


Diversity in Religiosity Undermines Conventional Personal Morality Across the Globe: Evidence From 90 Nations, 300,000+ Individuals

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In societies where the populace exhibits a wide range of religiosity, social conservatives (religiously devout or socially traditional) feel their beliefs and way of life threatened, even where others in their society (secular, or socially liberal) have no desire to threaten them, or to discriminate against them, or even to proselytize. Examples include devout English Pilgrims in liberal 16th century Holland and devout Muslims in liberal 21st century Western Europe. We suggest that this is because diversity in religiosity itself poses a threat to conventional personal morality (attitudes on abortion, divorce, euthanasia, suicide, prostitution). The consequences of societal diversity in religiosity (the centrality of religion to one's life) for individuals' endorsement of conventional personal morality have been neglected in prior research. This paper shows that diversity in religiosity at the national level undermines individuals' endorsement of conventional personal morality, net of an individual's own religiosity, net of the average levels of religiosity and socioeconomic development in the individual's society, and net of key individual-level controls. Data are pooled from the World Values Surveys/European Values Surveys, 1981–2008, with 90 countries, 200+ surveys, and 300,000+ individual respondents. Analysis is by multilevel methods (variance components models with fixed effects and random intercepts, estimated by generalized least squares [GLS]).

Keywords: religiosity, diversity, morality, conventional morals, religious context, contact hypothesis, Asche hypothesis threat hypothesis.

INTRODUCTION: DIVERSITY IN RELIGIOSITY INTRINSICALLY THREATENS CONVENTIONAL PERSONAL MORALITY

When the Pilgrims fled the Netherlands to form their isolated colony on an alien shore, they were not fleeing persecution, but rather fleeing tolerance. Dutch society was diverse in religiosity and tolerant of diversity: The irreverent and the devout scurried side-by-side through the bustling markets of Amsterdam. The Pilgrims feared that this context would seduce their members and their children away from the strict rules and focus of their religion (Nuttall 1978; Sprunger 1982). Thus, the danger that Dutch society posed was not persecution: The danger was that Dutch tolerance (macro level) implicitly undermined the claim that there was one “true” religion, only one acceptable way of life, thereby leading individuals to consider alternatives (micro level).

Does this apply more widely? The Dutch example suggests, more generally, that diversity is not neutral, that it changes people, largely as an unintended consequence (Merton 1936, 1949).

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For example, in drafting the Virginia Statute for Religious Freedom (enacted 1786), Thomas Jefferson intended liberties specific to the domain of religion, but the tolerant context enjoined by those liberties may have much wider ramifications for individuals. From a more general standpoint, diversity of a nation's culture, including religiosity, is likely to be especially threatening to people in cultures or subcultures that emphasize mechanical solidarity—social cohesion and trust based on likeness (Durkheim 1897, 1902 [2013]). Yet, little is known about the impacts of the looseness/diversity of different aspects of culture on individuals (Uz 2015). Does diversity in religiosity necessarily presage an ongoing conflict between secular and religious people, with the secular embracing tolerance and wanting their freedom and the religious being threatened by this?

Our results, as will be seen, support the claim that in countries where the population is diverse in religiosity (a macro level characteristic), individuals are more tolerant of unconventional personal moralities (attitudes on abortion, divorce, euthanasia, suicide, prostitution).¹ In short, the degree of diversity in the macro context affects the individuals in it. This is above and beyond the individuals' own characteristics, and above and beyond other macro/contextual characteristics such as the nation's average level of belief, its religious affiliation mix, and its level of socio-economic development.

EXAMPLE: CONVENTIONAL PERSONAL MORALITY

In some societies, divergence from conventional personal morality attracts opprobrium, sometimes violent, but in other societies it causes scarcely a ripple. We suggest that, in keeping with the example of the Pilgrims, in societies with great diversity in the intensity of religiosity, there will be a weaker endorsement of conventional personal morality by individuals than in otherwise comparable societies that are more homogeneous in religiosity. The idea is basically that of a spill-over effect—that experiencing a context of diversity in religiosity even just by chance encounters in everyday life opens an individual's eyes to an array of plausible ways of life. That, in turn, intrinsically raises the possibility that there is no one best way. And, if religiosity is a choice rather than an imperative, maybe choice and diversity in other domains of life are also legitimate.

Notice that our argument is specifically about diversity, *not* about whether the average level of religiosity in a society is high or low. According to this line of reasoning, it is the objective normative everyday presence of a range of alternatives in religiosity in society that elicits for individuals the possibility of a legitimate range of alternatives on issues of conventional personal morality. Thus, our argument is about diversity, not about secularization (which could proceed either by uniformly reducing religiosity for everyone approximately equally, or by increasing diversity in religiosity, with religiosity being key for some individuals and irrelevant for others, while the average falls).

PRIOR RESEARCH

The Influence of Individual Religiosity

Prior research on individual religiosity clearly demonstrates its importance as an influence on moral attitudes and behaviors. For example, religiosity has been shown to affect ethno-religious

¹There is no single, standard term in the literature for the underlying general orientation that gives rise to specific attitudes on abortion, divorce, euthanasia, suicide, and prostitution. We will show later that viewing these specific attitudes as reflecting a common root attitude or latent variable is empirically as well as theoretically justified. "Conventional personal morality" captures most of what is needed here. We thank an anonymous referee for suggesting this useful label.

prejudice (Ekici and Yucel 2015), to reduce adolescent delinquency (Johnson et al. 2001), to induce traditional/ conservative sexual attitudes and behavior in young adults (Lefkowitz et al. 2004), to promote volunteering and civic engagement (McAndrew and Voas 2014; Paxton, Reith, and Glanville 2014; Stavrova and Siegers 2013), to promote opposition to euthanasia (Pitt 2014; Sikora 2009), and to enhance environmental concern, particularly among conservatives (Hekmatpour 2020). Furthermore, the closely related, but not identical, concepts of individual religious belief and worship service attendance have long been shown to shape individuals' attitudes toward abortion in multiple countries (Adamczyk 2013; J. Kelley, Evans, and Headey 1993; S. Kelley 2017) but whether national-level diversity of religiosity matters is yet to be demonstrated.

The Possible Influence of Affiliations

By contrast, the consequences of diversity in religious *affiliations* (denomination) for social and moral attitudes have been studied in prior research (Bennett 2015; Ellison, Burr, and McCall 1997; Traummüller 2011), but research on this topic that includes measures of religious belief, religious behavior, or religiosity tends to conclude that affiliation differences are small or nonexistent when religious intensity measures are controlled. In particular, what appears to be an affiliation difference between Muslims and Christians tends to turn out to be a difference in religious intensity (whether measured by belief, practice, or religiosity) with Muslims on average scoring higher than Christians, but no affiliation effect controlling for religious intensity, on attitudes toward abortion or gender roles (Forman-Rabinovici and Somme 2018) or on preference for religious political leaders (Breznau et al. 2011). For example, a comparative cross-national analysis finds that the determinants of attitudes toward abortion are closely comparable for Catholics, Protestants, members of Eastern Orthodox religions, Buddhists, Hindus, and Muslims and that apparent differences in abortion attitudes among members of these groups actually reflect different levels of religious practice and belief (and control variables) rather than differences between the groups per se (Jelen 2014). Thus, studies of individual-level influences on social attitudes suggest that religiosity is a more potent influence than affiliation.

Strength of Belief and Observance

Research has also documented the importance of individual-level religiosity for other social attitudes. For example, deeply religious people of both Muslim and Christian faiths strongly prefer the dominance of organized religion in politics, regardless of the dominant religion in their society, and the less devout of both affiliations prefer a smaller role for religion in public life (Breznau et al. 2011). This is not an assessment of the consequences of diversity, but it is pointing in that direction by showing that, at least on these issues, religiosity rather than affiliation matters. The evidence to date is consistent with the interpretation that there are differences, sometimes large, in belief and religiosity, but no “clash of civilizations.”²

Prior research has also investigated the consequences for individuals of the average *strength of religious belief* in their society (Finke and Adamczyk 2008; Kelley 2015; Kelley and de Graaf 1997). So, too, for the prevalence of religious *observance* (attendance at public worship services) in their society (Ruiter and Graaf 2006).

²Sneak preview: The findings in the section “Results: Description of diversity in religiosity” show that countries low on diversity tend to be high on religiosity, for example, Philippines, Egypt, but the relationship is far from perfect.

A New Angle: Diversity in Religiosity

But the potential impact of *diversity in religiosity* has been largely neglected. Each individual will have their own degree or level of religiosity—the subjective centrality of religion to the respondent—the importance of religion to their identity, and the importance of God and religion in their life. Their national-level religiosity context can be characterized by descriptive statistics concerning the distribution of religiosity in the respondent's country. The mean reflects the average religiosity in the nation and the standard deviation reflects the diversity or dispersion of religiosity in the nation. It is the latter that forms the focus of this paper. We are asking whether living in a context where everybody is similar in religiosity (low diversity) tends to weaken an individual's endorsement of conventional personal morality compared to an otherwise similar person living in a context where some people are much more religious than others (high diversity).

Let us first clarify our usage of the term “religiosity” at the individual level and then proceed to consider our focal macrolevel influence, diversity in religiosity. While the concept of religiosity at the individual level is clear and strong, the vocabulary is messy and inconsistent in the literature (Paxton, Reith, and Glanville 2014). We recognize that other scholars might prefer “religious identity” as a label for the subjective centrality of religion, but this label is too easily confused with religious affiliation and the identity as belonging to a specific religion. We also recognize that some other scholars use “religiosity” as a label for the whole package of dimensions of religious feeling, belief, and behavior. In the context of this unsettled vocabulary, we will use “religiosity” as our label for the subjective centrality of religion, but will offer reminders of the specific use throughout the text. The social climate or context of religiosity in a society can be characterized by the mean and standard deviation of the religiosity of the individuals in that society (macro variables). The former, the societal mean religiosity reveals the central tendency or typical degree of religiosity in the individual's context. The latter, the standard deviation of religiosity in a society, summarizes the diversity of religiosity in a society. For our individual respondents, those living in societies low in diversity are embedded in a context of apparent consensus on religiosity (whatever its level). By contrast, those living in societies high on religious diversity are surrounded by variety in religiosity (whatever the typical level).

What kinds of consequences does the degree of diversity in religiosity (macro level) have for individuals living in those contexts? We begin by investigating the consequences of countries' diversity in religiosity for their individual inhabitants' endorsement of conventional personal morality, as represented by attitudes toward abortion, divorce, euthanasia, suicide, prostitution. This is not meant to delimit the potential consequences of diversity, but rather to open the investigation of this domain using a familiar example of a set of attitudes, which have already been studied in connection with other dimensions of religion, as described above.

Hypotheses

Three hypotheses that have been influential in the intergroup relations literature and the morality literature have clear implications for our issue and lead to distinct predictions. Let us first consider the Contact Hypothesis springing from the work of Allport (1979 [1954]).

The Contact Hypothesis

The Contact Hypothesis suggests that, as diversity increases, random social contacts gradually bring more and more people into interpersonal interactions with others who differ in religiosity. That, in turn, generates a linear change in individuals' tolerance. Like most US research on intergroup relations at the time, Allport's highly influential Contact Hypothesis (Allport 1979 [1954]) focused on race relations between White and Blacks, specifically on factors that reduced

race prejudice, but the general argument that more contact with one or more members of another group reduces prejudice has been widely influential with applications to other intergroup situations. Allport himself felt that the reduction in prejudice would require specific conditions about the intergroup contact, but a meta-analysis of the vast body of research springing from this hypothesis has shown a very general connection between contact and prejudice reduction (Pettigrew and Tropp 2007). Of course, this process depends on the permeability of social networks on the religiosity dimension, but that cannot be inferred in the absence of genuine network data (Lim and MacGregor 2012). The best we can do is to say that if the network boundaries are relatively permeable, then the contact hypothesis predicts a linear decline in support for conventional personal morality as diversity in religiosity increases (net of one's own religiosity and control variables).

The Rupture Hypothesis

The Rupture Hypothesis suggests that conformity is both compelling and fragile. Whatever their personal beliefs or feelings, people will “go along” with the dominant ideology so long as they perceive it to hold strongly within their reference groups or in society as a whole. However, a breach of conformity by even a few people works like the proverbial hole in the dike, with the smallest breach causing rapid rupture, liberating people to form and act upon their own opinions (Asch 1956; Matthes and Arendt 2016; Noelle-Neumann 1974; Xue 2013). This perspective suggests a strongly curvilinear relationship—with the earliest increases in diversity in religiosity having the greatest consequences for views on conventional personal morality. Alternatively, Expectation States theory suggests a rupture just after the midpoint (Berger and Wagner 2016).

The Threat Hypothesis

By contrast to the Contact Hypothesis and the Rupture Hypothesis, the Threat Hypothesis posits that contact, or the very presence of diversity, increases prejudice and intolerance as a reaction to threat (Blumer 1958; Bobo and Hutchings 1996; Tajfel et al. 1971). The core expectation is that people who are perceived as different from oneself will be perceived as a multidimensional threat to one's group's culture and security. For our purposes, this theory suggests that experiencing diversity of religiosity in society should stimulate individuals' intolerance of unconventional personal morality. Thus, as diversity in religiosity in a society rises (macro level), so too should that society's individual members' support for conventional personal morality (micro level).

More recent research suggests that in some domains, both contact-based reduction in prejudice and increases in prejudice stemming from threat perceptions based on increasing group size of the out-group may exist simultaneously, at least in the ethnicity domain (Laurence 2014; Pettigrew and Hewstone 2017; Pettigrew, Wagner, and Christ 2010). In terms of diversity in religiosity, the net implications of this research are not clear, because whether the effects essentially cancel each other out or whether one dominates the other will depend in part on the degree of segregation by religiosity, with the permeability of boundaries enhancing the contact effect, on the one hand, and, on the other hand, perhaps on the intent and success of religious and secular elites in depicting their opponents as a large and growing threat.

Testing the Hypotheses

To test these hypotheses, we conduct a cross-national comparison of a very broad range of countries. We are specifically interested in whether the experience of living in a society that is diverse in religiosity—where some of your neighbors and fellow citizens find religion central to their lives, others find it largely irrelevant, and others are in between—encourages individuals to hold more tolerant attitudes toward personal morality. Diversity in religiosity is a straightforward concept, but its patterning around the world is not well known, so we describe it in some

detail and from a variety of angles. Our hypotheses focus on the connection between diversity of religiosity in one's country and one's individual tolerance. We address them through multilevel models which provide correct estimates of the impact of the focal national-level characteristic, diversity of religiosity, on individuals' tolerance about personal morality net of several potentially confounding influences. Prior theory and research suggest that secularization and modernization/socioeconomic development at the national level may very well impact individuals' moral stances. Hence, we need to demonstrate that diversity is not just secularization or modernization in a new bottle. To do so, we include national-level average religiosity and national-level socioeconomic development as control variables in the multilevel model. The multilevel model also allows us to control for several important differences among individuals, namely, age, gender, education, and their own religiosity. Thus, the effect of diversity that we find cannot be attributed to any of these other national-level or individual-level differences.

Next, let us reflect on what the hypotheses imply about the functional form of the relationship between diversity of religiosity and individuals' moral stances on conventional personal morality, net of the influences of the control variables. The Contact Hypothesis suggests a steady decrease in individuals' endorsement of conventional personal morality as national diversity in religiosity rises: a linear or gently curved negative relationship. By contrast, the Rupture Hypothesis suggests that as diversity emerges, individuals' endorsement of conventional morality will plunge. This implies a very strong downward arcing curvilinear effect. By contrast to both of these, the Threat Hypothesis suggests a positive relationship: Rising national-level diversity in religiosity stimulates individual endorsement of conventional personal morality, and that rise may start suddenly and may be steep. To cater for these different possibilities, we include in our model both linear and quadratic terms for diversity in religiosity. Moreover, to address the possibility that diversity might have different effects on tolerance depending on the individual's own level of religiosity, we also estimate a multilevel model that includes multiplicative interaction terms allowing the effect of diversity to differ according to the individual's own religiosity.

Data

Data are from the World Value Study and European Values Study data sets (EVS 2015; WVS 2015) pooled into one file (Diez-Medrano 2011). The WVS surveys are mostly representative national samples, usually conducted through face-to-face interviews by the local Gallup affiliate (for details: <http://www.worldvaluessurvey.org>). The WVS/EVS pooled data set is useful for this project because it includes not only a broad range of countries and but also valid measures of both religiosity and conventional personal morality. In the full data set there are over 340 surveys, over 100 countries, and over 500,000 individual respondents. The several questions analysed here were asked in varying numbers of surveys with therefore varying numbers of respondents.

In this analysis, we use all the national-level surveys that include our key variables, except that we dropped nations with less than 1 million citizens and several city-states (Hong Kong, Luxemburg, Singapore).³ We also dropped Israel, which did not ask some of the key questions and is an extreme outlier on diversity of religiosity. We separate a few nations based on history, for example, treating the former East Germany separately from West Germany and making similar distinctions in Eastern Europe. With these adjustments, there are 247 surveys in 96 societies, with 339,448 individual respondents.

The large number of societies and broad time period are a great benefit to this analysis, because the more societies and time periods that can be included, the more precise the estimates of the effects of country-level variables. (Having too few higher level units is a characteristic problem for multilevel models.) Moreover, the broader the range of countries, the greater the

³For some variables, Northern Ireland has a separate dataset, and for others it is pooled with Great Britain.

probability that the effects we discover are not spurious (Stinchcombe 1968; Evans and Kelley 2019).

Selectivity analysis following the methods of (Brezna et al. 2011) suggests that our results should give an unbiased representation of the contemporary world. We base the analysis on the 155 nations of the world with populations over one million. For them, we have data from the World Bank and similar sources on population size, level of development, and income inequality (Kaufmann, Kraay and Mastruzzi 2010). We use these as independent variables in a logistic regression analysis predicting whether or not a nation is in the sample that we analyze from the pooled WVS-EVS. The results suggest that the WVS-EVS overrepresents larger nations and more advanced nations, but not nations with an unequal distribution of income. Since we explicitly include GDP per capita at parity purchasing power as a control variable in our model, the overrepresentation of more advanced societies should not bias our results (Evans and Kelley 2007, Evans and Kelley 2019). Other exploratory analyses show that population size is not relevant to the issues at hand, so our results are not biased by the overrepresentation of larger nations either. We conclude that our results are likely to be representative of the nations of the contemporary world, albeit only indirectly generalizable to those nations not covered in these surveys.

Replication and Extension

A well-documented data set in a form convenient for reanalysis, together with complete STATA code for all of the analyses in this paper, will be freely available online on our website [identifying information suppressed] when this article is published.

MEASUREMENT

Assessing Multiple-Item Scales Using the Classical Measurement Model

Using multiple-item scales that represent latent variables in statistical analysis has the great advantage that it reduces random measurement error, thereby providing much more accurate estimates of effects. To assess whether a set of candidate items we are considering form a multiple-item scale—that they all tap the same underlying concept—we turn to the classical measurement model. If a set of variables that we have measured all tap the same underlying (unmeasured) latent variable, the classical measurement model says that the set of items should meet several criteria. (1) The candidate items (the variables we are considering for the scale) should have strong bivariate correlations with one another. (2) Above and beyond the bivariate correlations, factor analysis should show only one factor underlying the set of candidate items.⁴ (3) Each of the candidate items should have a high loading on the single factor. (4) The set of the candidate items should show scale reliability over 0.7 on Cronbach's alpha. (5) The correlations of each of the candidate items with criterion variables outside the scale should be of similar strength and direction (e.g., if feeling that religion is important in your life has a near-zero correlation with age, then so should the other candidate items; if feeling that religion it important in your life has a strong positive correlation with churchgoing, then so should the other candidate items; Bollen 1989; Traummüller 2011; Treiman 2009). Variables meeting these criteria can then be combined additively to form a multiple-item scale. We score each of our candidate items as 0 to 100 for ease of interpretation. To create the scales, we sum their variables and then divide by the number of items to return to

⁴The preferred method, which we will use here, is confirmatory factor analysis, part of the SEM (structural equation modeling) system. In practice, when proposed scales have strong internal structures, as ours do, the results tend to be closely similar for most factor analysis estimation procedures.

the original metric. This facilitates interpretation because the 0 to 100 range is familiar, but it only changes metric regression coefficients by a scale factor. It does not change correlations.

Religiosity: Centrality of Religion

Religiosity—how important religion is in one’s life—is well measured by multiple items in the WVS/EVS. Some of these have been asked in every WVS/EVS since the beginning, so they provide information on the largest number of cases. Accordingly, we will focus on those here as the candidate items for our scale.

These items form a strong multiple-item scale. The items are: Importance of religion in your life (a006), confidence in churches [“religious leaders” in non-Christian-tradition countries] (e069), identity as religious person (f034), importance of God in your life (f063). Note that these questions are not all adjacent in the questionnaire. In the Wave 5 questionnaire, for example (Survey and ASEP/JDS 2014), importance of religion in your life is part of the first module on the importance/centrality of different roles and identities. Confidence in churches is asked well into the questionnaire (p. 11 of 25 in the printed version) as part of a module on confidence in different institutions and groups. Identity as a religious person is asked on p. 16 of 25 in a religion module and importance of God in your life is asked five questions later. The questions have different answer categories. Thus, it seems unlikely that adjacency bias or response set distort the results we observe. It is possible that social desirability bias may artificially inflate the level of religiosity somewhat in some countries, but we are primarily interested in dispersion and in relationships rather than in central tendency, so it is unlikely to play a role in our results.

Just below, we provide the verbatim questions and answers, introduce their frequency distributions, and map them onto a 0 to 100 scale to provide means and standard deviations. There is no preestablished “natural” metric (like dollars or years) for religiosity, so we map each items onto a range of 0–100 with the answers at equal intervals,⁵ because widespread familiarity with percent enables most readers to readily interpret differences and magnitudes on this range (Evans and Kelley 2004b). Scoring at equal intervals over any other range would produce equivalent results that differ only by a scale factor. For clarity, the parts the respondent sees (or hears) are in green. Each answer is shown as the verbal answer followed by the score we assigned it, followed by its category percent in the variable’s percentage distribution.

1. For each of the following, indicate how important it is in your life. Would you say it is: ... Religion?

very important (100) 42%
rather important (67) 25%
not very important (33) 20%
not at all important (0) 13%

—

Total 100%
Cases 293,813
Don’t know, no answer 2%
Mean 65
Standard deviation 36

2. I am going to name a number of organizations. For each one, could you tell me how much confidence you have in them: ... churches—is it...

⁵The various sets of answer categories here all belong to the “Likert” family, which are intended to map onto numerical ranges at equal intervals (Likert 1932). Empirical analysis, for example comparing ordinal probit to OLS regression with answers scored at equal intervals shows that respondents treat such answers as though they were quantities at equal intervals (e.g., Evans and Kelley 2004).

a great deal of confidence (100) 32%
 quite a lot(67) 31%
 not very much (33) 25%
 none at all (0) 12%

—
 Total 100%
 Cases 312,374
 Don't know, no answer 3%
 Mean 61
 Standard deviation 36

3. Independently of whether you attend religious services or not, would you say you are:

A religious person (100) 70%
 Not a religious person (50) 25%
 A convinced atheist (0) 5%

—
 Total 100%
 Cases 300,252
 Don't know, no answer 5%
 Mean 83
 Standard deviation 28

4. How important is God in your life? Please use this scale to indicate. 10 means "very important" and 1 means "not at all important."

10 very important 44% [scored 100]
 9 7% [scored 89]
 8 8% [scored 78]
 7 6% [scored 67]
 6 5% [scored 56]
 5 8% [scored 44]
 4 3% [scored 33]
 3 4% [scored 22]
 2 4% [scored 11]
 1 not at all important 10% [scored 0]

—
 Total 100%
 Cases 307,399
 Don't know, no answer 2%
 Mean 70
 Standard deviation 35

These were easy questions for respondents to answer: Missing data rates are 5 percent or less for each of them, which is well within the normal range for international attitudinal data (Evans and Kelley 2004a).

Moderate to high religiosity is the dominant response in all these questions in the worldwide sample. Nonetheless, each of these items shows the full range of variation allowed by the answers. The standard deviations, the preferred measure for assessing tightness/looseness in cultural domains (Uz 2015), are substantial and of similar magnitude, with most being near 35 and one a bit lower, 28, on the 0 to 100 scale.

These items offer strong face validity as measures of a single latent variable: They all strongly reflect the concept of the importance of religiosity in one's life. Moreover, careful methodological work has documented that the meanings of religiosity items seem to be consistent across at least the European languages (Brechon 2007; Wolf 2006). That suggests it will be worthwhile

proceeding to more formal assessments of the internal coherence of the items. To begin, we turn to the correlations.

High interitem correlations. The items in the religiosity/religious centrality index are highly correlated among themselves (Table 1, Panel A, columns 1–4). Most of the correlations are in the mid .50s, with one a little higher, .71, and one a little lower, .46. These are stronger than the correlations among the items in many well accepted multinational multiple-item scales, which are often in the .3 to .4 range (Brezna and Eger 2016; Dietz, Dan, and Shwom 2007; Feldman and Johnston 2014).

One latent variable: Confirmatory factor analysis. Factor analysis examines a correlation matrix of measured variables—the ones in the data—to discover how many distinct latent variables underlie them. If there are no “Eigenvalues” over 1, then all the measured variables are distinct and should be analyzed separately. The number of Eigenvalues over 1 indicates the number of latent variables. For our set of religiosity measures there is one Eigenvalue over 1, indicating that they all measure a single latent variable which we dub “religiosity.”

High loadings in confirmatory factor analysis. The strong coherence indicated by these correlations is further substantiated by the SEM confirmatory factor loadings which range from .66 to .84 (Table 1, Panel A, column 5). These are all well within the acceptable range even within countries and they are strong for a multinational data set (Treiman 2009).

Cronbach’s alpha provides another angle on the internal consistency of the proposed scale. Its range is 0 to 1, with values over .7 indicating acceptable internal consistency. The alpha for this scale is .84, so it shows good internal consistency.

Similar correlations with criterion variables. Another indication that these measured variables all tap a single latent variable is that they have all have similar correlations with criterion variables. For example, all four indicators have correlations near 0 with age, near $-.10$ with male gender, near .5 with attendance at public worship services, etc.

Taken together, these results show that these several indicators all measure one latent variable or factor—religiosity or the centrality of devoutness to one’s identity, in conformity with the classical measurement model (Bollen 1989; Treiman 2009). Similar results have been found in prior research (Traummüller 2011). Note that, on purely statistical grounds, one would be justified in combining these religiosity/identity-as-devout questions with questions that refer specifically to religion-related beliefs (rather than centrality of religion), as shown in Panel C.⁶ However, we feel that on face-validity/conceptual grounds, these two aspects of religion should not be combined, albeit the relationship between them warrants future research attention.

We compute the multiple-item religiosity index as the simple average of the component items (each scaled from 0 to 100). If any is missing, we take the average of the valid items. Alternatively, one could build the index using the factor loadings, but that approach tends to replicate less well across surveys. Following Ockham’s Razor, we prefer the simpler approach, absent compelling evidence that the more complex produces clearer results.

The full range of potential religiosity is represented in the WVS/EVS samples, ranging from people whose identities are devoid of religiosity all the way to people for whom religiosity is their center and focus. As shown in the kernel density estimates (basically a smoothed histogram presented as a probability density function) below, there are many more highly religious people than there are people who shun religiosity or for whom religiosity is irrelevant (Figure 1)

To contextualize this, consider some examples. The mean religiosity in Germany is 35 points out of 100. The mean for the United Kingdom is 53 and the United States mean is 79, unusually high for an advanced country. Toward the top is Egypt where the mean religiosity is 95.

⁶Practically speaking, it would also be a disadvantage that the belief items do not appear in all the waves, so including them would lose many cases.

Table 1: Measurement of religiosity. Connections among scale items (Panel A): correlations (on left) and factor loadings (on right); correlations with criterion variables (Panel B); and correlations with additional religiosity items—available only in under half the surveys (Panel C). Pairwise correlations. Confirmatory factor loadings estimated by structural equation methods. Scale reliability for Panel A: Cronbach's alpha = .84. *N* for col. 5 = 230,959 and *N* for col. 6 = 109,741

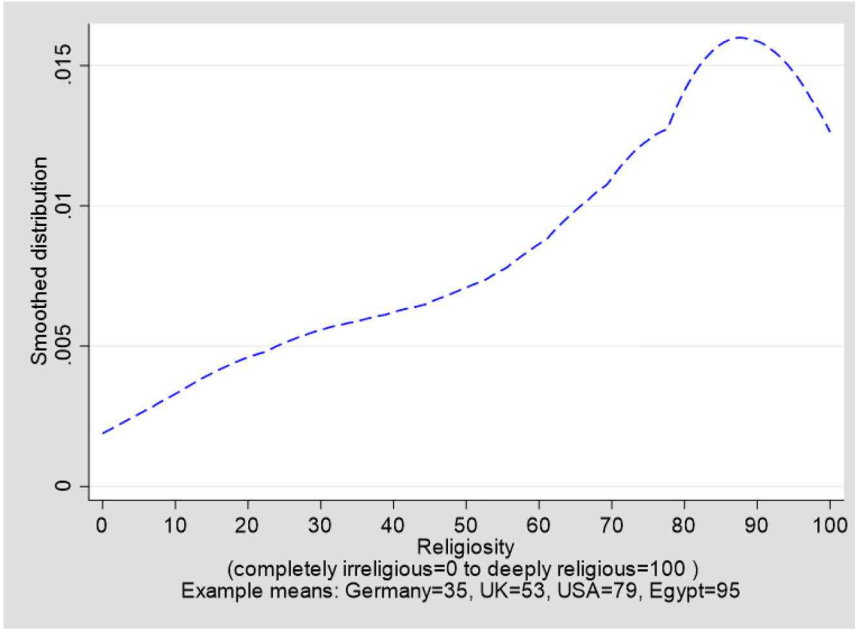
	Scale items				SEM confirmatory factor loadings	
	1 Religion important	2 Confident in churches	3 I am religious	4 God important	4 items ^a Panel A {5}	10 items Panels A&C {6}
[Panel A. Scale items] [1]						
Religion important (1)	1.0000				.84	.79
Confident in churches (2)	0.5883	1.0000			.69	.66
I am religious (3)	0.5384	0.4605	1.0000		.66	.75
God important (4)	0.7124	0.5563	0.5948	1.0000	.84	.87
[Panel B. Criterion variables]						
Age	0.0037	0.0386	0.0593	-0.0012		
Male	-0.0917	-0.0767	-0.1102	-0.0924		
Education	-0.1643	-0.1486	-0.1059	-0.1431		
Churchgoing ^b	0.5432	0.4754	0.4258	0.5170		
Endorse conventional morality	0.4243	0.3636	0.2696	0.4179		
GDP	-0.3119	-0.2669	-0.1628	-0.3241		
[Panel C. Available only in some surveys]Belief in...						
God	0.5607	0.4663	0.6145	0.7037	-	.77
Afterlife	0.4829	0.3782	0.3924	0.5398	-	.64
Souls	0.4355	0.3699	0.4055	0.5222	-	-.66
Heaven	0.5968	0.4937	0.4506	0.6548	-	.66
Hell	0.5382	0.4287	0.3554	0.5582	-	.66
God comforts	0.6639	0.5712	0.5846	0.7350	-	.80
[Number of cases]					230,959	109,741

^a: The scale used in subsequent analysis is the average of the four items in Panel A. If there are missing data, it is the average of the remaining items.

^b: Short hand for frequency of attendance at public worship services

Figure 1

Religiosity, worldwide, 1980–2014. Smoothed percent distribution (kernel density) of religiosity scale from completely irreligious (0) to deeply religious (100) [Color figure can be viewed at wileyonlinelibrary.com]



But that is all about individuals and the question of diversity crucially concerns societies: Does *societal* religious diversity mitigate the rigid attachment to conventional personal morality associated with strong individual religiosity? Multilevel approaches to ethnic prejudice have proven very fruitful in recent years (Pettigrew and Hewstone 2017), so this is a promising path to pursue in other domains, such as our concern with religiosity.

CONVENTIONAL PERSONAL MORALITY

Our research question focuses on the degree to which someone endorses conventional personal morality, the degree to which they condemn nontraditional behaviors in the domain of sex and death.⁷ The WVS/EVS approach to this is to ask whether various behaviors are “Never justifiable” to “Always justifiable” on a 10-point range with the endpoints labeled. (The text is turned green for the parts the respondent sees.) The items are “Prostitution,” “Abortion,” “Divorce,” “Euthanasia,” and “Suicide.”

Please tell me for each of the following actions whether you think it can always be justified, never be justified, or something in between, using this card ...

⁷Attitudes on homosexuality are related to, but distinct from the conventional personal morality scale we use (Dillon 2014; Jaekle and Wenzelburger 2015).

[Show card – respondents saw only the text in green, not the grey scoring.]

1	Never justifiable					[scored 100]
2						[scored 89]
3						[scored 78]
4						[scored 67]
5						[scored 56]
6						[scored 44]
7						[scored 33]
8						[scored 22]
9						[scored 11]
10	Always justifiable					[scored 0]
		Prostitution	Abortion	Divorce	Euthanasia	Suicide
Mean (points out of 100)		82	70	70	70	70
Standard deviation		27	35	35	35	35
Don't know, no ans.		3%	2%	2%	2%	2%
Cases		329,451	307,399	307,399	307,399	307,399

The worldwide means for all these actions lie between 70 and 82, demonstrating substantial opposition. Yet, this is far from univocal as shown by the large standard deviations, ranging from 27 to 35. These were easy questions for people to answer, as indicated by the very low missing data rates, just 2 to 3 percent.

The measurement analysis shows that there are acceptably strong interitem correlations among the candidate items (Table 2), ranging from .38 to .61, with most of them close to the middle .40s (Panel A.) Cronbach's alpha for the scale created from these five items is .80, indicating strong internal coherence. The fact that they all measure a single underlying dimension or concept is shown by the high factor loadings for the SEM confirmatory factor analysis in the column on the far right of Panel A. (A supplementary exploratory analysis reveals only one eigenvalue over 1, further bolstering the view of a single dimension.)

Moreover, the correlations with criterion variables (read across the rows) are consistent with the claim that these five items all tap the same latent variable. For example, the correlations with GDP per capita at parity purchasing power are all negative and of moderate strength in the range $-.21$ to $-.27$. Correlations with age and gender are all near zero, etc.

Accordingly, we create "Conventional Personal Morality" as an additive scale combining the five items and map it onto a range of 0 (tolerant) to 100 (conservative) for ease of interpretation.

The distributions of conventional personal morality in different countries are not surprising (Figure 2). For example, famously tolerant Sweden (gold dashed line) has a distribution of opinion with a peak a little below the center and very dispersed values, with a mean of 47. The United States (red) is heaped toward the conservative end with a mean of 70 and quite dispersed opinions. Egyptian attitudes (green) are centered even further toward the conservative end, with a mean of 86 and much less dispersion.

MEASUREMENT: OTHER VARIABLES

Individual-level control variables for this analysis include age in single years, gender measured as a dichotomy with male = 1 and female = 0, and educational attainment measured in single years. Older people (or prior cohorts—we do not distinguish these effects here) are generally a little more conservative. The evidence about gender is mixed. Highly educated people are generally more tolerant than their less educated peers.

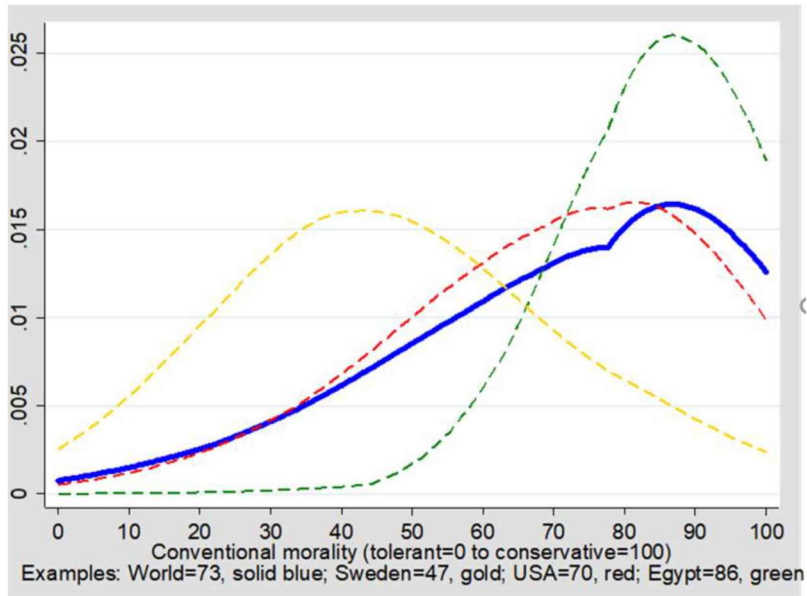
Table 2: Measurement of conventional personal morality. Scale items (Panel A) and correlations with criterion variables (Panel B). Confirmatory factor loadings estimated by structural equation methods. Cronbach's alpha for Panel A = .80. *N* individuals = 189,179

	Prostitution	Abortion	Divorce	Euthan.	Suicide	SEM confirmatory factor loadings
[Panel A. Scale items] [a]						
Prostitution	1.0000					.62
Abortion	0.4810	1.0000				.79
Divorce	0.4385	0.6106	1.0000			.72
Euthanasia	0.3898	0.4888	0.4617	1.0000		.66
Suicide	0.4538	0.4287	0.3754	0.4346	1.0000	.58
[Panel B. Criterion variables]						
Age	0.0820	0.0362	0.0656	0.0408	0.0501	
Male	-0.0715	0.0043	0.0167	-0.0197	-0.0110	
Education	-0.1032	-0.1682	-0.1730	-0.1646	-0.0928	
Churchgoing	0.1974	0.3377	0.2848	0.2925	0.1878	
Religiosity	0.2695	0.4256	0.3297	0.3611	0.2836	
GDP	-0.2325	-0.2698	-0.2653	-0.2556	-0.2065	
[Number of cases]						189,179

[a] The scale used in subsequent analysis is the average of the five items in Panel A. If there are missing data, the scale value is the average of the remaining items.

Figure 2

Conventional personal morality, worldwide, 1980–2014. Smoothed percent distribution (kernel density) of conventional personal morality scale from completely tolerant (0) to deeply conventional (100). Blue solid line for the world as a whole. Gold dashed line is Sweden. Red dashed line is the United States. Green dashed line is Egypt [Color figure can be viewed at wileyonlinelibrary.com]



Because national-level socioeconomic development itself is a well-known influence increasing tolerance, it is important to control it in the models in order to avoid omitted variables bias/confounding variables bias (Evans and Kelley 2004a). It is measured as GDP per capita at parity purchasing power. We tested for curvilinear effects, but they were not significant, so we have retained the linear form.

Because the specific focus of this paper is on the diversity of religiosity, it is important also to include as control variables both individual-level religious belief and contextual national-level belief.

As described below in the Methods section, our models begin with simple linear relationship of these variables predicting endorsement of conventional personal morality, but then also incorporate interactions among some of the variables and more flexible functional forms, specifically allowing curves in some of the effects.

Our analysis also includes several other attitude scales in specific part of the analysis. Measurement tables for them are in the Appendix.

METHODS

We use a variance-components multilevel model estimated by generalized least squares (GLS) with random intercepts by society (Hox 1995) estimated in Stata 14 using its xtreg procedure. A corresponding mixed-effects multilevel regression (Stata's xtmixed) produces indistinguishable results. The clustering variable is country x year.

Multilevel modeling is the optimal choice for this analysis because it provides the correct standard errors for the national-level variables and does not assume independence of cases within

nations, unlike ordinary least squares regression (OLS). The multilevel coefficients and predicted values have exactly the same interpretation as they would in OLS.

We focus on 3 models. Individual-level variables are indicated by an “i” subscript and brown font. A “CTX” suffix with blue font indicates a linear term for a country-level variable. Interaction terms are not named separately, but instead are shown by their components with an “x” in between. For example, DiversityCTX x Religiosity_i, is the interaction of Diversity (country level) with Religiosity (individual level). The terms to allow curvature are shown in green. For clarity, we give the level of each variable on the right in grey.

Equation (1) is the linear model.

$$\text{EndorsementOfConventionalMorality}_i = \text{\textit{\{individual-level dependent variable\}}} \\ f(\text{ DiversityCTX, } \text{\textit{\{country-level diversity\}}} \\ \text{Religiosity}_i, \text{\textit{\{individual-level religiosity\}}} \\ \text{ReligiosityCTX, } \text{\textit{\{country-level religiosity\}}} \\ \text{Age}_i, \text{ Male}_i, \text{ Education}_i, \text{ GDPperCapitaCTX) } \text{\textit{\{controls\}}} \quad (\text{eq. 1})$$

Equation 2 adds cross-level interaction term DiversityCTX x Religiosity_i to the linear model of equation 1. That allows the effect of contextual diversity in religiosity to differ by individual religiosity.

$$\text{EndorsementOfConventionalMorality}_i = \text{\textit{\{individual-level dependent variable\}}} \\ f(\text{ DiversityCTX, } \text{\textit{\{country-level diversity of religiosity\}}} \\ \text{Religiosity}_i, \text{\textit{\{individual-level religiosity\}}} \\ \text{ReligiosityCTX, } \text{\textit{\{country-level religiosity\}}} \\ \text{DiversityCTX x Religiosity}_i, \text{\textit{\{cross-level interaction\}}} \\ \text{Age}_i, \text{ Male}_i, \text{ Education}_i, \text{ GDPperCapitaCTX) } \text{\textit{\{controls\}}} \quad (\text{eq. 2})$$

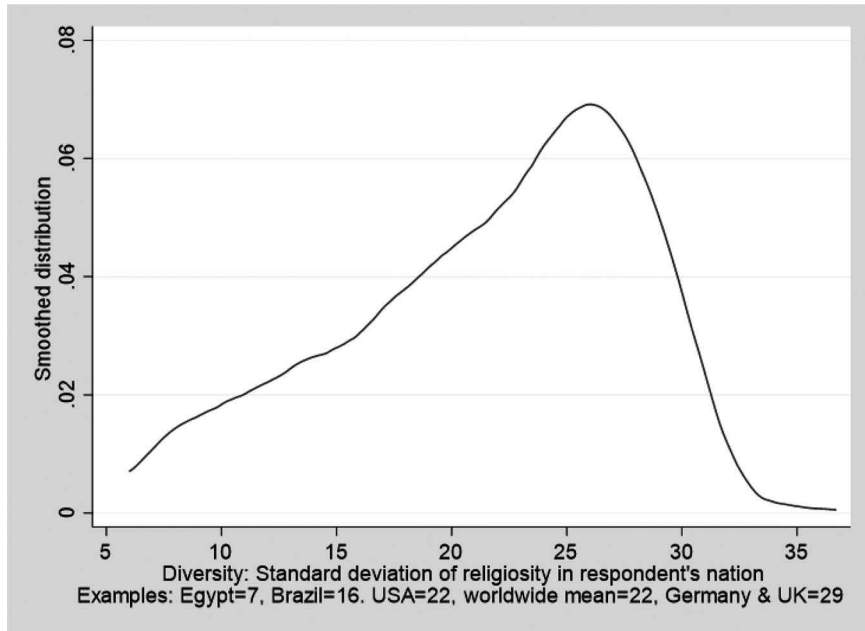
Equation 3 augments Equation 2 by adding the terms that allow curvature in the effects of diversity of religiosity, DiversityCTX² and DiversityCTX² x Religiosity_i.

$$\text{EndorsementOfConventionalMorality}_i = \text{\textit{\{individual-level dependent variable\}}} \\ f(\text{ DiversityCTX, } \text{\textit{\{country-level diversity\}}} \\ \text{DiversityCTX}^2, \text{\textit{\{curvature in country-level diversity\}}} \\ \text{Religiosity}_i, \text{\textit{\{individual-level religiosity\}}} \\ \text{ReligiosityCTX, } \text{\textit{\{country-level religiosity\}}} \\ \text{DiversityCTX x Religiosity}_i, \text{\textit{\{cross-level interaction\}}} \\ \text{DiversityCTX}^2 \text{ x Religiosity}_i, \text{\textit{\{cross-level interaction\}}} \\ \text{Age}_i, \text{ Male}_i, \text{ Education}_i, \text{ GDPperCapitaCTX) } \text{\textit{\{controls\}}} \quad (\text{eq. 3})$$

When models incorporate quadratic and interaction terms, it can be misleading to interpret the terms separately. Therefore, we provide the tables for replication purposes, but we focus on graphs of predicted values in the text because they bring together the different elements of the influence of the variable of interest. The predicted values are generated through a simple simulation based on a whole population standardization (Kelley and Evans 1995). Because the models are nonlinear, the calculations are a little more complicated than the simple but conceptually equivalent calculations with linear equations, for example from OLS. For linear models, the natural choice is to construct an artificial case with average characteristics. However, when curvature is allowed, the predicted value for an artificial case with average characteristics may be far from the average and the slopes can vary greatly from person to person. So, there is no simple summary. Those drawbacks to the simple procedure justify undertaking a slightly more complex approach, a “whole population

Figure 3

Diversity in religiosity (country's standard deviation of religiosity, with religiosity measured as points out of 100). Smoothed (kernel density) of distribution. Units are countries [Color figure can be viewed at wileyonlinelibrary.com]



standardization” (Kelley and Evans 1995). In the whole population standardization, we use the model results to calculate a predicted value on the response variable for every single person in the sample and average them to obtain a predicted value for the portion of the population with specific characteristics. The results depend both on the equation and on the population chosen as a baseline for comparison (here we use the central 98 percent of the worldwide sample, to avoid possible measurement error issues with the top and bottom 1 percent).

RESULTS: DESCRIPTION OF DIVERSITY IN RELIGIOSITY

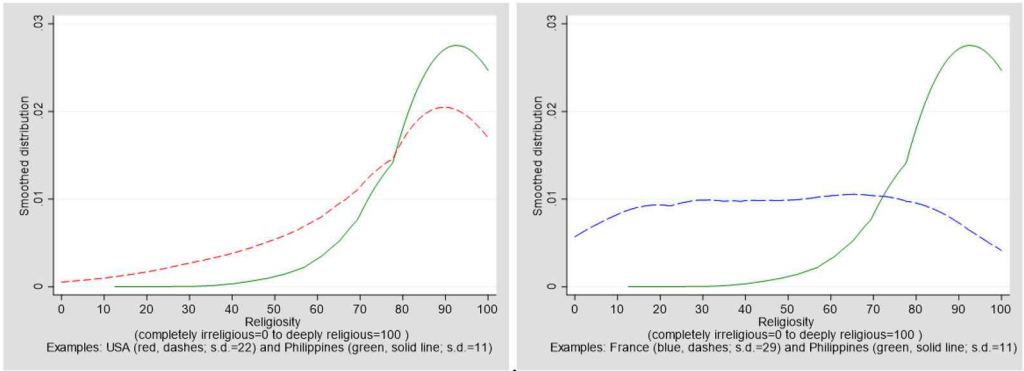
The full range of religiosity is represented in the individuals WVS/EVS samples, ranging from people whose identities are devoid of religiosity all the way to people for whom religiosity is the center and focus of identity. Countries’ populations contain varying mixes religiosity, ranging from highly homogeneous (like the Philippines or Indonesia) to highly diverse (like the United Kingdom, Germany, or Hungary).

Diversity in Religiosity

Taking countries as the unit of analysis, the standard deviation of religiosity, hereafter “diversity in religiosity,” is around 20 to 25 in most societies, with a mean of 22 (Figure 3). Nonetheless, a wide spectrum of levels of diversity in religiosity is present in this worldwide sample, ranging from extremely uniform societies with diversity in religiosity below 10 to societies where religiosity is highly dispersed, with diversity in religiosity around 30. There are peaks around 11 (e.g., Guatemala, the Philippines, Rwanda), 20 (e.g., India, Poland, Turkey), and 28 (e.g., the Netherlands, South Korea, Uruguay). For comparison, a uniform distribution—where religiosity would be evenly scattered across the entire spectrum from 0 to 100 and hence would have a very

Figure 4

Examples of different countries illustrating different levels of diversity of religiosity. Left panel has the United States (red, *SD* = 22) and Philippines (green, *SD* = 11). Right panel has France (blue, *SD* = 29) and Philippines (green) [Color figure can be viewed at wileyonlinelibrary.com]



high standard deviation—would have a standard deviation of about 29. Thus, the mean diversity in religiosity of 22 indicates a moderately high degree of dispersion.

In more detail, a few societies are very homogeneous in religiosity, having very low standard deviations under 12, for example in the Philippines and Indonesia (Figure 3 and Table 3). More, such as Brazil, have diversity in the teens. Diversity in religiosity in the United States matches the worldwide average of 22. Some countries are much more diverse, with standard deviations near 30, for example, France, Germany Hungary, Slovakia, and the United Kingdom. Our dependent variable, conventional personal morality also covers a wide spectrum, as does an important control, the level of religiosity.

Examples Illustrating Differences in Diversity

Let us consider some examples. To begin, the modal level of religiosity in both the Philippines (green line) and America (red line) is near 90 (Figure 4, left panel). In America, however, religiosity is more widely dispersed: Diversity of religiosity is 22 in America and 11 in the Philippines. Assuming that network boundaries are relatively permeable, this means that chance encounters for Americans are much more likely to involve somebody whose religiosity is different from one’s own. One is still more likely to encounter someone of typical religiosity than atypical religiosity, but the probability of that is lower. To take a stronger contrast, the figure on the right compares religiosity levels in France (the widely dispersed distribution approximates a uniform distribution) shown in the dashed blue line to religiosity levels in the Philippines. Assuming relatively permeable network boundaries, chance encounters are equally likely across the spectrum in France. If a French person were to make a bet on the degree of religiosity of the next person they encounter, there is no good bet: All outcomes are approximately equally likely. By contrast, in the Philippines, it would be a good bet that the next person you encounter will be highly religious.

All three of our hypotheses claim that the degree of diversity in religiosity in the society shapes the endorsement of conventional personal morality in its populace. In the examples above, the Contact Hypothesis would anticipate that individual Filipinos would more strongly endorse conventional personal morality than would Americans because the Philippines is less diverse in religiosity than the United States, as shown by the higher narrower peak (green solid line) in Figure 3, left panel. In turn, the Contact Hypothesis would anticipate that France’s great diversity of religiosity (dashed blue line, right panel) would lead French individuals to have a weaker attachment to conventional personal morality than those in the other two countries. The other two

Table 3: Diversity of religiosity (country's standard deviation of religiosity), conventional personal morality (mean), and religiosity (mean) for each country

Country (and UN code)	Std. dev. religiosity	Conventional morality	Mean religiosity	Cases
818 Egypt	7	86	95	6,051
504 Morocco	8	87	96	3,464
400 Jordan	8	93	94	1,223
360 Indonesia	9	92	94	3,019
050 Bangladesh	9	97	95	3,025
288 Ghana	10	85	94	1,534
566 Nigeria	10	88	94	5,019
466 Mali	10	70	93	1,534
682 Saudi Arabia	11	86	93	1,502
646 Rwanda	11	90	85	1,507
586 Pakistan	11	96	91	2,733
608 Philippines	11	77	91	1,200
368 Iraq	11	93	89	5,026
834 Tanzania	11	91	93	1,171
458 Malaysia	13	76	86	1,201
320 Guatemala	13	78	89	1,000
764 Thailand	14	79	73	1,534
364 Iran, Islamic Rep	14	88	89	5,199
894 Zambia	14	72	89	1,500
630 Puerto Rico	14	83	89	1,884
780 Trinidad	14	83	83	1,002
800 Uganda	14	88	90	1,002
854 Burkina Faso	14	81	88	1,534
716 Zimbabwe	15	95	90	1,002
012 Algeria	16	87	85	1,282
076 Brazil	16	79	84	4,431
222 El Salvador	16	88	84	1,254
604 Peru	17	82	81	4,212
268 Georgia	17	82	84	3,508
862 Venezuela	17	81	84	2,400
170 Colombia	17	84	83	9,050
231 Ethiopia	18	88	83	1,500
031 Azerbaijan	18	76	77	2,002
710 South Africa	18	79	85	13,255
214 Dominican Republic	18	76	82	417
642 Romania	20	75	81	5,264
484 Mexico	20	74	79	8,827
792 Turkey	20	82	81	8,890
158 Taiwan	20	71	56	2,007
616 Poland	20	77	80	5,168
356 India	20	79	79	8,543
152 Chile	20	78	78	4,700

(Continued)

Table 3: (Continued)

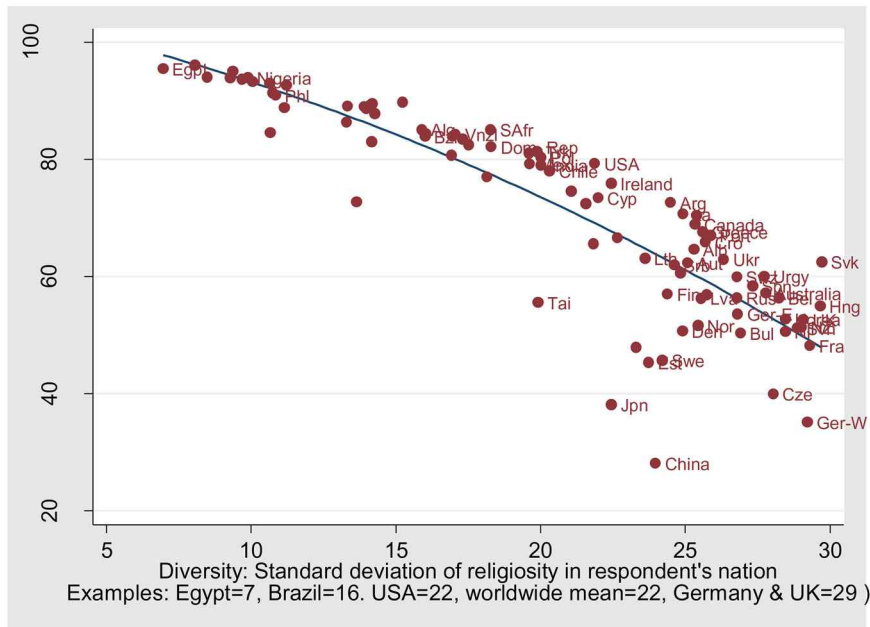
Country (and UN code)	Std. dev. religiosity	Conventional morality	Mean religiosity	Cases
498 Moldova	21	76	75	3,038
417 Kyrgyzstan	22	83	72	1,043
069 Bosnia – Serb part	22	76	66	800
840 United States	22	70	79	8,155
196 Cyprus	22	71	73	1,050
372 Ireland	22	82	76	3,229
392 Japan	22	66	38	5,727
807 Macedonia	23	79	67	2,050
704 Viet Nam	23	86	48	2,495
440 Lithuania	24	74	63	3,027
233 Estonia	24	64	45	3,034
156 China	24	77	28	5,515
752 Sweden	24	47	46	3,981
246 Finland	24	56	57	3,627
032 Argentina	24	72	73	3,361
688 Serbia (only)	25	65	62	3,700
499 Montenegro	25	73	61	1,300
208 Denmark	25	52	51	3,235
380 Italy	25	72	71	6,378
040 Austria	25	66	62	2,982
008 Albania	25	74	65	1,999
124 Canada	25	64	69	7,079
071 Bosnia – not Serb	25	75	70	1,600
578 Norway	25	64	52	4,442
428 Latvia	26	64	56	3,116
300 Greece	26	64	68	1,142
191 Croatia	26	66	66	2,199
112 Belarus	26	65	57	4,107
620 Portugal	26	76	67	1,185
804 Ukraine	26	72	63	5,006
756 Switzerland	27	56	60	3,853
643 Russia	27	69	56	8,534
278 Germany-East	27	63	54	5,431
100 Bulgaria	27	66	50	4,107
724 Spain	27	66	58	11,270
858 Uruguay	28	60	60	2,000
036 Australia	28	57	57	4,697
203 Czech Republic	28	59	40	6,088
056 Belgium	28	65	56	5,849
528 Netherlands	28	52	51	4,291
410 Korea, Rep (South)	28	72	53	5,870

(Continued)

Table 3: (Continued)

Country (and UN code)	Std. dev. religiosity	Conventional morality	Mean religiosity	Cases
705 Slovenia	29	56	51	3,078
554 New Zealand	29	55	51	2,155
826 United Kingdom	29	61	53	5,785
280 Germany-West	29	60	35	4,420
250 France	29	55	48	4,818
348 Hungary	30	69	55	1,999
703 Slovakia	30	63	63	4,028

Figure 5
Diversity in religiosity and mean religious belief: Bivariate relationships for countries. Scatterplot and fit line. WVS and EVS, Waves 1–6 [Color figure can be viewed at wileyonlinelibrary.com]

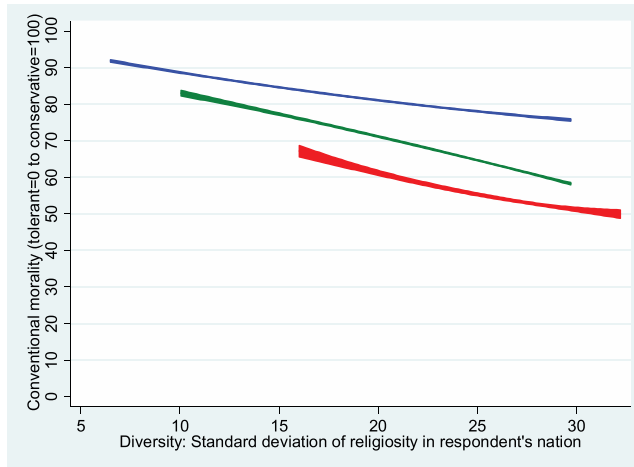


hypotheses would also anticipate that these countries would differ in endorsement of conventional personal morality. The impact of diversity in religiosity forms the focus of the multivariate section below; the point of these graphs is to familiarize us with the range of religiosity distributions that are summarized by diversity of religiosity measure.

Turning to the country level, let us consider first the connection between diversity in religiosity and intensity of belief (macro level). The data reveal a clear negative link between diversity in religiosity and intensity of belief. Societies very low in diversity (Figure 5, far left) are also those where the average citizen is a strong believer: The mean religious belief is 80 points out of 100 or higher in all the countries where diversity of religiosity is 12 or less. Among countries at higher levels of diversity, strong belief is still common, on average, but there is considerable diversity in religious belief among societies with moderate to high diversity in religiosity (further to the right on Figure 5). For example, in countries with diversity in religiosity around 20, mean religious

Figure 6

Endorsement of conventional personal morality according to diversity in religiosity for three groups: Those whose religious beliefs are in the strongest 10 percent (blue), those whose religious beliefs are near the 50th percentile (green), and those whose religious beliefs are in the lowest 10 percent (red). WVS and EVS, Waves 1–6 [Color figure can be viewed at wileyonlinelibrary.com]



belief ranges from a low of around 20 points out of 100, for Taiwan, up to around 80 for Poland and India. Thus, in some countries at moderate levels of diversity in religiosity, the populace is relative homogeneous in their religiosity, whereas others at the same average level of diversity belief exhibit much stronger belief. Because we are seeking an unbiased estimate of the effect of diversity in religiosity, the strength of the connection with belief makes it especially important to control for the effects of belief in our models.

RESULTS: DESCRIPTION OF THE LINK BETWEEN DIVERSITY IN RELIGIOSITY AND CONVENTIONAL PERSONAL MORALITY

The evidence below shows that the more diverse the society, the less the consensus supporting conventional personal morality. This concerns the bivariate relationship with no controls. Rigorous testing of our hypotheses will depend on the later multivariate analysis, but the relationships predicted by the hypotheses should normally be visible in the bivariate links, too.

Focus on the Individual Level

First, our argument requires that the context of diversity in religiosity should matter for individuals' endorsement of conventional personal morality regardless of the strength of their own faith. To explore this, we assess the connection between diversity and endorsement of conventional personal morality for three groups: people with very strong religious beliefs (top 10 percent in the worldwide sample, blue line at the top of Figure 6), people with middling strength of religious belief, around the 50th percentile (green line in the center), and people with low religious belief (red line, bottom 10 percent in the worldwide sample).⁸

⁸There is no special substantive reason for picking these three groups, other than that we wanted to have few enough groups to see clearly on the graph but also to cover the range of religiosity without undue emphasis on the extremes.

For all three groups, the downward slope of their line shows that the higher the diversity in religiosity, the weaker the endorsement of conventional personal morality. In increasingly diverse societies, the attachment of strong believers (blue line) to conventional personal morality clearly weakens, but nonetheless remains rather high, dropping from over 90 to near 75.

For people with middling religious belief (those who score between 25 and 78 on the religiosity scale shown on the center line, in green), the differences in endorsement of conventional personal morality according to the diversity in religiosity of the context are also substantial. These moderately religious people are strongly attached to conventional personal morality in societies that are homogeneously religious (green line, left end). On average, they score around in the middle 80s on conventional personal morality. But their attachment to conventional personal morality weakens faster than for their more religious neighbors. Conventional morality endorsement weakens steadily to the high 50s for middling believers living in societies highly diverse in religiosity (green line, right end). The combination of contextual diversity and religious belief means that people with middling religious belief living in low-diversity societies tend to more strongly endorse conventional personal morality (middle 80s, left end of green line) than do strong believers living in high diversity societies (middle 70s, right end of blue line).

For the weak believers (red line), endorsement of conventional personal morality falls from the high 60s in lower diversity societies to around 50 in high diversity societies. This is nearly 20 points lower than highly religious individuals in the same societies and about 10 points lower than their moderately religious peers. This group, too, shows a clear, but not sudden or drastic, linear decline in attachment to conventional personal morality with the increasing societal diversity in religiosity.

These results showing that individuals' endorsement of conventional person morality declines as societal diversity in religiosity increases (negative relationship) are directly contrary to the Threat Hypothesis that increasing diversity would stimulate increasing endorsement of conventional morality (positive relationship).

Moreover, the decline in endorsement of conventional morality as diversity increases is nearly linear with only gentle curvature, contrary to the Asch variant of the Rupture Hypothesis that a little bit of diversity strongly undermines a norm. This version of the Rupture hypothesis would predict a public visibility effect, for example, if a single person in one's village demonstrates insouciance toward religion, it shakes everybody's foundations, leading to a sharp, sudden decline in endorsement of conventional personal morality. The Expectation States version of the Rupture Hypothesis would predict a sudden sharp decline, albeit starting at a higher level of diversity. By contrast, the results in Figure 6 showing a smooth, not terribly steep, decline for all three groups are more consistent with the Contact Hypothesis (Allport 1979 [1954]; Lemmer and Wagner 2015; Powers and Ellison 1995): The less unified a society is in terms of religiosity, the more likely that, purely randomly, one will encounter persons different from one's self. Those encounters, in turn, will gently loosen one's attachment to conventional personal morality.

Thus, societal diversity in religiosity is associated with lower endorsement of conventional personal morality for secular individuals, moderately devout individuals, and extremely devout individuals alike.

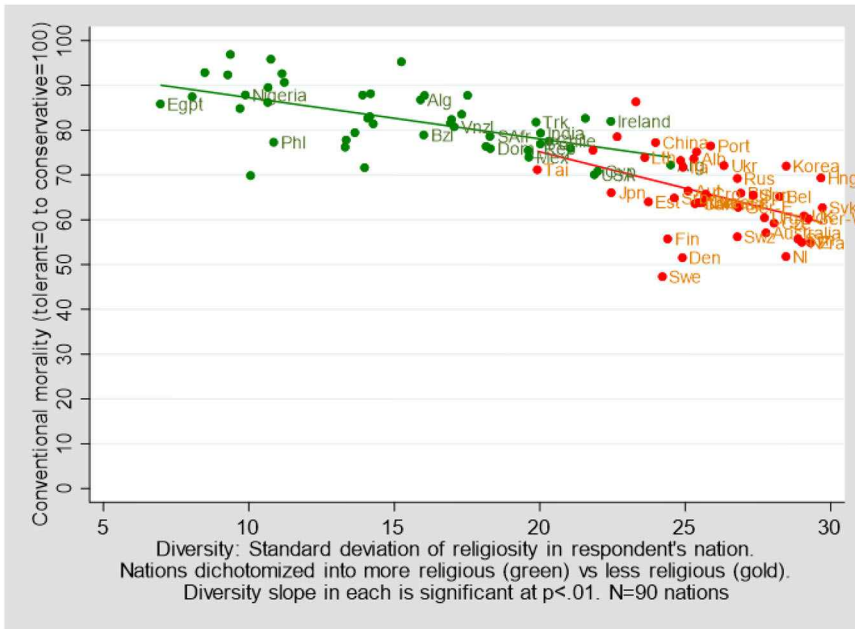
Country Level

To make these results more concrete—few of us are accustomed to thinking about how much countries differ in diversity of religiosity—let us examine scatterplots of national-level religiosity

Defining the groups in other ways would show the same pattern. The place where the group's line starts on the graph is determined empirically: their line does not start until at least 5 percent of the cases are in the near vicinity and it ends just before the cases dwindle below 5 percent.

Figure 7

Conventional personal morality and diversity of religiosity for countries where the national mean religiosity is in the upper half (in green) or the lower half (in gold). Scatterplots and linear fits (bivariate, $p < .01$). WVS and EVS, Waves 1–6 [Color figure can be viewed at wileyonlinelibrary.com]



(mean) and diversity of religiosity (standard deviation) with the countries labeled. Because the connection between diversity of religiosity and endorsement of conventional personal morality might differ between countries with higher average religiosity and those where religiosity is less, we divide the countries into a half with higher religiosity (Figure 7, green line and dots) and a half with lower religiosity (Figure 7, red line and red dots). To balance readability of the patterns in the graph and substantive interpretability, many, but not all, of the dots representing countries are labeled with their names.

First, countries where religiosity is high have a strong gradient between the country's diversity in religiosity and the country's mean attachment to conventional personal morality. In this group of countries, the mean endorsement of conventional personal morality is around 90 in highly homogeneous countries like Egypt and Nigeria down to around 70 in highly religious countries with the greatest diversity in religiosity such as Argentina, Cyprus, the United States, and Ireland (green line and dots).

Let us turn to the second group of countries, those with lower levels of religiosity. Among them, countries with the least diversity of religiosity, Taiwan for example, average conventional personal morality scores around 70. By contrast, the countries in this group with the greatest diversity—for example France, New Zealand, Slovakia, the United Kingdom, and Germany—have conventional personal morality scores that average around 60.

In terms of our hypotheses, from this angle as well, the clear, but not sharp, declines in endorsement of conventional personal morality as diversity increases are consistent with predictions from the Contact Hypothesis. The Rupture Hypothesis also predicts declines, but steeper and possibly more sudden ones. The clear negative relationships between diversity of religiosity and endorsement of conventional personal morality strongly undermine the Threat Hypothesis, which predicts a positive relationship. Thus far, the evidence favors the Contact Hypothesis.

RESULTS: ANALYTIC

The descriptive results above showed that the more the societal diversity of religiosity, the less compelling do individuals find conventional personal morality, and moreover that this holds for devout individuals and secular individuals, and the whole range in between. But it remains possible that some other social force accounts for this apparent negative relationship, that what we have discovered is only a spurious correlation. To find out, we turn to a multilevel analysis with individual-level controls and important societal-level controls.

Basic Linear Model

We start with a simple analysis modelling an individual's attachment to conventional personal morality as a function of both contextual (macro-level) and individual characteristics.

The predictor variables measuring the individual's national context (macro level) are the diversity of religiosity in their society as measured by the standard deviation of individual-level religiosity in that society (our focal predictor), their society's mean religiosity, and their society's socioeconomic development (as indexed by the GDP per capita at parity purchasing power). Socioeconomic development has a strong connection with many aspects of religion (e.g., Inglehart and Baker 1997) and the postmaterialist thesis implies a strong connection with conventional personal morality, so it is important to filter out its effects to obtain a purer measure of the effects of diversity. The society's mean level of religiosity is an important control variable because including it ensures that the effects we find for diversity are not inflated by proxying for level of religiosity, specifically that diversity is not a proxy for secularization.

The predictor variables measuring the characteristics of the individual (micro-level) are their religiosity, their age, their education and their gender. Prior research has demonstrated the influence of the individual-level variables (Adamczyk 2013; D'Alessandro, Peltier, and Dahl 2011; Evans, Zanjani, and Kelley 2005; Evans and Kelley 2003; Finke and Adamczyk 2008; Haidt 2008; Kelley and Evans 1996; Peters et al. 2007; Scheepers and Van der Slik 1998; Sikora 2009; Toumey 2011), so it is important to control them in order to obtain as pure a measure of the impact of diversity as possible.

In Table 4, each column represents a model with a somewhat different specification of diversity (and all have the full set of control variables mentioned earlier). Model 1, the simplest model in the table below, gives the linear specification with no curvature and no interactions. The coefficients in these multilevel models have exactly the same interpretation as metric coefficients in ordinary least squares regression.

National-level diversity in religiosity has a large effect on individuals' conventional personal morality: On average, each unit increase in national-level diversity in religiosity (which ranges from about 3 to about 30) is associated with a 0.6 decrease in individual-level endorsement of conventional personal morality (on a 0 to 100 range), net of other influences (Model 1 in Table 4). This effect is statistically significant at $p < .001$ for the regression coefficient. This implies, for example, that an individual living in an average diversity country (near 20 in diversity) like the United States would be expected to rate about 6 points out of 100 lower on the conventional personal morality scale than their peer in a low diversity country like the Philippines or Egypt. In turn, an individual living in a high diversity country (near 30 in diversity) like France, would be expected to rate about 6 points lower on the conventional personal morality scale than their peer in an average diversity country.

In terms of our hypotheses, the decline in endorsement of conventional personal morality as diversity in religiosity increases revealed in Model 1 is consistent with the Contact Hypothesis that a context of diversity undermines the view that there is one best way for everybody and hence, specifically, weakens endorsement of conventional personal morality. Its magnitude

Table 4: Multilevel model of influence of country-level diversity of religiosity on individual-level endorsement of conventional personal morality, net of other influences, linear (Column 1), linear augmented with interaction with individual-level level of religiosity (Column 2), and linear and interaction augmented with curvature (Column 3). WVS and EVS Waves 1–6

	Model predicting conventional personal morality		
	Linear (1)	Linear plus interactions (2)	Linear plus interactions plus curvature (3)
Diversity (<i>SD</i> of individual level religiosity in the nation)			
Diversity	-0.623***	-0.896***	-2.531***
Interaction:			
Diversity × religiosity	—	0.00350***	0.0263***
Curvature:			
Diversity squared	—	—	0.0344**
Diversity ² × religiosity	—	—	-0.000512***
Significance of diversity:	Chi-sq = 26 <i>p</i> < .001	Chi-sq = 134 <i>p</i> < .001	Chi-sq = 249 <i>p</i> < .001
Religiosity			
Individual-level religiosity	0.266***	0.180***	-0.0610*
Country-level religiosity	-0.0648	-0.0582	-0.0692
Controls			
Age	0.132***	0.131***	0.131***
Education	-0.523***	-0.527***	-0.528***
Male	0.511***	0.498***	0.503***
GDP per capita	-18.27***	-18.21***	-18.12***
(intercept)	77.24***	83.79***	103.1***
<i>R</i> ²	.263	.265	.265
rho	.104	.104	.104
Number of cases	311,378	311,378	311,378
Number of surveys	232	232	232

**p* < .05,

***p* < .01,

****p* < .001.

is more consistent with the Contact Hypothesis than the Rupture Hypothesis (which suggests an extremely sharp decline). The direction of this effect is in the opposite direction to that predicted by the Threat Hypothesis, a result aligned with the descriptive evidence we considered earlier.

Model 1 in Table 4 also provides evidence that diversity in religiosity is not the same as secularization. More specifically, the effect of national diversity in religiosity on individuals' endorsement of conventional personal morality is substantial, significant and negative from the beginning in the simple Model 1, as shown by the metric regression coefficient of -0.623, even controlling for the influences of all the other variables in the model. By contrast, the regression coefficient for national mean religiosity level is very small and not statistically significant. Consider a counter-factual. If, instead, we had found that the strong bivariate relationship between national-level diversity in religiosity and individuals' endorsement of conventional

personal morality dwindled into insignificance in a multivariate model controlling for the effect of national-level religiosity, that would have suggested that the apparent effect of diversity was merely a “side effect” of secularization and that secularization was the real driving force of endorsement of conventional personal morality. By contrast, the evidence in Table 4—that diversity in religiosity has a large effect on individuals’ endorsement of conventional personal morality even controlling for the potential influence of national-level religiosity (as well as other potential influences)—has the important implication that diversity in religiosity is a social force in its own.

More Complex Models Allowing Interactions and Curvature

Let us turn next to the more complex specifications in Models 2 and 3 (Table 4, above). Model 2 extends the analysis from Model 1 by allowing the diversity effect on morality to differ by individual-level religiosity. In this specification, no single number represents the effect of national-level diversity, because its influence is seen both through the linear term and the interaction, but it is noteworthy that the joint effect of national diversity and individual-level religiosity is significant in Model 2. Similarly, in Model 3, which allows both interactions and curvature in the functional form of the relationships, the joint effect of diversity and its interactions is again highly statistically significant. We will turn next to the shape and magnitude of these effects, which are much easier to examine graphically as the coefficients cannot correctly be interpreted one by one.

Figure 8 presents the confidence bands providing a visualization of the effects of diversity in religiosity on endorsement of conventional personal morality from Table 4 for individuals whose religiosity is in the top 10 percent in the world (blue), individuals whose religiosity is in the middle 80 percent (green), and individuals whose religiosity is in the bottom 10 percent in the world (red). These are the predicted values from a whole-population standardization as described in the “Method” section. The three groups are for convenience of visualization only (strength of religious belief is religiosity, of course, is a quantitative variable), and other groupings would show the same pattern.

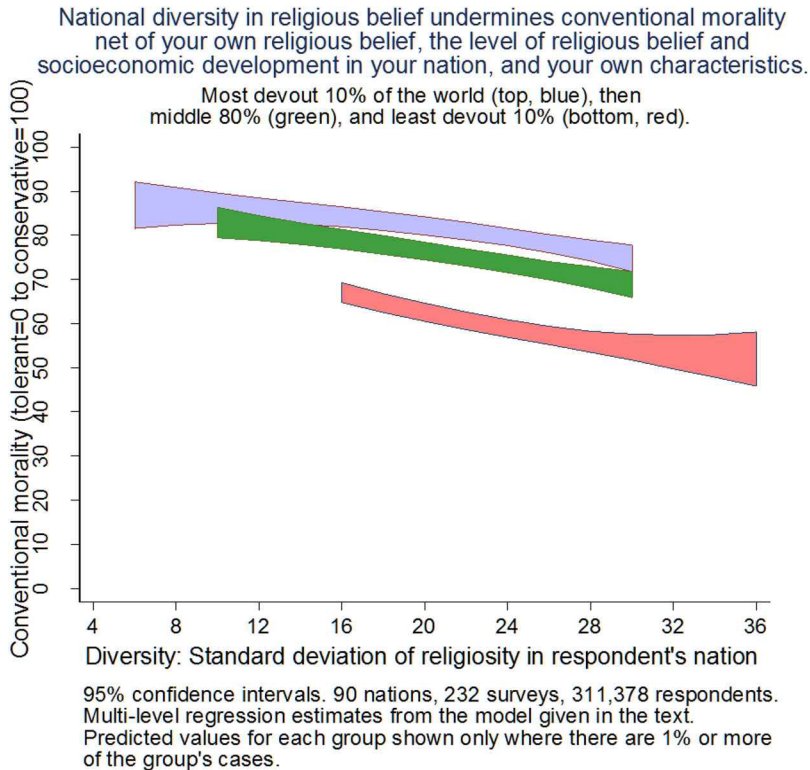
Individuals with very high religiosity (top band, blue, Figure 8) tend strongly to endorse to conventional personal morality, but there is a nearly linear decline in their endorsement of conventional personal morality with increasing diversity in religiosity of their society (macro-level). It is important to remember that this relationship holds completely apart from secularization (macro-level religious belief is controlled in the model), from the nation’s socioeconomic development, and from individuals’ age, gender, and education.

Individuals of middling religiosity (green band in the center) also show strong adherence to conventional personal morality in homogeneous societies (see where the confidence bands overlap on the left). Among these individuals, there is an almost linear decline with a slightly steeper weakening of that endorsement with increasing societal diversity in religiosity.

Finally, individuals who are unusually low in individual religiosity (bottom 10 percent worldwide, red band at the bottom) are a little more distinctive. They begin in the least diverse societies with a 10 to 15 points out of 100 lower attachment to conventional personal morality than their peers with middle or high levels of religiosity (compare the bottom red band to the blue and green bands at diversity levels around 16). In societies increasingly heterogeneous in religiosity societies, people who are especially low in individual religiosity have increasingly lower attachment to conventional personal morality. Thus, national diversity in religiosity—the religious context (macro level)—is associated with weakened attachment to conventional personal morality for individuals throughout the religiosity spectrum.

Figure 8

Effects of national diversity in religiosity (macro level) on individuals' conventional personal morality (micro level), net of the individual's own religiosity, the level of religiosity and socioeconomic development in their nation, and the individual's own characteristics for 3 groups: individuals with the highest religiosity (top 10%, blue), individuals with middling religiosity (central 80%, green), and the lowest religiosity (bottom 10%, red) [Color figure can be viewed at wileyonlinelibrary.com]



For readers who would be interested in the impact of diversity on each of the elements of conventional personal morality separately, the Appendix provides Model 3, estimated separately for attitudes on abortion, prostitution, divorce, euthanasia, and suicide.

DISCUSSION

Some societies are very homogeneous in religiosity, with the vast majority of their members having similar feelings about how central religion is to their lives, whereas other societies are very heterogeneous with their members being very diverse in their religiosity, and other are in between. This paper describes that spectrum and assesses hypotheses about the impact of those contexts on individuals, asking, "How and how strongly does the diversity of religiosity of one's society shape an individual's stance on conventional personal morality?"

These results reveal that societies differ strongly in their diversity in religiosity, as well as in better known aspects of religion: Some are very homogeneous in religiosity (like the Philippines or Egypt), others are a bit more diverse (like Brazil, Poland, or India), others have an

average level of diversity (like Argentina, Japan, the United States, or Vietnam), and yet others are highly diverse (like France, Hungary, South Korea, or Uruguay). Moreover, individuals in societies that are homogeneous in religiosity have much stronger attachment to conventional personal morality than do closely similar individuals in societies that are highly diverse in religiosity, like Germany, New Zealand, or Slovenia. These relationships are evident in the descriptive analyses and continue to hold in multilevel models controlling for potentially confounding influences.

The forms of the relationships in the results have clear implications for the hypotheses. Let us consider the nature of the relationship more closely.

The Contact Hypothesis, derived by analogy from key work on ethnic and racial prejudice (Allport 1979 [1954] and the literature flowing from that), predicts that the social context of diversity in religiosity will shape individuals' endorsement of conventional morality. Specifically, individuals living in societies where religiosity is diverse—with some people feeling that religion is central to their lives, others finding religion less central, and yet others finding it irrelevant—will have lower endorsement of conventional personal morality. The results strongly support this expectation: The higher the diversity of religiosity in the society, the lower the individuals' endorsement of conventional personal morality. This holds both for the descriptive results and for all three variants of a multilevel model. The decline is slightly curved, but not sharp.

The Rupture Hypothesis, derived by analogy from the Asch conformity experiments, also predicts a negative relationship between societal diversity in religiosity and individuals' endorsement of conventional morality, but it predicts a steep and sudden decline with even relatively small rises in diversity than the Contact Hypothesis. The Expectation States version of the decline makes a similar prediction, but at a later starting point. The prediction of decline is consistent with the evidence, but the anticipated sudden onset of decline and steepness of descent thereafter is contrary to the evidence. Instead, we see a gradual decline across the whole spectrum of diversity.

The Threat Hypothesis derived from Blumer's work predicts that increasing societal diversity in religiosity will stimulate individuals to endorse conventional personal morality more strongly. The evidence says otherwise. Neither in the descriptive results, nor in any of the three specifications of the multivariate results do we see individuals' endorsement of conventional personal morality (micro level) rising as societal diversity in religiosity (macro level) rises. Higher societal diversity in religiosity is not associated with stronger individual endorsement of conventional personal morality. These results strongly undermine the Threat Hypothesis. Variants of the Threat Hypothesis might have anticipated a linear rise, or a sharp uptick which would have been captured by the model allowing curvature, but both of those expectations are contrary to the evidence. Instead of endorsement of conventional personal morality being stronger among societies that have higher diversity in religiosity, we find the opposite.

The relationship that we find implies that the hostility of intolerant subcultures to a society diverse in religiosity cannot be cured by liberal tolerance. The problem is that such subcultures are actually threatened by tolerance and by the diversity that tolerance breeds. Looking at things from the other end, in a relatively secular society, religious revival—insofar as it reduces diversity of religiosity—may pose strong dangers of rising intolerance to lifestyle diversity.

We have seen that the experience of diversity in religiosity loosens the grip of conventional personal morality, net of personal religiosity. But exposure to diversity does not explain all current trends, for example, the surge in Muslim religious observance among second-generation immigrants in the Netherlands (Maliepaard, Gijsberts, and Lubbers 2012).

These results also help clarify an underlying current towing strongly religious people in the direction of imposing strong religious observance on others: Uniformity in religiosity would

reduce the threat to conventional personal morality posed by diversity. Conversely, attempts to define the public sphere as religiously neutral intrinsically threaten conventional personal morality: As soon as religion is not enveloping and inescapable, the possibility of “unreligion” exists and the very presence of secular fellow citizens tolerant of an array of moral views undermines the force of conventional personal morality.

What about alternative bases for mechanical solidarity? It makes sense to go beyond the “either/ or” approach to mechanical and organic solidarity and to consider instead potential blends of the two. Perhaps we should consider alternative bases of mechanical solidarity, the common foundations that would be healthy and productive for our emerging societies. What are the constellations of common experiences, challenges, goals, and consensus on processes that will enable us to face the future with all its promise and terrors without falling back on the easy answers of ethnicity, religiosity or affiliation, and authoritarianism?

Turning to the future, the supported Contact Hypothesis that the data allowed us to test concerns the total effect of the diversity of religiosity on endorsement of conventional personal morality. But it remains for future research and new data to test the mechanism through which it is expected to work: personal and possibly also second-hand encounters with people who differ in religiosity. These encounters do not necessarily have to involve close friends or kin—casual acquaintances using secular versus religious greeting and parting phrases, people at work or in the shop displaying their degree of religiosity by the presence or absence of religiosity-associated jewelry or clothing. According to the contact hypothesis, the diversity of religiosity will affect the prevalence of these encounters, and the prevalence of these encounters, in turn, will affect individuals’ endorsement of conventional morality. This would require data on the degree to which people living in societies that are more diverse in religiosity actually encounter individuals some of whom are more religious and others less and also, on those same individuals, how much they endorse conventional personal morality. If it were common that societies were highly spatially and social segregated by religiosity, it is very unlikely that the diversity effects found here would exist. But direct evidence and measurement would make that much more certain.

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APPENDIX

Appendix Table: National diversity in religiosity for conventional morality items separately. Model 3 from Table 4 (linear plus interactions, plus curvature) applied separately to individual items in the conventional morality scale. The items are worded so that the most opposed, traditional and thus conventional answers (“never justifiable”) are low and the most tolerant and accepting (“always justifiable”) are high. (The conventional personal morality scale used in the analysis in text is scored the other way around.)

	How justifiable? (never = 0 through always = 100): Positive coefficient indicates greater tolerance				
	Prostitution (1)	Abortion (2)	Divorce (3)	Euthanasia (4)	Suicide (5)
Diversity (SD of individual level religiosity in the nation)					
Diversity	1.669*	4.058***	3.387***	4.077***	0.438
Cross-level interaction:					
Diversity × religiosity	-0.023***	-0.037***	-0.030***	-0.029***	-0.009**
Curvature:					
Diversity squared	-0.012	-0.057***	-0.056***	-0.080***	0.009
Diversity ² × religiosity	0.000	0.001	0.001	0.001	0.000
Religiosity					
Individual-level religiosity	0.087*	0.141***	0.042	0.015	-0.013
Country-level religiosity	0.288***	0.008	0.171**	-0.124*	0.024
Other control variables					
Age	-0.175***	-0.107***	-0.153***	-0.135***	-0.096***
Education	0.299***	0.689***	0.822***	0.586***	0.269***
Male	3.159***	-2.221**	-2.368***	-0.267*	-0.529***
GDP per capita at PPP	20.876***	12.809***	22.831***	17.502***	13.855***
(Intercept)	-23.988**	-13.783	-2.955	8.150	7.627
Predicted values, all else equal ^a :					
in low-diversity nations	9	17	33	25	11
in high-diversity nations	25	37	48	35	18
Difference: High – Low	16***	19***	15***	10***	8***
N	274,094	297,898	301,662	280,699	291,648

^aPredicted value for otherwise typical respondents living in nations with LOW diversity (SD = 11, as in the Philippines) and predicted value for those in HIGH diversity nations (SD = 29, as in Britain or France). See Figure 3.
 * Significance of diversity, Chi-sq: * $p < .05$, ** $p < .01$, *** $p < .001$.

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