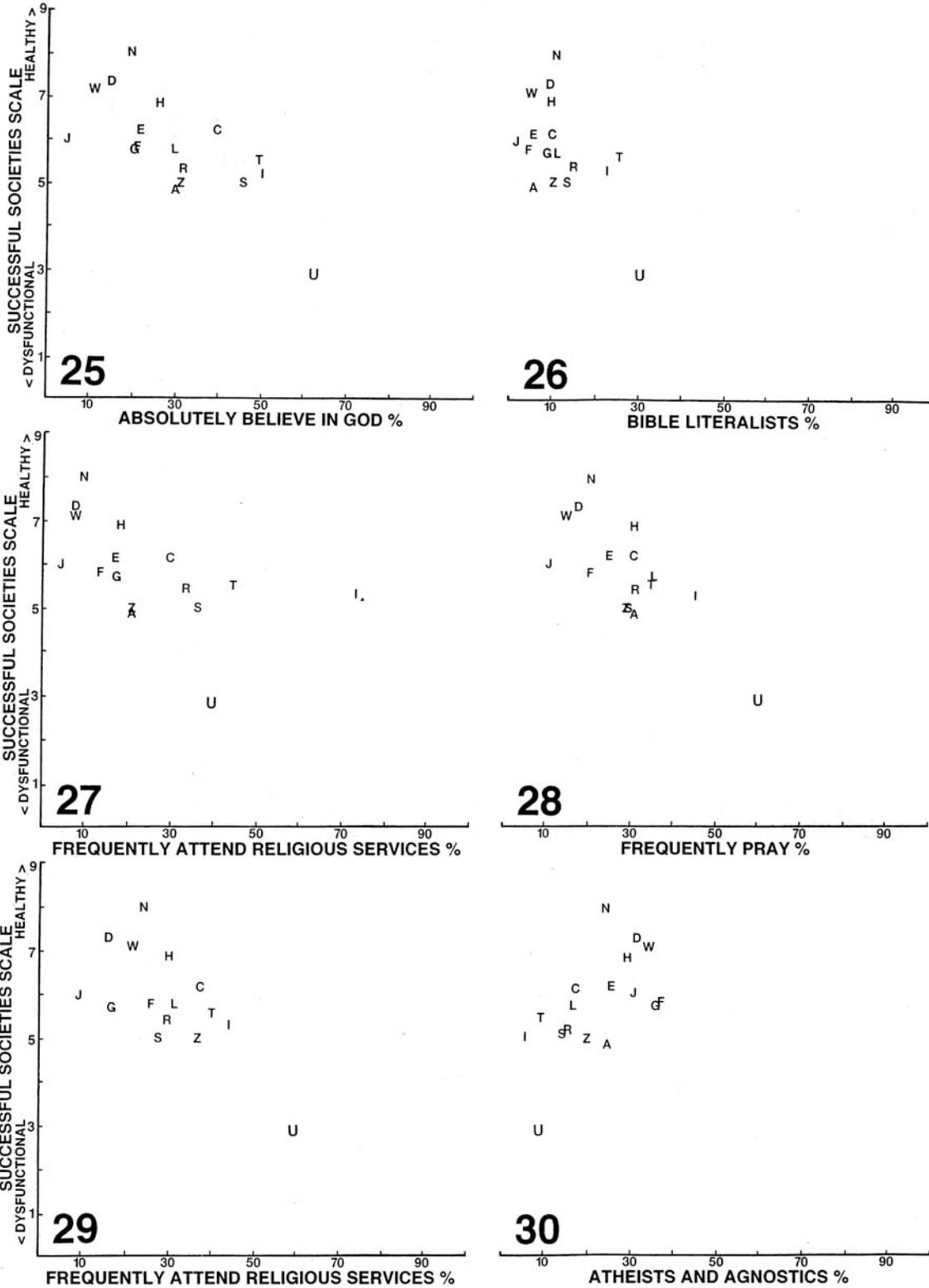
The very strongest and most progressive correlation is absolute belief in God with the religious U.S. at the dysfunctional end of the SSS, and only highly secular democracies at the other. The most comprehensive single correlation in this study, the comparison of the cumulative PRVSS and SSS scores, produces a very strong correlation of ~ 0.7 , about half of the variation in PRVSS scores can be explained by the variation in the SSS scores and vice versa. With the U.S. outlier excluded the correlation is still strong, with about a quarter of the variation of one axis explained by the other.

Potential causal factors

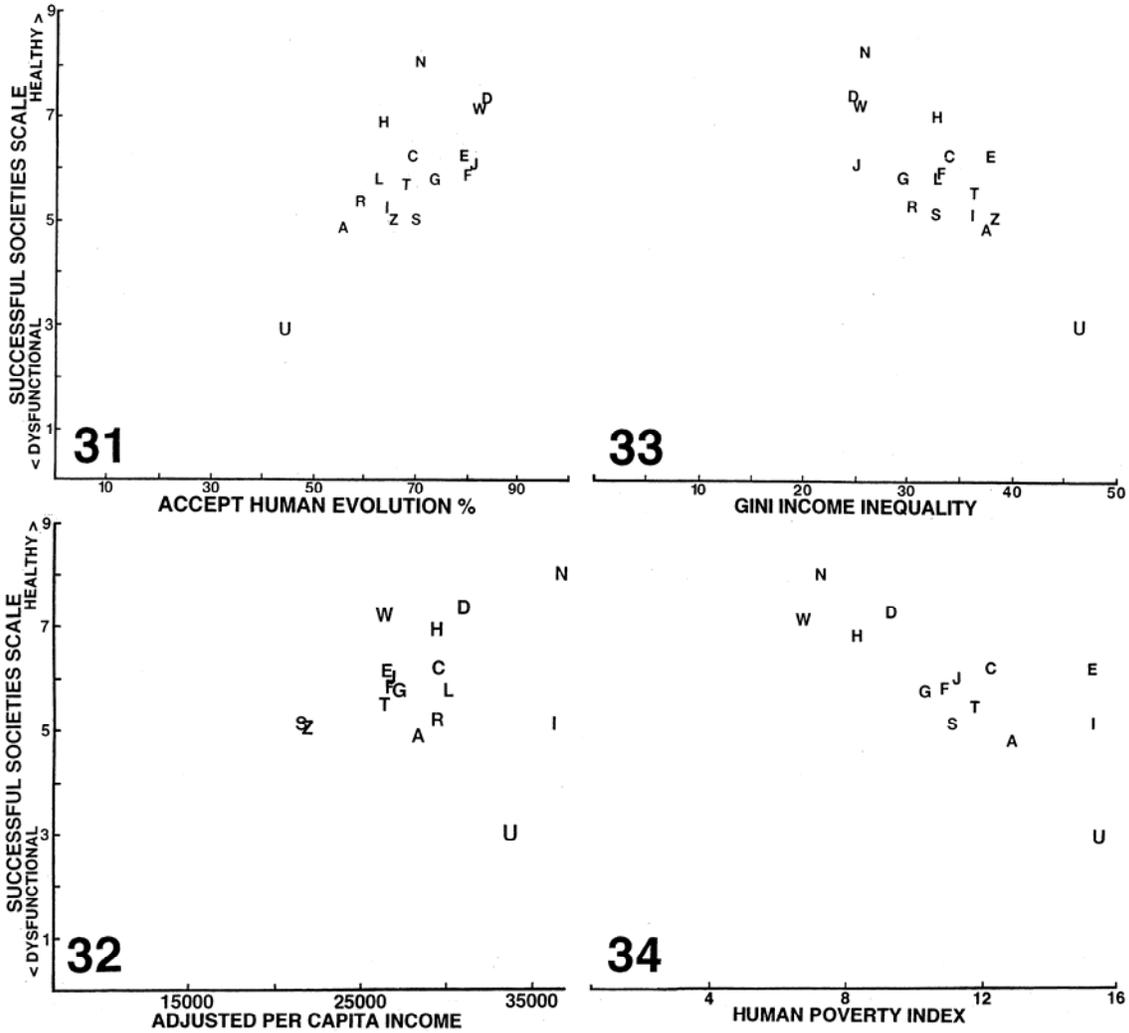
Turning to potential causal factors, we will start with the noneconomic category. The 10% of the U.S. population that is foreign born is too small to dramatically alter its socioeconomic characteristics, and a number of the moderately secular nations exhibit a much higher proportion of aliens (Fig. 23). The cultural fractionalization of the U.S. is somewhat high, but is likewise exceeded in some moderately secular democracies (Fig. 24). Insular Japan is at the other extreme in both attributes. The correlations between these population factors and societal conditions are either not significant or moderate, exclusion of the U.S. from the cultural fractionalization data set weakens the relationship. Nor is there a meaningful relationship of either factor with the PRVSS. Concerning economic factors with causal potential the relationship between gross per capita income and the SSS is not consistent (Fig. 32). The correlations between income disparity and poverty relative to the SSS are progressive and very strong, with the inequitable U.S. at the dysfunctional end of the SSS, and only the most egalitarian democracies at the other (Figs. 33, 34). About half of the variation between these factors is attributable to the other. Removing the outlier U.S. from the statistical processing leaves the two correlations somewhat less strong.

The Successful Societies Scale

Figures 25-30. See text.



Figures 31-34. See text.



Discussion

Testing the two socioeconomic hypotheses

Because highly secular democracies are significantly and regularly outperforming the more theistic ones, the moral-creator socioeconomic hypothesis is rejected in favor of the secular-democratic socioeconomic hypothesis (in agreement with Paul [2005] and Zuckerman [2006], as well as the results of Marks, Abdallah, Sims, and Thompson [2006] and Norris and Inglehart [2004]). A study to the contrary has yet to emerge despite the widespread promulgation of the moral-creator socioeconomic hypothesis. The next task is to uncover the factors that are producing these results.

Explaining the observed pattern

Because it performs so poorly relative to more secure democracies, the status of the U.S. as an advanced 1st world nation is marginal and may even be at risk; the World Economic Forum recently downgraded the U.S. from its long standing first place status in global economic competitiveness, ranking some other democracies as more competitive (WEF, 2007). The societal and economic failings of the U.S. are all the more remarkable and difficult to explain because no major nation has such extensive financial and physical resources with which to overcome its internal defects. With ~5% of the world's population the U.S. possesses a quarter of the global financial assets and uses a similar portion of the planet's energy production; but this means that America is the least efficient advanced nation in terms of converting wealth and assets into social health (Marks et al., 2006; Rosnick and Weisbrot, 2006; Sapolsky, 2005). This leads to the question of whether mass immigration, population diversity, religiosity or any of the above best explains the problem.

The results of this analysis demonstrate that the correlations between immigration and population diversity on the one hand and socioeconomic circumstances on the other are too weak to be primary causes of the divergence in 1st world conditions (Beeghley, 2003; Neapolitan, 1997). America's frontier heritage cannot be a critical contributor to its exceptional violence and related issues because markedly less dysfunctional Canada and Australia also have large frontiers (Beeghley, 2003; Neapolitan, 1997). Nor does a violence and sex saturated media offer a convincing causal explanation because the American popular culture has spread across the 1st world (Beeghley, 2003; Neapolitan, 1997; Paul, 2009; Tomlinson, 1991). America's heritage of mass racial slavery and Jim Crow apartheid may play a role in the nation's current ills, but this issue is tied to popular religion because a conservative Protestant culture accepted the discrimination and chronic violence required to suppress human rights (Blackman, 2008; Budiansky, 2008; Dray, 2003; Jaspin, 2007).

A widely accepted explanation for America's exceptional religiosity, its constitutional based religious free market, has also been discredited (McCleary and Barro, 2006; Norris and Inglehart, 2004; Paul and Zuckerman, 2007; Voas, Olson, and Crockett, 2002). Although there is a broad trend in which higher income correlates with lower levels of religiosity and creationism in 3rd and 2nd world nations compared to those of the 1st world (Pew, 2002), the absence of such a correlation among 1st world countries implies that other socioeconomic factors are operative in the developed world.

The strong correlations between the SSS and income disparity, poverty, religiosity, and acceptance of evolution in the prosperous democracies indicate that these elements are closely linked to one another in some form of cause and effect, so the impact that popular religiosity and secularism have upon socioeconomic conditions and vice-versa are the focus of the rest of the discussion. Questions include whether popular religiosity degrades socioeconomic conditions, or good socioeconomic conditions degrade mass theism, or both, and why is the prosociality apparently linked to popular religiosity not producing better results? Much of the solution of this question has been presented in Norris and Inglehart (2004), and comparably extensive analysis would be redundant. So the discussion in the subsequent three paragraphs combines the results of this study with a review of the large body of research that describes the political, social and economic policy differences between the U.S. and other prosperous democracies that appear to be driving their respective national conditions, with emphasis on the seminal socioeconomic security hypothesis of popular religiosity detailed by Norris and Inglehart (2004), plus the following works (American Academy of Pediatrics, 1998, 2000; Anderson, Frogner, Johns, and Reinhardt, 2006; Banks, Marmot, and Smith, 2006; Beeghley,

2003; Finer, 2007; Himmelstein, Warren, Thorne, and Wollhandler, 2005; Kaiser, 2008; Kawachi and Kennedy, 2002; Lane, 1997; Marmot, 2004; Messner and Rosenfeld, 2001; Neapolitan, 1997; Norris and Inglehart, 2004; Panchaud et al., 2000; Paul, 2009, in press; Paul and Zuckerman, 2007; Phillips, 2006; Pratt and Godsey, 2003; Reid, 2004; Rosenbaum, 2009; Sapolsky, 2005; Schoen et al., 2005; Singh and Darroch, 2000; Trenholm, 2007; Verwei, Ester, and Naata, 1997; Wellings, 2006; Wilkinson, 2005, 2009; Winkleby, Cubbin, and Ahn, 2006; Zimring and Hawkins, 1999; Zuckerman, 2006, 2008).

Among the prosperous democracies all but the U.S. have adopted most or all of a set of pragmatic progressive governmental policies that have elevated these nation's societal efficiency, success and security while reducing personal levels of stress and anxiety. These include reduced socioeconomic disparity and competition via targeted tax and welfare strategies, handgun control, anti-corporal punishment and anti-bullying policies, protection for women in abusive relationships, intensive sex education that emphasizes condom use, rehabilitative incarceration, increased leisure time that can be dedicated to family needs, and perhaps most importantly job security and universal health care that make it difficult for ordinary citizens to suffer catastrophic financial failure. Social ills are correspondingly suppressed. As a member of the 1st world the U.S. is an anomalous outlier not only in its religiosity, but in social, economic and political policies as well. Provided with comparatively low levels of government support and protection in favor of less restrained capitalism, members of the middle class are at serious risk of financial and personal ruin if they lose their job or private health insurance; around a million go bankrupt in a year, about half due in part to often overwhelming medical bills. The need to acquire wealth as a protective buffer encourages an intense competitive race to the top, which contributes to income inequality. The latter leaves a large cohort mired in poverty. Levels of societal pathology are correspondingly high. The evidence indicates that the modulation of capitalism via progressive policies is producing superior overall national circumstances compared to the more laissez-faire capitalism favored in the U.S.

The relationship of religion to these patterns appears to be both passive and active. Starting with the passive, the middle class majorities of western Europe, Canada, Austro-Zealand and Japan apparently feel sufficiently secure in their lives that increasingly few citizens feel a need to seek the aid and protection of a supernatural creator, resulting in dramatic drops in religious belief and activity (Norris and Inglehart, 2004; Paul and Zuckerman, 2007; Zuckerman, 2008). With the implosion of the general religious belief, few subscribe to a fundamentalist world-view that provides the base for creationist opinion,. That there are no major 1st world exceptions to this pattern, and that a significant religious revival has yet to occur in a secular democracy, indicate that the socioeconomic security process of democratic secularization is highly effective even though it is an accidental side effect of progressive economic policies. The universality of the effect is further supported by Asian Japan experiencing the same basic secularization process as the EuroChristian heritage secular democracies. America's high-risk circumstances, the strong variation in economic circumstances, and chronic competitiveness help elevate rates of social pathology, and strongly contribute to high levels of personal stress and anxiety. The majority of Americans are left feeling sufficiently insecure that they perceive a need to seek the aid and protection of a supernatural creator, boosting levels of religious opinion and participation. The nation's good ratings in life satisfaction and happiness is compatible with a large segment of the population using religion to psychologically compensate for high levels of apprehension; America's apparently high level mental illness (Bijl, 2003) may be in accord with this suggestion. The

ultimate expression of this social phenomenon is the large minority who adhere to the evangelical Prosperity Christianity and Rapture cultures whose Bible-based world-view favors belief in the Genesis creation story. The results of this study are therefore compatible with and support the socioeconomic security hypothesis of democratic secularization.

Turning to the active role played by religion, politically powerful elements of the American religious right have preferred to focus on promoting a series of ideology based and socioeconomically problematic wedge issues rather than addressing social ills (Philips, 2006; Weisman and Cooperman, 2006). These conservative forces have favored the deregulated, reduced taxation especially for the wealthy, free market economy that raises personal risk; as a result the religious right that is the main opponent to Darwinian science has become a leading proponent of what has been labeled socioeconomic Darwinism. As an adjunct to privatization, religious conservatives are promoting the displacement of government services with faith-based charities that increase outreach into the general population, even though data showing that faith-based charities are more effective than government alternatives has not been produced (Johnson, Tompkins, and Webb, 2002), and charities lack the enormous financial resources and infrastructure needed to provide the comprehensive assistance that the government can offer (contra Brooks, 2006). America's high levels of adult and especially juvenile mortality are probably partly due to the lack of the comprehensive medical system that is opposed by most elements of the creationist right (Anderson et al., 2006; Banks et al., 2006; Kawachi and Kennedy, 2002; Schoen et al., 2005; Winkleby et al., 2006). The results of Jensen (2006) support the hypothesis that populations that follow a conservative "malevolent" theology centered on battling satanic forces are prone towards higher levels of homicide than are followers of less fear based, "benevolent" doctrines. Psychological experimentation suggests that exposure to scriptural violence can significantly increase the propensity towards aggressive actions, especially among believers (Bushman, Ridge, Das, Key, and Busanthe, 2007). Bible based juvenile corporal punishment (Dobson 2007a,b) may contribute to a tendency towards violence in adult years (American Academy of Pediatrics 1998, 2000). The claim that the Biblical God is the best if not sole source of morality is dubious because the testaments justify the use of extreme personal and mass violence to address various problems, and can produce "honor cultures" that demand extreme retribution for even trivial slights (Dray, 2003; Ehrman, 2008; Ellison, Burr, and McCall, 2003; Grasmick, Davenport, Chamblin, and Bursick, 1992; Messner and Zevenbergen, 2005; Neapolitan, 1997; Niditch, 1993; Nisbett and Cohen, 1999). The popularly held concept that any supreme power is benign is similarly questionable considering the natural suffering and death of ~50 billion children due to "acts of God" (Paul, 2008, 2009b). Gun control is opposed by many religious traditionalists. Hood, Bernard, Hunsberger, and Gorsuch (1986) and Scheepers, Gijsberts, and Hello (2002) find that higher levels of conservative religious practice are associated with elevated levels of racial and ethnic prejudice. The patriarchal nature of traditional evangelical marriage may contribute to high levels of violence and instability (Bennett, 2007), and conservative religious values do not appear to suppress uses of pornography to levels as low as those with more liberal views (Anonymous, 2006; Edelman, 2009). Extensive research including this study indicates that the Biblically inspired abstinence only sex education programs are not as efficacious in reducing adverse consequences of sexual activity to the degree seen in better educated Euroyouth (Finer, 2007; Panchaud, et al., 2000; Paul 2009; Rosenbaum, 2009; Singh and Darroch, 2000; Trenholm, 2007; Wellings et al., 2006). America's high level of social ills vis-à-vis other prosperous democracies are to a large extent due to the pathologies being elevated within those regions and populations of the U.S. that exhibit high levels of theoconservative opinion and

practice (Aral and Holmes, 1996; Barna, 2004; Beeghley, 2003; Doyle, 2000, 2002; Edelman, 2009; Paul, 2005).

The empirical patterns and theoretical analysis indicate that the relationship between popular religiosity and societal circumstances is both passive and active; a positive socioeconomic environment indirectly negatively influences the level of mass theism and creationism, meanwhile high levels of conservative theism directly contribute to the poor societal circumstances and faith-based charitable work that encourage popular religiosity and creationist opinion. Of these two effects the first appears dominant; the secularization process has to date not been reversed by a significant religious revival in terms of proportional numbers (Bruce, 2002; Norris and Inglehart, 2004; Paul and Zuckerman, 2007). Although liberal and moderate, pro-evolution churches tend to support progressive social policies and values that converge with those of secularists (Weisman and Cooperman, 2006), it is probably not possible for a socially healthy nation to be highly religious in a nonconservative, science friendly manner because improving social conditions and economic security degrades religiosity from liberal to conservative. That socioeconomic processes prevent national societies with high levels of creator worship from being successful explains the lack of an example of such a country.

Heaven and hell, spiritual capital, religious prosociality, social clubs and anti-atheist bigotry.

Because the results of this study demonstrate that developed societies that emphasize charity and religion are not able to equal or outperform those that place priority secular government programs, it follows that the concept of “spiritual capital,” and the hypothesis that high levels of belief in an after life (especially hell) encourage superior economic performance are correspondingly problematic (contra Barro and McLeary, 2003; Barro, 2004; Fogel, 2000; Malloch, 2003; Templeton Foundation, 2004); all the more so because many poorly performing 2nd and 3rd world nations exhibit high levels of belief in life after death while all but one of the most prosperous nations are strongly secularized (Pew, 2002).

The success of strongly secular 1st world societies is sociologically intriguing because, as Shermer (2006) and Bloom (2008) note, the phenomenon appears to contradict the proposal that individuals benefit from participating in religious activities (Brooks 2006; Inzlicht, McGergor, Hirsh, and Nash, 2009; McCullough and Willoughby, 2009; Norenzayan and Shariff, 2008; Norris and Inglehart 2004; Powell, Shahabi, and Thoresen, 2003; Putman, 2000), although this effect is not consistent (Blumenthal et al., 2007; Keister, 2008; Paul, 2008; Powell et al., 2003; see prior observation on the high level of social pathology in theoconservative Americans), and Chida, Steptoe, and Powell (2009) find that the benefits correlate with participation in organized religious activity rather than belief and are largely limited to women. Actually, the socioeconomic security hypothesis offers an explanation for why the salutary effects of prosociality, as well as the psychological and community support, offered by religion is more effective in highly religious nations than in more secular countries. The lack of theistic membership appears to be detrimental in a faith-based culture because religious institutions provide socioeconomic benefits not available outside the association (Bloom, 2008; Paul and Zuckerman, 2007; Shermer, 2006; Zuckerman, 2008). Individuals frequently profit from being members of one or more connected groups (CASA, 2003; Eisenberg, Olson, Neumark-Stainer, Story, and Bearinger, 2004; McNeely et al., 2002; Putman, 2000; Sampson, Raudenbush, and Earls, 1997); the last two citations show that salutary group activities can be as simple as regular family dinners. Such social “clubs” can be private or governmental, religious or secular – in other words Putman’s “social capital” is more

efficacious than “spiritual capital.” This is particularly true in a nation like the United States where government support systems are relatively weak in favor of private alternatives; belonging to religious “clubs” can provide benefits not available to those who are unable (often due to cost) or unwilling to join secular private cooperatives. In the secular democracies people belong to critical support groups, including the health care club, simply by being citizens, boosting overall general societal health to higher levels. Thus theistic Americans tend to be happier than nonreligious citizens, but the populations of secular western nations are about as happy as and healthier than the citizens of more religious America. The means by which citizens of irreligious democracies are coping without the aid of faith-based clubs has received little research attention.

The high level of ill will held and discrimination practiced against nontheists by most Americans (Edgell et al., 2006; Gallup, 2008) is another potential explanatory factor for their relatively poor status vis-à-vis more religious citizens. If this (also) under researched possibility is correct, then the Christian majority is contributing to the societal difficulties associated with nontheism that Christian advocates offer as evidence of the social inferiority of nontheism. In more secular advanced nations nonbelievers presumably flourish because they are much more numerous, and are more in control of the cultural and political power structures, to the degree that they do not suffer from serious intolerance.

The origin and nature of popular religion

Past attempts to explain the origin of religion have tended to presume that humans are strongly predisposed to exhibit a high level of popular religiosity in a wide variety socioeconomic circumstances (as per Bloom, 2007; Boyer, 2008; Dennett, 2006). It would have been difficult to challenge this view as recently as a century ago when popular religiosity was still nearly universal because nearly all persons lived in sufficiently adverse socioeconomic conditions (Barrett et al., 2001; Paul and Zuckerman, 2007). Now that the experience of the prosperous democracies has demonstrated the nonuniversality of religion through its extent, historical rapidity, voluntary nature, and socioeconomic foundations, the key information that is not available from the more universal level of creator belief characteristic of less developed societies is on hand for examining the genetic or neurological basis, origin and historical popularity of popular religion. This is not a broad review of past work on the subject, the section takes the opportunity to focus on the implications that the results of this study have upon these matters.

If deep religious devotion is either genetically programmed to the same extent as language or materialism, or the result of a supernatural connection with an intelligent creator entity, then religious belief and practice should remain similarly universal in all populations regardless of the environmental conditions they dwell in, unless an atheistic authoritarian government suppresses mass religiosity. Instead, the ease and speed with which hundreds of millions of westerners have voluntarily abandoned dedicated piety in recent decades indicates that religiosity is a standard, albeit not unanimous, psychological response to sufficiently dysfunctional environmental circumstances as outlined above, and is superficial enough to be readily abandoned when conditions improve to the required degree. This sociological based conclusion is in accord with, and potentially supported by, the similar inference arrived at by Inzlicht et al. (2009) based on examination of neurological activity associated with religiosity. Equally important to understanding the origin of opinion on religious matters is that popular democratic nonreligiosity is similarly casual and cursory in most nontheists (as observed by Zuckerman, 2008).

In view of the reduced levels of religiosity consistently extant in populations that enjoy secure middle class lives, it can be postulated that if socioeconomic conditions had been similarly benign since humans first appeared it is unlikely that religion would have developed to nearly the degree seen in actual human history, and atheism would have been much more widespread and possibly ubiquitous since the beginning. Materialism and language in contrast would still be omnipresent. Ergo, strong religiosity has all the signs of being a natural invention of human minds in response to a defective habitat, and is neither supernatural, nor genetically preprogrammed to the same extent as are more deeply set language and material desire. Because spirituality is a relatively optional attribute more comparable to writing which is not fundamental to the human condition, it is not consistently more difficult for humans to be spiritual than nontheistic (partly contra Boyer, 2008), under certain environmental conditions the opposite can be true.

It follows that the mass loss of 1st world theism contradicts a number of potential primary causes of popular religious devotion, including fear of death and hell complemented by a pleasant eternal existence, fear of societal chaos if the society is not sufficiently pious, desire for an uberfather figure or a universal companion, an explanation for the meaning of life or the existence of the universe, a social primate's desire for community and need for practical social support, a means to achieve political power, a "God Module" or some expression of brain structure and function that creates a deep set psychological need for spirituality, the ecstasy often associated with religious belief and activity, the excessive teleological tendency to perceive patterns where they do not exist, retention of childhood patterns of gullible thinking into adulthood, "God gene/s" in which religious belief imparts a survival or reproductive benefit to individuals or related groups, and "memes" that spread religious ideas like viral infections even if religious devotion is maladaptive to a given individual or group (Bloom, 2007; Boyer, 2008; Dawkins, 2006; Dennett, 2006; Fincher and Thornhill, 2008; Inzlicht et al., 2009; Kelemen and Rosset, 2009). Most French, Swedes and Japanese have spontaneously abandoned religion even though they face the same lethal fate as faithful Americans. Likewise, if need for social community is compelling then western Europeans, Australians should continue to flock to the churches. Political ambitions are not crucial because public expressions of deep piety have become an electoral detriment in the strongly secular democracies. Nor is the highly skeptical French population genetically or neurologically distinct from highly religious ones, so factors that potentially involve selective forces, including excessive pattern recognition and gullibility, are not predominant. There is no reason to think that the brains of the French and Canadians are more or less resistant to infectious memes. To the extent that any of the above factors are operative, they apparently do not fully function outside the context of the dysfunctional socioeconomic conditions that favor mass religiosity.

An outline scenario of the origin, evolution and decline of popular religion compatible with the results of this study is as follows. Endowed by the evolution of high level, flexible intelligence with imaginative minds influenced by dreams and perception altering drugs that appeared to provide a connection to alternative worlds, early humans were poorly informed hunter gatherers living impoverished and dangerous lives. These conditions were so ideal for the invention of supernatural entities that could be petitioned for aid and protection that it is difficult to construct a scenario in which primitive cultures would be rationalistic atheists. A genetic propensity driven by selective forces may not be necessary for the appearance of popular religion in this scenario. If genes are involved then they are strongly expressed only when the human environment is suitable, unlike the much more prevalent genetic programming for language and materialism. The lives of the great majority remained impoverished and

insecure with the onset of agriculture and then civilization, the latter was accompanied and may have been partly driven by the appearance of priestly castes who invented organized religion as a means of maintaining sociopolitical control. In this dysfunctional context the promise of benign afterlife to all believers may have given Christianity and Islam a competitive advantage that led them to dominate half of the global population (Barrett et al., 2001). Dysfunctional socioeconomic conditions continued to favor mass religiosity, until the appearance of the most secure and prosperous middle class 1st world conditions in history allowed and encouraged the largest scale spontaneous secularization in history. The ancient evolution of a relatively weak and consequently inconsistent hold by religion on the human psyche allowed the modern instability of popular theism that made this study possible.

Conclusion

From a research perspective it is fortunate that a socioeconomically dysfunctional and unusually religious developed nation like the U.S. exists; if one did not then it would probably be incorrectly concluded that a simple rise in prosperity to 1st world standards results in steep declines in mass religiosity in favor of secular modernity -- the actual situation is more subtle. It is also scientifically fortuitous that the U.S. is an anomalous outlier not only in its elevated religiosity, but in its elevated socioeconomic defects. If religious America were no more dysfunctional than the more secular prosperous democracies, then a viable explanation for the divergence in popular faith and nonfaith would be difficult to discern.

This study's uniquely broad based comparison of socioeconomic conditions in the most prosperous democracies confirms that they vary widely among these nations, and that the U.S. is the most dysfunctional prosperous democracy overall. Possible causes for this pattern, including the diversity of the population, immigration, a frontier heritage, pathological media, and popular religiosity versus secularism are examined. Of these factors the U.S. is exceptional only in its high level of religiosity, which strongly statistically correlates with adverse and insecure societal and economic conditions in the developed democracies. For all their flaws, strongly secular advanced democracies display superior cumulative internal conditions, with some nations in western Europe enjoying the best overall circumstances yet seen. These results contradict the moral-creator socioeconomic hypothesis, including the thesis widely held in America that a democracy can combine libertarian economics with high levels of popular religion and charity to achieve socioeconomic success. Conservative religious ideology is a probable contributing causal factor of societal dysfunction, in part because it opposes the modulation of free market capitalism with extensive government based assistance, as well as the pragmatic social policies, that have proven more effective at creating the exceptionally secure, equable and benevolent overall societal and economic conditions that have unintentionally helped cause the least theistic prosperous democracies yet seen to come into existence. Both the socioeconomic security hypothesis, and the secular-democratic socioeconomic hypothesis popular in many secular democracies, are correspondingly supported. Refuting these conclusions continues to necessitate the presentation of the comprehensive study showing that secular democracies do not exhibit overall socioeconomic conditions as good or better than those of more religious nations as required by Paul in 2005.

Aside from the role it is playing in the culture war between traditionalist faith and secular modernity, the extensive, rapid, and voluntary loss of popular religious devotion due to the advent of suitably benevolent 1st world socioeconomic conditions provides critical information that is needed to better understand some of the basic questions surrounding the

psychology and evolution of popular religious devotion. The latter is not as universal as other human attributes, consistently being far more easily abandoned within the context of a secure environment than are materialism and language whose neurological foundations are apparently much more strongly genetically preprogrammed. It follows that all hypotheses that religious belief and practice are the normal, deeply set human mental state that is highly resistant to conversion to nontheism are unverified. Instead popular religion is in the main a superficial psychological response that seeks the daily aid and protection of supernatural entities to alleviate the stress and anxiety created by a sufficiently dysfunctional social and especially economic environment. Other potential causes of large-scale religiosity, including fear of death and genetics, are at best secondary factors that only operate effectively when the socioeconomic situation is defective to the required degree. Popular nontheism also is a predominantly superficial psychological response to the socioeconomic environment, in its case to a sufficiently secure one. The greater the displacement of religious sensibilities by more secular alternatives the greater is the corresponding suppression of popular creationist opinion that is dependent upon high levels of belief in a creator.

Limited to explaining long-term variations and trends in mass opinion concerning serious religious belief and practice versus secularism, the socioeconomic security hypothesis is not a universal theory. It does not necessarily deal with casual supernaturalism, the competition between sects, the suppression or promotion of non/theistic opinions via government coercion, or the retention of religious devotion in a significant minority of persons who benefit from secure, prosperous personal circumstances. These problems, like all aspects of the religion/secularism puzzle, require further research. Nor is known, due to the lack of examples to provide needed data, whether western societies that have evolved high levels of nontheism in response to secure prosperity will fully return to traditional levels of theism if economic conditions undergo a long term decline. If prosperous nations continue to be so then religious sentiments should fare poorly, while the latter is predicted to remain successful in less developed countries.

Now that a comprehensive cross-national comparison of socioeconomic conditions has been compiled, the Successful Societies Scale can be used and improved to examine other major societal questions.

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Appendix A. Cross-national data sets and scores, part 1

	Popular Religiosity Versus Secularism Scale	Absolutely believe in God	Bible literalists	Religious services	Prayer
Source>		ISSP	ISSP	ISSP	ISSP
	score	% score	% score	% score	% score
W Sweden	9.3	12 8.6	5 9.0	7 9.5	14 9.7
J Japan	9.2	4 10	2 10	4 10	11 6.9
D Denmark	8.8	14 8.4	8 8.0	7 9.5	17 9.1
F France	8.5	20 7.3	4 9.2	13 8.6	21 8.3
G Germany	8.3	19 7.4	8 7.7	17 8.1	13 10
E Great Britain	7.6	23 6.9	5 8.9	17 8.0	24 7.6
N Norway	7.5	18 7.6	11 7.0	9 9.6	20 8.5
H Holland	6.6	26 6.2	9 7.4	18 7.9	30 6.4
A Australia	6.1	29 5.8	6 8.5	21 7.4	31 6.1
Z New Zealand	5.9	31 5.4	10 7.1	21 7.5	28 6.8
C Canada	5.5	39 4.1	10 7.3	29 6.4	30 6.4
S Spain	5.4	46 2.9	13 5.9	36 6.7	29 6.5
L Switzerland	5.2	28 5.9	11 6.9	- -	35 5.2
R Austria	4.9	32 5.2	14 5.6	33 5.8	31 6.1
T Italy	3.9	48 2.5	26 1.6	44 6.3	34 5.5
I Ireland	2.3	50 2.2	23 2.7	73 0	45 3.1
U United States	0.9	63 0	30 0	39 4.9	60 0

Notes: When two vertical columns are present left is raw data, right are 0-10 scores. Data sources listed in second horizontal rows; ISSP = International Social Survey Program.

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Appendix B. Cross-national data sets and scores, part 2

	Absolutely believe in after life	Absolutely believe in heaven	Absolutely believe in hell	Agnostics and atheists	Acceptance of evolution
Source>	ISSP	ISSP	ISSP	ISSP	ISSP/ Eurobarometer
	% score	%	%	% score	% score
W	22 9.2	12	7	35 9.1	82 9.7
J	9 10	7	6	31 8.3	81 9.5
D	16 8.6	14	8	31 7.8	83 10
F	26 6.7	14	10	37 10	80 9.2
G	17 8.4	15	9	36 9.6	73 7.4
E	25 6.8	23	14	25 6.1	78 8.8
N	24 7.0	18	10	24 5.7	70 6.7
H	31 5.6	23	13	29 7.5	63 4.9
A	- -	-	-	24 5.7	55 2.8
Z	37 4.4	33	23	20 4.3	66 5.6
C	38 4.3	36	26	17 3.5	68 6.2
S	28 6.3	25	18	16 3.0	69 6.4
L	32 5.3	22	14	16 3.2	62 4.6
R	30 5.8	19	13	15 2.8	57 3.3
T	41 3.6	34	30	9 1.9	67 5.9
I	44 2.9	50	27	6 0	64 5.1
U	59 0	67	55	8 1.6	44 0

Notes: When two vertical columns are present left is raw data, right are 0-10 scores. Data sources listed in second horizontal rows; ISSP = International Social Survey Program.

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Appendix C. Cross-national data sets and scores, part 3.

	Successful Societies Scale	Homicides	Incarceration	Suicide 15-24	Suicide all age	Under 5 mortality	Lifespan
Source>		Barclay and Taveres 2002	ICPS 2006	WHO 2001	WHO 2001	UN 2000	UN 2000
	Score	per score 100K	per score 100K	per score 100K	per score 100K	per score 1000	Years score
W	7.1	1.11 9.7	78 9.7	8.3 7.7	14.2 4.7	4 10	78.6 6.7
J	6.0	1.05 9.8	60 10	8.5 7.5	18.8 1.1	4 10	80.0 10
D	7.3	1.02 9.8	77 9.7	7.9 8.0	17.5 2.1	5 7.5	75.7 0
F	5.8	1.73 8.3	88 9.6	8.9 7.2	19 0.9	5 7.5	78.1 0.6
G	5.7	1.15 9.7	97 9.4	8.2 7.7	14.2 4.7	5 7.5	77.2 3.5
E	6.2	1.61 8.6	141 8.8	6.7 8.9	7.4 10	6 5.0	77.2 3.5
N	8.0	0.95 10	68 9.9	12.6 4.4	12.1 6.3	4 10	78.1 5.6
H	6.9	1.51 8.8	127 9.0	7.9 8.0	7.9 9.6	5 7.5	77.9 5.1
A	4.8	1.87 8.2	120 9.1	18.5 0	14.3 4.6	5 7.5	78.3 6.0
Z	5.0	2.5 6.6	181 8.2	15.1 2.6	15.3 3.8	6 5.0	76.9 2.8
C	6.2	1.77 8.3	107 9.3	13.7 3.6	12.3 6.2	6 5.0	79.0 7.7
S	5.0	1.12 9.7	140 8.8	5.3 9.9	8.6 9.1	6 5.0	78.0 2.4
L	5.7	1.12 9.7	81 9.7	15.3 2.4	20.2 0	5 7.5	78.7 7.0
R	5.4	1.23 9.4	108 9.3	12.9 9.3	19.2 0.8	5 7.5	77.0 3.0
T	5.6	1.50 8.8	97 9.4	5.2 10	8.2 9.4	6 5.0	78.2 5.8
I	5.3	1.42 9.0	85 9.6	15.2 2.5	11.3 7	7 2.5	76.4 1.6
U	2.9	5.56 0	724 0	11.1 5.6	11.3 7	8 0	76.7 2.3

Notes: When two vertical columns are present left is raw data, right are 0-10 scores. Data sources listed in second horizontal rows; ICPS = International Centre for Prison Studies, WHO = World Health Organization, UN = United Nations.

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Appendix D. Cross-national data sets and scores, part 4.

	Gonorrhea 15-19	Gonorrhea all age	Syphilis 15-19	Syphilis all age	Abortions 15-19	Births 15-17
Source>	Panchaud et al. 2000	Panchaud et al. 2000	Panchaud et al. 2000	Panchaud et al. 2000	Singh and Darroch 2000	Singh and Darroch 2000
	per score 100K	per score 100K	per score 100K	per score 100K	per score 1000	per score 1000
W	1.8 10	2.8 10	0.6 9.0	0.8 8.3	17.2 8.1	2.7 9.5
J	- -	- -	- -	- -	- -	1.1 10
D	5.0 9.9	3.4 9.9	0.8 8.8	0.4 9.3	14.4 10	2.2 9.7
F	7.7 9.9	8.4 9.6	- -	- -	- -	3.5 9.3
G	- -	- -	- -	- -	- -	4.4 9.0
E	77 8.7	22 8.4	0.2 9.7	0.2 9.8	18.6 7.2	14.6 5.9
N	6.7 9.9	4.0 9.9	0 10	0.1 10	18.7 7.1	4.0 9.1
H	- -	- -	- -	- -	- -	- -
A	- -	- -	- -	- -	23.8 3.6	10.6 7.1
Z	- -	- -	- -	- -	20.0 6.2	19.2 4.5
C	59 9.0	17 9	0.6 9.0	0.3 9.5	21.2 5.4	13.6 6.1
S	- -	- -	- -	- -	- -	- -
L	- -	- -	- -	- -	- -	- -
R	- -	- -	- -	- -	- -	5.8 8.5
T	- -	- -	- -	- -	- -	- -
I	- -	- -	- -	- -	- -	6.6 8.3
U	572 0	125 0	6.4 0	4.3 0	29.2 0	33.8 0

Notes: When two vertical columns are present left is raw data, right are 0-10 scores. Data sources listed in second horizontal rows.

Appendix E. Cross-national data sets and scores, part 5.

	Fertility	Marriages	Marriage duration	Divorces	Alcohol consumption	Life satisfaction
Source >	UN 2005	UN 2001	OECD 2001	Divorce Reform 2002	WHO 2004	Marks et al. 2006
	rate score	per score 1000	years score	per score 1000	litres score /year	value score
W	1.6 4.3	4.0 0	12 4.8	55 0	6.9 8.7	7.7 7.5
J	1.3 0	6.3 5.3	10 3.1	30 5.5	7.4 8.2	6.2 0
D	1.8 7.1	6.6 6.0	11.5 4.3	45 2.3	11.9 3.0	8.2 10
F	1.9 9.3	4.8 1.9	13 5.8	38 3.7	13.5 1.1	6.6 2.0
G	1.3 0	5.2 2.8	12 4.4	39 3.5	12.9 1.8	7.2 5.0
E	1.7 5.7	5.1 2.6	11.5 4.3	43 2.7	10.4 4.7	7.1 4.5
N	1.8 7.1	5.3 3.0	13 5.5	40 3.2	5.8 10	7.4 6.0
H	1.7 5.7	5.6 3.7	11.5 4.3	38 3.7	9.7 5.5	7.5 6.5
A	1.7 5.7	6.0 4.7	7.5 0.3	43 2.7	9.2 6.4	7.3 5.5
Z	2.0 10	5.3 3.0	14 6.8	50 1.1	9.8 5.4	7.4 6.0
C	1.5 2.9	5.0 2.3	13.5 6.3	37 4.0	8.3 7.1	7.6 7.0
S	1.3 0	6.3 5.3	- -	15 8.8	12.3 2.5	7.0 4.0
L	1.4 1.4	4.9 2.1	12 5.1	26 6.5	11.5 3.4	8.2 10
R	1.4 1.4	4.8 1.9	11 3.5	42 2.6	12.6 2.2	7.8 8.0
T	1.3 0	4.7 1.6	17 10	10 10	9.1 5.8	6.9 3.5
I	1.9 8.6	4.9 2.1	- -	15 8.9	14.5 0	7.6 7.0
U	2.0 10	8.3 10	7 0	54 0.1	8.5 6.9	7.4 6.0

Notes: When two vertical columns are present left is raw data, right are 0-10 scores. Data sources listed in second horizontal rows; OECD = Organization for Economic Co-operations and Development, WHO = World Health Organization, UN = United Nations.

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Appendix F. Cross-national data sets and scores, part 6.

	Corruption		Per capita income		Income inequality		Poverty index		Employment levels	
Source>	Transparency International 2000		UN 2004		UN 2004		UN 2004		OECD 2001	
	value	score	US \$K	score	index	score	Value	score	%	score
W	9.4	9.2	26.1	3.0	25.0	9.9	6.5	10	73	7.5
J	6.4	3.5	26.9	3.6	24.9	9.9	11.1	5.1	69	6.0
D	9.8	10	30.9	6.2	24.7	10	9.1	7.2	77	8.8
F	6.7	4.0	26.9	3.6	32.7	6.3	10.8	5.4	60	2.7
G	7.6	5.8	27.1	3.7	28.3	8.4	10.3	5.9	65	4.6
E	8.7	7.9	26.2	3.1	36.0	4.8	14.8	1.1	72	7.1
N	9.1	8.7	36.6	10	25.8	9.5	7.1	9.4	78	9.4
H	8.9	8.3	29.1	5.0	30.9	7.2	8.2	8.2	71	6.8
A	8.3	7.1	28.3	4.5	35.2	5.2	12.9	3.1	68	5.8
Z	9.4	9.2	21.7	0.2	36.2	4.7	-	-	70	6.4
C	9.2	8.8	29.5	5.3	33.1	6.2	12.2	3.9	70	6.5
S	7.0	4.6	21.5	0	32.5	6.4	11.0	5.2	54	0.5
L	8.6	7.7	30.0	5.6	33.1	6.2	-	-	78	10
R	7.7	6.0	29.2	5.1	30.0	7.6	-	-	68	5.8
T	4.6	0	26.5	3.3	36.0	4.8	11.6	4.5	53	0
I	7.2	5.0	36.4	9.8	35.9	4.9	15.3	0.5	63	3.7
U	7.8	6.2	35.8	9.4	46.6	0	15.8	0	74	7.9

Notes: When two vertical columns are present left is raw data, right are 0-10 scores. Data sources listed in second horizontal rows; OECD = Organization for Economic Co-operations and Development, UN = United Nations.

Appendix G. Cross-national data sets and scores, part 7.

	Average hours worked		Resource exploitation base		Foreign born	Cultural fractionalization
Source>	Rosnick and Weisbrot 2006		Marks et al. 2006		OECD 2001	Fearon 2003
	Hours /year	score	Hectares /person	score	%	value
W	1550	5.6	7.0	4.4	5.7	0.189
J	1760	1.3	4.3	9.1	1.5	0.012
D	1520	6.3	6.4	5.4	4.9	0.128
F	1430	8.1	5.8	6.5	6.5	0.251
G	1440	7.9	4.8	8.2	8.5	0.09
E	1620	4.2	5.4	7.2	4.0	0.184
N	1340	10	6.2	5.8	3.9	0.098
H	1350	9.8	4.7	8.4	4.4	0.077
A	1760	1.3	7.7	3.2	23.0	0.147
Z	1750	1.5	5.5	7.0	20	0.363
C	1760	1.3	6.4	5.4	17.5	0.499
S	1800	0.4	4.8	8.2	2.0	0.263
L	1540	5.8	5.3	7.4	19.0	0.418
R	1500	6.7	4.6	8.6	9.0	0.1
T	1610	4.4	3.8	10	2.3	0.04
I	1650	3.5	6.2	5.8	3.0	0.157
U	1820	0	9.5	0	9.9	0.271

Notes: When two vertical columns are present left is raw data, right are 0-10 scores. Data sources listed in second horizontal rows; OECD = Organization for Economic Co-operations and Development.