Demographic Correlates of Moral Differences in the Contemporary United States

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Bourdieu argued that cultural tastes have tangible social and economic consequences. Some work suggests that moral differences might have similar effects, but it is not yet clear how morality is distributed across the social landscape, and hence where moral variation is likely to occur. This research note examines the relationships between several well-established morality measures and an extensive set of demographic variables using Bayesian model averaging (BMA), a statistical technique that better captures uncertainty in parameter estimates. Results show that gender, age cohort, and religious affiliation predict the widest range of moral constructs, followed by education and marital status. Comparison with earlier work suggests that gender, age, and religious affiliation are important predictors of morality generally.

One of Pierre Bourdieu's lasting legacies is the recognition that seemingly idiosyncratic and inconsequential cultural tastes are neither idiosyncratic nor inconsequential. Rather, personal cultural capital is what allows some people to interact easily with high status others and to gain access to valued social and economic rewards (Bourdieu 1984, 1986). Although those in positions of power usually unconsciously favor those with similar forms of capital, the process can also be intentional (Lamont 1992; Rivera 2012).

A number of scholars have extended this line of thinking, noting that individuals also make distinctions along moral lines (Fourcade and Healy 2007; Graham and Haidt 2012; Lamont 1992, 2012; Lamont et al. 1996; Prasad et al. 2009). As with other forms of differentiation, moral distinctions can lead to misunderstandings, reduced empathy, and even differential evaluations of worth, which in turn can create uneven access to social, economic, and political rewards (Ditto and Koleva 2011; Liu and Ditto 2013; Prasad et al. 2009; Sayer 2010). These disparities in access are likely to be systematic to the extent that social divisions pattern moral differences. This makes it important to determine how moral worldviews are distributed across the social landscape.

Recently, scholars have argued that morality depends on a variety of factors including evolved psychological intuitions, cultural socialization, and personal experiences (Graham et al. 2013; Greene 2013; Sayer 2010). Although intuitions generally provide a common "first draft" of morality, different cultural, sub-cultural, and personal experiences heavily revise this initial material, leading to a wide variety of moral outlooks (Graham et al. 2013:61). Bourdieu (1990) argued that socializing experiences vary by social location, and work together to form dispositions that shape subsequent thought, perception, and action (i.e., the habitus). Consistent with work on morality, these dispositions often have a moral character, giving individuals a sense for what is right or wrong, worthless or worth striving for (Bourdieu 1984; Ignatow 2009; Vaisey 2009). The result is that differences in moral dispositions are likely to run along lines of prominent social distinctions, such as race, class, gender, and socioeconomic status (c.f., Marsh 2009; Sayer 2010).

Morally formative experiences are also likely to vary by other socio-demographic characteristics. For example, participation in a religious group can create a sense of moral order, and embed individuals in dense social networks that provide opportunities and support for moral action (Bader and Finke 2010; Durkheim 1995 [1912]). The contours of this shared morality vary by the religious tradition and religious and/or political ideology that characterize a given religious community (Putnum and Campbell 2010; Wuthnow 1988). Local or regional sub-cultures might also predict moral norms and behaviors; in the United States, for instance, the South is associated with both high levels of religiosity and – among whites males – participation in a "culture of honor" that emphasizes both positive and negative forms of reciprocity (Cohen et al. 1996; Leung and Cohen 2011; Putnum and Campbell 2010). Moral understandings might also vary with age, both because age captures cohort-based variations in life experiences (e.g., coming of age in the 1960s), and because individuals' concerns may shift in patterned ways as they move through the life course (Danigelis et al. 2007; Harding and Jencks 2003). Personal experiences, too, are likely to play a role. Major life events such as marriage, divorce, or loss of employment can shift a person's social networks and provide support for different types of moral logics and activities (e.g., selecting into or out of religion, see Stolzenberg, Blair-Loy, and Waite 1995).

Initial evidence supports the idea that morality maps in patterned ways onto social and demographic characteristics. Several studies have found that women rate other-centered concerns (e.g., caring for others) more highly than men, and self-focused concerns less highly (e.g., power, achievement; Graham et al. 2011; Longest, Hitlin, and Vaisey 2013; Schwartz et al. 2012). Older cohorts likewise express more concern for others, and additionally place greater importance on conformity to social norms, preserving traditions, and respect for authority than younger cohorts (Koleva et al. 2012; Lamont et al. 1996; Longest et al. 2013). Conformity and tradition are also more important among those who frequently attend religious services, but less salient for those who have attained higher levels of education (Lamont et al. 1996; Longest et al. 2013). Class also plays a role, shaping a variety of values and morality-related social attitudes (Sayer 2010; Weeden and Grusky 2005).

These studies support the claim that morality is socially patterned, but fall short in a number of ways. In many cases, links between morality and demographic characteristics are treated only superficially, as a step towards pursuing analyses with a different focus (e.g., a table of bivariate correlations; c.f., Aquino and Reed 2002; Koleva et al. 2012). Among sociologists, scholars often use attitudes towards specific social issues (e.g., pornography laws) rather than measures of the moral constructs thought to underlie them (e.g., freedom, purity, c.f., Danigelis et al. 2007; Weeden and Grusky 2005). Even within the reviving sociology of morality treatments vary widely in the questions they address and often draw on ad hoc moral frameworks and measures, making systematic comparisons challenging (Hitlin and Vaisey 2013). In contrast, psychologists use established morality scales, but often base their conclusions on convenience samples that potentially limit their generalizability (e.g., Graham et al. 2011; Schwartz et al. 2012). A recent study by Longest and colleagues (2013) is a notable exception to these trends, using both validated measurement instruments and a large, representative data set; however, analyses examine one type of morality (values) and are restricted to European countries. Past work is therefore suggestive, but limited in its scope of application, indicating a need for further research using representative samples and a range of established morality measures.

Operationalizing Morality

In the past decade and a half, scholars have theorized and measured multiple dimensions of morality. In this study, I focus on three aspects that have received considerable attention across disciplines: moral identities, values, and moral foundations. Theoretically, using multiple constructs provides insight into whether demographic characteristics relate only to specific types of morality, or to morality generally. Although these particular constructs do not fully span the moral domain, they represent several of its most important facets (Hitlin 2008; Vaisey and Miles 2014). Moral identities give concrete form to the idea that morality is often (if not always) self-definitional (Hitlin 2008; Smith 2003), and link moral processes to a substantial body of research on self-processes (e.g., Stets and Carter 2012). Values – typically defined as conceptions of the desirable – tap notions of the "good life," while moral foundations capture moral prohibitions and obligations (Vaisey and Miles 2014). Practically, these constructs are attractive because they can be operationalized using validated, well-established measurement instruments that provide an immediate link to a sizable body of existing research.

The moral identity was first developed by psychologists Aquino and Reed and later introduced to sociologists by identity theorists Stets and Carter (Aquino and Reed 2002; Stets et al. 2008). The moral identity assesses the extent to which individuals see themselves as honest, caring, kind, fair, helpful, generous, compassionate, truthful, hard working, friendly, selfless, and principled, and past work suggests that it is a reliable predictor of pro-social behavior (Aquino and Reed 2002; Stets et al. 2008).

Values have been extensively studied by Schwartz and his colleagues (Bilsky, Janik, and Schwartz 2011; Schwartz 1992). Schwartz identified 10 overarching value dimensions: conformity (adherence to norms), tradition (respect for cultural or religious customs), benevolence (care for ingroup members), universalism (care for all people and nature), self-direction (independent thought and action), stimulation (excitement and novelty), hedonism (sensual gratification), achievement (personal success), and power (status or other forms of control). Scholars have demonstrated that these values are present across nearly all cultures, and predict a variety of behaviors, particularly when incorporated into a person's sense of self (Schwartz, Caprara, and Vecchione 2010; Schwartz 2010; Verplanken and Holland 2002).

Finally, Moral Foundations Theory (MFT) posits that morality is based on five fundamental human intuitions that serve as neurological "foundations" on which morality can be built. These include concerns related to harm and care, fairness and reciprocity, loyalty to the ingroup, authority and respect, and purity and sanctity (Graham et al. 2011). MFT has gained notoriety in recent years for its ability to characterize political divisions in the United States (Graham, Haidt, and Nosek 2009). Details of these measures are given below.

The Current Study

This research note addresses the need for a basic understanding of how individual moral differences map onto the socio-demographic landscape. The current treatment extends earlier work on at least three fronts. First, it uses measures of three fundamental dimensions of morality that have seen wide use in the social and behavioral sciences. Using three dimensions in the same study makes it easier to compare results, and allows us to see which socio-demographic characteristics have the strongest and/or most extensive links to morality. Second, this study includes a larger number of predictors than most earlier work, tapping race, gender, geography, family structure, religion, socio-economic status, age cohorts, and employment status. Finally, this study uses Bayesian model averaging (BMA), a methodological technique that better captures uncertainty in parameter estimates than traditional regression, allowing us to be more confident that observed relationships are real.

Methods

Data

Data come from two nationally representative, web-based surveys of the United States population, both collected by Knowledge Networks (KN).[1] As part of their data

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[1] The KN sampling frame covers approximately 97% of US households. Details on sampling procedures (including information on how KN samples hard-to-reach populations) can be found at

collection strategy, KN asks all respondents in their panels to answer a standard set of profile questions. All socio-demographic variables used in this study are taken from these profile data. The advantage of this is that question wording and response options are held constant across surveys, significantly reducing threats to validity. The primary survey comes from the Measuring Morality project, was collected in 2012, had a 61% response rate, and a final sample size of 1,519. The second survey was administered in 2008, had a response rate of 60.1%, and a final sample size of 1,001. For ease of reference, these two data sources will be referred to as sample 1 and sample 2, respectively. Listwise deletion of missing data left 1,483 cases in sample 1, and 878 in sample 2.[2] Descriptive statistics for both samples are given in the online appendix (Table A1).

Socio-Demographic Predictors
      Socio-demographic variables were selected to represent the theoretically relevant divisions described above, and can be grouped into 8 categories. *Race* is captured with three dichotomous variables for blacks, Hispanics, and other/mixed races, with white as the reference category. *Gender* is captured by a single indicator, with females coded 1 and males 0. *Cohort* effects are given by a series of binary variables for the age ranges 25-34, 35-44, 45-54, 55-64, 65-74, and 75 and above, with those aged 18-24 as the reference category. *Socioeconomic status* is represented by income and education. Educational attainment is captured by three indicators: completed high school, completed some college, and graduated college, with those not having completed high school forming the reference category. Income is coded in 19 categories, ranging from "less than $5,000" to "$175,000 or more," and treated as continuous in analyses.[3] *Family* relationships are represented by two dichotomous variables for marital status: married, and divorced/separated, with all others serving as the reference category. *Geographic* differences are coded as binary variables using census regions, with West, South, and Midwest being compared to the Northeast. A single indicator is also included for whether or not respondents live in metropolitan areas. *Employment* status is likewise captured with a single variable, a dichotomous indicator of whether respondents are currently working. Finally, *religion* is captured by a series of mutually exclusive binary variables, based on self-reported religious affiliation. Categories were adapted from the Steensland et al. (2000) typology, though where possible distinct denominations or other sub-categories were kept separate to maximize the probability of detecting meaningful differences (based on sample size). Categories include Baptist, mainline Protestant ("Methodist, Lutheran, Presbyterian, Episcopal"), Catholic, Pentecostal, Other Christian (including Mormons and those self-identifying as other Christians), and

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http://www.knowledgenetworks.com/knpanel/docs/knowledgePanel(R)-design-summary-description.pdf. Composite weights were used in all analyses; these were generated by KN to adjust for differential sampling probabilities, non-response, and sampling coverage problems.
[2] Multiple imputation (MI) is typically a better way of handling missing data than listwise deletion. However, in the present analyses missingness was almost entirely confined to the outcome variables, cases that von Hippel (2007) recommends using during imputation but removing prior to analyses. This means that most of the information gained through MI would be eliminated, making MI results comparable to those obtained using listwise deletion. Listwise deletion also greatly simplifies the model averaging techniques used, and facilitates replication.
[3] These categories are part of the original data received from KN.

Other non-Christian (Jewish, Muslim, Hindu, Buddhist, and those self-identifying as other non-Christian). The reference category includes those who reported no religious affiliation.

Morality Variables

Eleven moral outcomes representing two dimensions of morality are measured in sample 1. I give short descriptions below, and full coding details in the online appendix. *Moral identity* records the extent to which respondents saw themselves as being caring, compassionate, fair, friendly, generous, helpful, hardworking, honest, and kind, measured by level of agreement with a series of ten questions (1=completely disagree to 7=completely agree). A sample item is "Being someone who has these characteristics is an important part of who I am."

Values were measured using Schwartz's Portrait Values Questionnaire (PVQ), a widely validated instrument with sub-scales for each of the ten value domains (Davidov, Schmidt, and Schwartz 2008). Respondents were asked to read statements and report how much the people described sounded like them. Options ranged from 1='Not like me at all' to 6='Very much like me.' Sample items from each sub-scale are: *Conformity* (α = 0.66): It is important to me to always behave properly. I avoid doing anything people would say is wrong; *Tradition* (α = 0.47): Tradition is important to me. I try to follow the customs handed down by my religion and family; *Security* (α = 0.56): It is important to me to live in secure surroundings. I avoid anything that might endanger my safety; *Power* (α = 0.57): It is important to me to be rich. I want to have a lot of money and expensive things; *Achievement* (α = 0.76): It's very important to me to show my abilities. I want people to admire what I do; *Hedonism* (α = 0.73): Having a good time is important to me. I like to "spoil" myself; *Stimulation* (α = 0.72): I think it is important to do lots of different things in life. I always look for new things to try; *Self-direction* (α = 0.54): It is important to me to make my own decisions about what I do. I like to be free and not depend on others; *Universalism* (α = 0.66): I think it is important that every person in the world be treated equally. I believe everyone should have equal opportunities in life; *Benevolence* (α = 0.66): It is important to me to be loyal to my friends. I want to devote myself to people close to me. The mean of all items was subtracted from each sub-scale to adjust for scale response tendencies.

Sample 2 contains measures based on Moral Foundations Theory. In particular, it uses the 20-item version of the Moral Foundations Questionnaire (MFQ20), which includes subscales for each of the five moral foundations. Sample items from each subscale are given below. Respondents were asked to rate their level of agreement with moral statements, using a scale of 0=Strongly disagree to 5=Strongly agree: *Care* (α = 0.51): "Compassion for those who are suffering is the most crucial virtue;" *Fairness* (α = 0.71): " When the government makes laws, the number one principle should be ensuring that everyone is treated fairly;" *Ingroup* (α = 0.51): "It is more important to be a team player than to express oneself;" *Authority* (α = 0.65): "Respect for authority is something all children need to learn;" *Purity* (α = 0.74): "I would call some acts wrong on the grounds that they are unnatural." Consistent with recommended practice, those scoring highly on a "catch" question were coded as missing.

Analytic Strategy

The simplest way to uncover connections between morality and socio-demographic characteristics is to regress morality measures on variables capturing race, gender, age, socio-economic status (SES), family structure, geography, employment status, and religion.

There are two potential concerns with this approach. First, it is possible that any relationships found might be unique to the sample used. At the conventional .05 level of significance, we would expect that 1 out of every 20 relationships would be statistically significant purely by chance. To address this problem, I used Bayesian Information Criterion (BIC) statistics to eliminate unnecessary predictors from each model. BIC statistics measure model fit to the data, but impose a penalty that is proportional to sample size for each variable in a model. This makes them more stringent tests of "significance" than traditional p-values, and improves out-of-sample predictions (Raftery 1995).

This raises a second concern. Inherent in any model selection procedure is the potential for arbitrariness – an analyst can find a single best-fitting model, but it is often only marginally better than one or more alternative models that might have been selected. While these alternative models often yield substantively similar results, this is not always the case (see the example in Raftery 1995:120-124). One solution (and the one used here) is to use Bayesian model averaging (BMA) to average over all models that fall within a pre-specified range of the best-fitting model, weighting by their respective model probabilities. This reduces the uncertainty in estimates that arises from selecting just one model by explicitly accounting for all plausible specifications of a model (Raftery 1995).[4] A number of studies indicate that BMA provides better out-of-sample predictions than procedures that use a single best-fitting model (Hoeting et al. 1999; Raftery, Madigan, and Volinsky 1996); in the present context, this means that findings about morality are more likely to generalize to other samples.

All models presented below are BMA linear regressions with fully standardized coefficients for continuous predictors, and y-standardized coefficients for dichotomous predictors (i.e., a 1 unit increase in the predictor leads to a β standard deviation increase in the outcome). Categorical variables were always selected for inclusion or exclusion as a group to ensure that they could be interpreted in relation to a fixed reference category.

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[4] I used an uninformative prior distribution, and the "symmetric" Occam's Window suggested by Raftery, where I kept all models that were no more than 20 times less likely than the best fitting model (corresponding to a BIC difference of 6).

Table 1: Linear Regression of Morality Variables on Socio-Demographic Characteristics (Sample 1)

Socio-demographic categories		Moral Identity β	SD	p≠0	Conformity β	SD	p≠0	Tradition β	SD	p≠0	Benevolence β	SD	p≠0	Universalism β	SD	p≠0	Self-direction β	SD	p≠0
	(Intercept)	-0.71	(0.12)	100%	-0.56	(0.10)	100%	-0.70	(0.11)	100%	-0.43	(0.10)	100%	-0.34	(0.11)	100%	0.24	(0.08)	100%
Race	Black	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Hispanic	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	other/mixed	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gender	female	0.44	(0.06)	100%	-	-	-	0.02	(0.05)	17%	0.34	(0.06)	100%	0.32	(0.06)	100%	-0.01	(0.04)	10%
Age Cohort	25-34	-	-	-	-	-	-	-	-	-	0.31	(0.12)	100%	0.22	(0.11)	100%	-	-	-
	35-44	-	-	-	-	-	-	-	-	-	0.20	(0.12)	100%	0.36	(0.12)	100%	-	-	-
	45-54	-	-	-	-	-	-	-	-	-	0.53	(0.12)	100%	0.66	(0.12)	100%	-	-	-
	55-64	-	-	-	-	-	-	-	-	-	0.29	(0.12)	100%	0.71	(0.12)	100%	-	-	-
	65-74	-	-	-	-	-	-	-	-	-	0.35	(0.13)	100%	0.70	(0.13)	100%	-	-	-
	75 or above	-	-	-	-	-	-	-	-	-	0.55	(0.16)	100%	0.67	(0.16)	100%	-	-	-
SES	high school	0.19	(0.10)	100%	-	-		-	-	-	-	-	-	-	-	-	-		-
	some college	0.42	(0.11)	100%	-	-		-	-	-	-	-	-	-	-	-	-		-
	BA or beyond	0.46	(0.11)	100%	-	-		-	-	-	-	-	-	-	-	-	-		-
	income	-	-	-	-	-	-	-0.01	(0.02)	10%	-	-	-	-	-	-	-	-	-
Family	divorced/separated	-	-	-	0.12	(0.10)	100%	0.12	(0.10)	100%	-	-	-	-	-	-	-		-
	married	-	-	-	0.39	(0.07)	100%	0.31	(0.07)	100%	-	-	-	-	-	-	-	-	-
Geography	metro area	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-
	Midwest	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	South	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	West	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Employment	working	-0.02	(0.05)	15%	-0.07	(0.09)	45%	-0.12	(0.10)	67%	-0.18	(0.07)	100%	-	-	-	-	-	-
Religion	Baptist	0.34	(0.10)	100%	0.56	(0.10)	100%	0.96	(0.10)	100%	-	-	-	-0.39	(0.10)	100%	-0.26	(0.10)	100%
	Mainline Protestant	0.22	(0.10)	100%	0.43	(0.10)	100%	0.64	(0.10)	100%	-	-	-	-0.41	(0.10)	100%	-0.26	(0.10)	100%
	Catholic	0.08	(0.10)	100%	0.30	(0.09)	100%	0.70	(0.09)	100%	-	-	-	-0.47	(0.09)	100%	-0.28	(0.10)	100%
	Pentecostal	0.47	(0.18)	100%	0.55	(0.18)	100%	0.60	(0.18)	100%	-	-	-	-0.54	(0.18)	100%	-0.47	(0.19)	100%
	other Christian	0.25	(0.11)	100%	0.58	(0.11)	100%	0.63	(0.11)	100%	-	-	-	-0.33	(0.11)	100%	-0.34	(0.11)	100%
	other non-Christian	0.11	(0.16)	100%	-0.02	(0.15)	100%	0.20	(0.15)	100%	-	-	-	-0.36	(0.15)	100%	-0.46	(0.16)	100%
	# models averaged	2			2			6			1			1			2		

Socio-demographic categories		Self-direction β	SD	p≠0	Stimulation β	SD	p≠0	Hedonism β	SD	p≠0	Achievement β	SD	p≠0	Power β	SD	p≠0	Security β	SD	p≠0
	(Intercept)	0.24	(0.08)	100%	0.56	(0.12)	100%	0.75	(0.13)	100%	0.60	(0.12)	100%	0.41	(0.13)	100%	-0.80	(0.12)	100%
Race	Black	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Hispanic	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	other/mixed	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gender	female	-0.01	(0.04)	10%	-0.20	(0.06)	100%	-0.08	(0.09)	47%	-0.26	(0.06)	100%	-0.33	(0.06)	100%	0.26	(0.06)	100%
Age Cohort	25-34	-	-	-	-0.24	(0.12)	100%	-0.18	(0.13)	100%	-0.18	(0.12)	100%	-0.02	(0.12)	100%	0.18	(0.12)	100%
	35-44	-	-	-	-0.31	(0.13)	100%	-0.28	(0.13)	100%	-0.42	(0.12)	100%	-0.30	(0.13)	100%	0.43	(0.12)	100%
	45-54	-	-	-	-0.47	(0.13)	100%	-0.36	(0.14)	100%	-0.72	(0.12)	100%	-0.47	(0.13)	100%	0.39	(0.12)	100%

Category	Variable	β	SD	p≠0	β	SD	p≠0	β	SD	p≠0	β	SD	p≠0	β	SD	p≠0	β	SD	p≠0
	55-64	-	-	-	-0.50	(0.12)	100%	-0.45	(0.13)	100%	-0.58	(0.12)	100%	-0.44	(0.12)	100%	0.55	(0.12)	100%
	65-74	-	-	-	-0.65	(0.14)	100%	-0.45	(0.15)	100%	-0.70	(0.13)	100%	-0.59	(0.13)	100%	0.72	(0.13)	100%
	75 or above	-	-	-	-0.63	(0.15)	100%	-0.57	(0.17)	100%	-0.62	(0.16)	100%	-0.67	(0.16)	100%	0.60	(0.16)	100%
SES	high school	-	-	-	-0.08	(0.10)	100%	0.00	(0.03)	2%	-	-	-	-	-	-	-	-	-
	some college	-	-	-	0.16	(0.10)	100%	0.00	(0.03)	2%	-	-	-	-	-	-	-	-	-
	BA or beyond	-	-	-	0.20	(0.10)	100%	-0.01	(0.07)	2%	-	-	-	-	-	-	-	-	-
	income	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-0.14	(0.03)	100%
Family	divorced/separated	-	-	-	-0.06	(0.10)	100%	-0.10	(0.11)	98%	-	-	-	-	-	-	-	-	-
	married	-	-	-	-0.21	(0.07)	100%	-0.25	(0.08)	98%	-	-	-	-	-	-	-	-	-
Geography	metro area	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.01	(0.04)	6%
	Midwest	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	South	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	West	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Employment	working	-	-	-	-	-	-	0.03	(0.07)	22%	0.26	(0.07)	100%	0.20	(0.09)	89%	-0.01	(0.03)	7%
Religion	Baptist	-0.26	(0.10)	100%	-	-	-	-0.34	(0.11)	100%	-0.34	(0.10)	100%	-0.33	(0.10)	100%	0.46	(0.10)	100%
	Mainline Protestant	-0.26	(0.10)	100%	-	-	-	-0.32	(0.11)	100%	-0.12	(0.10)	100%	0.19	(0.10)	100%	0.19	(0.10)	100%
	Catholic	-0.28	(0.10)	100%	-	-	-	-0.22	(0.10)	100%	-0.02	(0.00)	100%	0.02	(0.10)	100%	0.33	(0.10)	100%
	Pentecostal	-0.47	(0.19)	100%	-	-	-	-0.11	(0.19)	100%	-0.11	(0.18)	100%	0.05	(0.18)	100%	0.14	(0.18)	100%
	other Christian	-0.34	(0.11)	100%	-	-	-	-0.32	(0.11)	100%	-0.32	(0.11)	100%	-0.10	(0.11)	100%	0.23	(0.11)	100%
	other non-Christian	-0.46	(0.16)	100%	-	-	-	0.09	(0.16)	100%	0.07	(0.15)	100%	0.52	(0.15)	100%	0.02	(0.15)	100%
	# models averaged	2			1			5			1			2			3		

Note: β = standardized or semi-standardized (for dichotomous variables) estimates; SD = standard deviation of the estimate; "p≠0" = probability that the variable is not 0, (i.e. that it improves model fit)

Table 2: Linear Regression of Morality Variables on Socio-Demographic Characteristics (Sample 2)

Socio-demographic categories		Harm			Fairness			Ingroup			Authority			Purity		
		β	SD	p≠0	β	SD	p≠0	β	SD	p≠0	β	SD	p≠0	β	SD	p≠0
	(Intercept)	-0.08	(0.15)	100%	-0.37	(0.14)	100%	-0.30	(0.12)	100%	-0.49	(0.13)	100%	-0.64	(0.16)	100%
Race	Black	0.44	(0.13)	100%	-	-	-	-	-	-	-	-	-	-	-	-
	Hispanic	0.10	(0.12)	100%	-	-	-	-	-	-	-	-	-	-	-	-
	other/mixed	0.16	(0.17)	100%	-	-	-	-	-	-	-	-	-	-	-	-
Gender	female	0.45	(0.08)	100%	0.16	(0.13)	69%	-	-	-	-	-	-	0.21	(0.10)	89%
Age Cohort	25-34	-	-	-	0.18	(0.16)	100%	0.23	(0.15)	100%	0.42	(0.16)	100%	0.00	(0.15)	100%
	35-44	-	-	-	0.06	(0.16)	100%	0.08	(0.15)	100%	0.32	(0.16)	100%	-0.07	(0.15)	100%
	45-54	-	-	-	0.37	(0.16)	100%	0.33	(0.15)	100%	0.60	(0.16)	100%	0.15	(0.15)	100%
	55-64	-	-	-	0.46	(0.16)	100%	0.43	(0.16)	100%	0.44	(0.17)	100%	0.32	(0.15)	100%
	65-74	-	-	-	0.58	(0.19)	100%	0.77	(0.18)	100%	0.90	(0.19)	100%	0.65	(0.18)	100%
	75 or above	-	-	-	0.49	(0.20)	100%	0.78	(0.19)	100%	0.84	(0.20)	100%	0.74	(0.18)	100%
SES	high school	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	some college	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	BA or beyond	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	income	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Family	divorced/separated	-	-	-	-	-	-	-	-	-	-	-	-	0.01	(0.06)	5%
	married	-	-	-	-	-	-	-	-	-	-	-	-	0.01	(0.06)	5%
Geography	metro area	0.06	(0.11)	25%	-	-	-	-	-	-	-	-	-	0.02	(0.06)	9%
	Midwest	-0.15	(0.12)	100%	-	-	-	-	-	-	-	-	-	-	-	-
	South	-0.28	(0.11)	100%	-	-	-	-	-	-	-	-	-	-	-	-
	West	-0.43	(0.12)	100%	-	-	-	-	-	-	-	-	-	-	-	-
Employment	working	-	-	-	-	-	-	-	-	-	-	-	-	0.00	(0.03)	5%
Religion	Baptist	-	-	-	-	-	-	-	-	-	-	-	-	0.61	(0.13)	100%
	Mainline Protestant	-	-	-	-	-	-	-	-	-	-	-	-	0.29	(0.13)	100%
	Catholic	-	-	-	-	-	-	-	-	-	-	-	-	0.35	(0.13)	100%
	Pentecostal	-	-	-	-	-	-	-	-	-	-	-	-	0.62	(0.23)	100%
	other Christian	-	-	-	-	-	-	-	-	-	-	-	-	0.29	(0.14)	100%
	other non-Christian	-	-	-	-	-	-	-	-	-	-	-	-	0.06	(0.19)	100%
	# models averaged	2			2			1			1			5		

Note: β = standardized or semi-standardized (for dichotomous variables) estimates; SD = standard deviation of the estimate; "p≠0" = probability that the variable is not 0, (i.e. that it improves model fit)
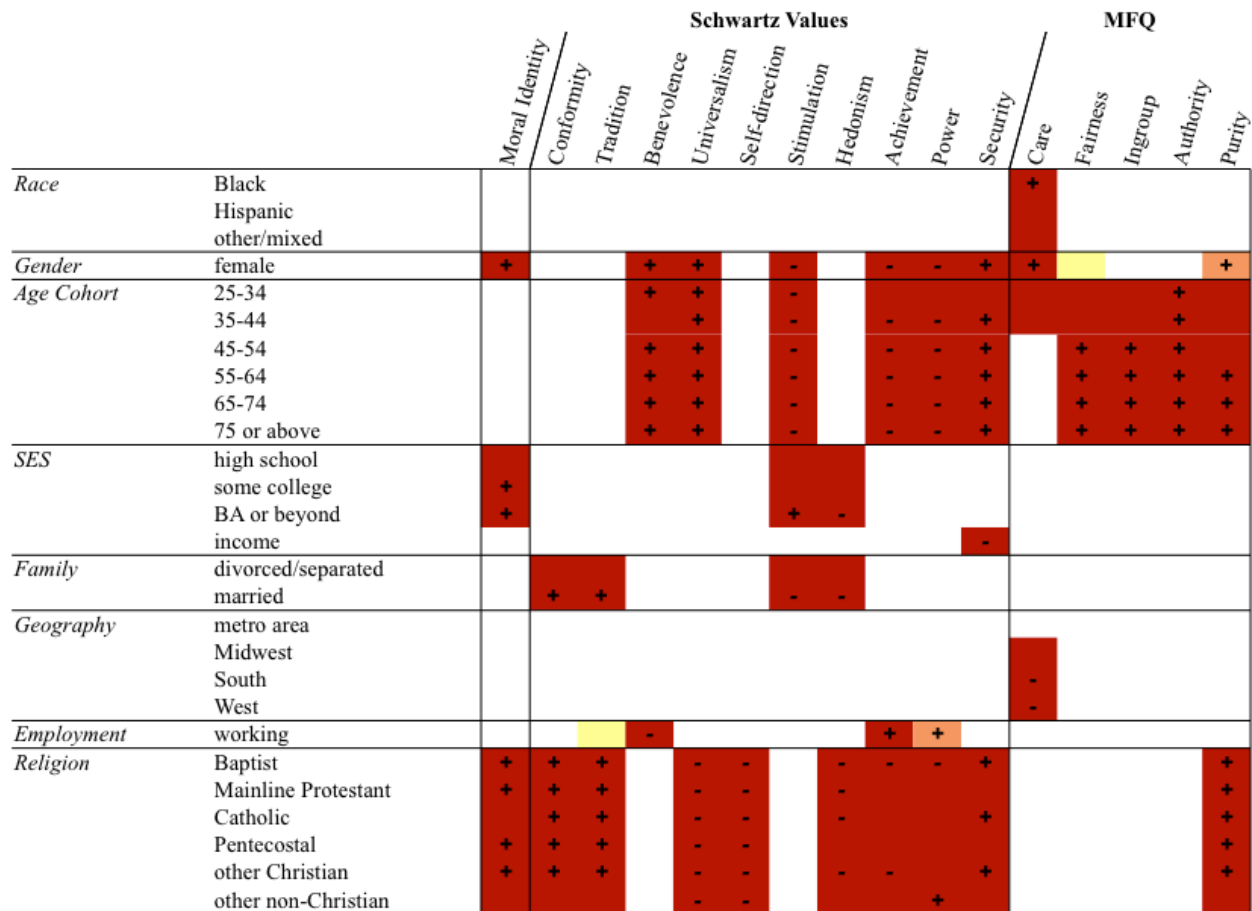
Results

Table 1 shows the results from BMA linear regressions of moral identity and the ten value dimensions on the set of socio-demographic predictors, and Table 2 presents the same analyses for the five MFQ-20 sub-scales. Moral constructs are listed along the top, and under each are three columns. The first two columns provide the model-weighted mean and standard deviation (SD) of each parameter's posterior distribution – substantively, these can be regarded as parameter estimates and standard errors. The third column gives the probability that each parameter is non-zero, given the models that were retained by the BMA procedure (labeled "p≠0"). For example, a 100% next to a variable suggests it was retained in all of the models used to predict a given outcome. Practically, this can be interpreted as the probability that adding the variable to the model improves its fit to the data (as judged by a BIC statistic). Stated another way, a variable's probability (third column) tells us *whether* a variable belongs in the model, while the mean and SD (first and second columns) give us information about *how* a variable relates to the outcome by defining the distribution of its coefficient.
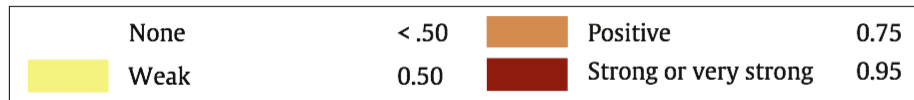
Tables 1 and 2 contain a great deal of detailed information, and I include them mainly for reference. To ease interpretation and highlight overarching patterns, I turn to Figure 1. Figure 1 is a "heat map" of the results shown in Tables 1 and 2, where darker coloring represents a greater probability that the indicated variable belongs in the model (taken from the "p≠0" columns). Following Raftery (1995), if a variable had at least a 50% probability of inclusion, I regarded this as "weak" evidence that it has a real relationship with the outcome. Similarly, I viewed a 75% probability or above as "positive" evidence, and a 95% or above as "strong" evidence. Of course, simply knowing that a variable belongs in the model does not tell us how it relates to the outcome – this information comes from the distribution of its estimate. In cases where estimates were at least twice as large as their standard deviations – that is, where the direction of the relationship was clear – I also included a plus or minus sign to indicate the direction of the observed relationship.[5]

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[5] It is worth noting that although those variables with high probabilities of inclusion typically also have clear relationships with the outcome, the two do not map perfectly on to one another. For instance, categorical variables were separated into their constituent categories for analysis, yielding one estimate and SD for each category (except the reference category), but selection for inclusion occurred just once, for the variable as a whole. This means that certain variables (like religious affiliation or educational attainment) might be judged strongly predictive of an outcome as a whole even though some of their categories have estimated relationships that are indistinguishable from 0.

Figure 1: "Heat Map" of Evidence for Relationships Between Morality and Socio-Demographic Characteristics, including Direction of Relationship

		Moral Identity	Conformity	Tradition	Benevolence	Universalism	Self-direction	Stimulation	Hedonism	Achievement	Power	Security	Care	Fairness	Ingroup	Authority	Purity
			Schwartz Values										MFQ				
Race	Black												+				
	Hispanic																
	other/mixed																
Gender	female	+			+	+		-		-	-	+	+	(weak)			+
Age Cohort	25-34				+	+		-								+	
	35-44					+		-		-	-	+				+	
	45-54				+	+		-		-	-	+		+	+	+	
	55-64				+	+		-		-	-	+		+	+	+	+
	65-74				+	+		-		-	-	+		+	+	+	+
	75 or above				+	+		-		-	-	+		+	+	+	+
SES	high school																
	some college	+															
	BA or beyond	+						+	-								
	income										-						
Family	divorced/separated																
	married		+	+				-	-								
Geography	metro area																
	Midwest																
	South												-				
	West												-				
Employment	working			(weak)	-					+	+						
Religion	Baptist	+	+	+		-	-		-	-	-	+					+
	Mainline Protestant	+	+	+		-	-		-								+
	Catholic		+	+		-	-		-			+					+
	Pentecostal	+	+	+		-	-										+
	other Christian	+	+	+		-	-			-	-	+					+
	other non-Christian					-	-				+						

Strength of Evidence (i.e., p(β)≠0)

	None	< .50	(orange) Positive	0.75
(yellow)	Weak	0.50	(dark red) Strong or very strong	0.95

Note: Plus and minus signs indicate the direction of any relationship that is at least 2 SD away from 0. Shading represents the level of evidence for the claim that a parameter is not equal to 0 (i.e., that it is ever retained in the model using the BIC statistic).

Figure 1 indicates that gender, age cohort, and religious identification each predict 10 of the 16 moral outcomes, more than any other socio-demographic variables. In particular, women score more highly on moral identity than men, and place greater emphasis on benevolence, universalism, security, care, and possibly purity, but less emphasis on stimulation, achievement, and power. The pattern of results is very similar for age cohorts, with older individuals placing more importance on benevolence, universalism, security, and purity concerns, and less on stimulation, achievement, and power. In addition, older cohorts place greater emphasis on fairness, ingroup loyalty, and authority than do younger cohorts.

The results for religion are more complicated. Compared to those with no religion, affiliation with most religious groups predicts higher moral identity, conformity, tradition,

and purity concerns – the notable exceptions are non-Christians, who are not significantly different from those professing no religion in any of these categories. Religious affiliation also predicts lower value placed on universalism and self-direction, and for all groups except Pentecostals and non-Christians, lower hedonism as well. Specific religious traditions likewise predict various other moral values. Baptists and other Christians express less interest in achievement than the non-religious, and Baptists are likewise less interested in power. Additionally, Baptists, Catholics, and other Christians value security.

Moral outcomes also map onto other socio-demographic characteristics, but in a more selective fashion. Active employment seems to predict benevolence, achievement, and power, while marriage predicts greater conformity and tradition and less stimulation and hedonism. Results also suggest that education matters, though only those with at least a four-year college degree are noticeably different from those who did not complete high school. These individuals report a higher moral identity, more concern with stimulation, and lower value placed on hedonism.

The patterns apparent in Figure 1 are also interesting in what they do *not* include. Noticeably absent are consistent associations with race, income, and geographic location. These analyses suggest blacks, Hispanics, and those of other or mixed races generally share the same moral concerns as whites (net of other factors), though blacks do score more highly on care concerns. Income also has surprisingly little to do with morality, predicting only lower concern about security.

Discussion

Scholars have claimed that moral boundaries can affect social, economic, and political outcomes (Lamont 2012), suggesting a need to understand moral differences, yet few have systematically examined the ways that morality might map onto the socio-demographic landscape. Such connections seem probable when we consider that life experiences – including morally formative experiences – vary systematically by social location. This study addresses the need for a basic description by linking 16 well-established measures of morality from three research traditions to a wide range of socio-demographic predictors, and by using Bayesian model averaging to reduce the risk of finding non-generalizable relationships. Results indicate that gender, religious affiliation, birth cohort, and (to a lesser degree) education and marital status widely predict differences in morality.

The present study corroborates many of the findings from past work, but expands and strengthens these findings by simultaneously examining multiple moral constructs and using an identical set of social and demographic predictors to enhance comparability across models. In particular, both prior studies and the present results indicate that morality varies by gender, religion, and birth cohort, suggesting that these characteristics might be important general predictors of morality (i.e., their influence is not restricted to certain moral domains). Additionally, results for values replicate many of the relationships found by Longest and colleagues (2013) in their European sample, indicating that certain moral mappings might be independent of national context (particularly those for gender and age, c.f., Longest et al 2013:1513, 1520).

Of course, scholars care about moral differences (at least partially) for the same reason they care about cultural tastes – they can shape evaluative processes, and be used to

generate or fortify group boundaries. With regard to stratification, boundaries that separate those high in status, power, and economic rewards from those lacking these resources are particularly important. Are the results of this study consistent with the claim that morality contributes to stratification? Somewhat surprisingly, findings reveal few moral differences based on the traditional stratifying characteristics of race and class (though divisions along gender lines are manifold). At first glance, this suggests that morality might play a minor role in perpetuating social and economic stratification, but this conclusion is premature for two reasons. First, if those in power believe that certain racial groups and classes favor particular moral outlooks (even if it is not true), they might pre-emptively make moral distinctions and respond accordingly. Imputed morality can thus directly create distance between social groups. Stratification can also occur indirectly, as real moral differences are discovered through interpersonal interaction and generate (intentionally or otherwise) differential valuations that can affect friendship ties, access to social support, and so forth. When one interactant holds a position of power, moral divisions can also translate into differential access to information and opportunities. This process appears idiosyncratic – moral evaluations, after all, are made on a person-by-person basis – but can produce stratified results to the extent that members of social groups differ systematically from those in power on characteristics tied to moral variation (e.g., gender, age, religion). In these ways, moral differences can contribute to social and economic differences.

Work on the relationships between morality and socio-demographic characteristics could profitably be extended in several directions. Although the measures used in this study represent important dimensions of morality, they are not exhaustive, and future work should examine other moral constructs that have received attention in the literature, such as moral relativism/absolutism, and deontological vs. utilitarian moral reasoning (Baker 2005; Greene et al. 2008; Hunter 1991). Researchers should also explore how characteristics might interact to create unique moral profiles. Lamont and colleagues (1996), for instance, found that women with and without college degrees differed in their attitudes towards sexuality and family relations, and work on the culture of honor suggests that it is particularly important for Southern white males (Cohen et al. 1996). If morality is tied to experiences as I have argued, unique moral profiles are likely to emerge whenever combinations of demographic characteristics identify a group that differs systematically in its practices, forms of socialization, and/or treatment by others. Given the challenges of finding significant multi-way interactions in most representative samples, detecting moral differences for members of rare demographic combinations may require targeted data collection methods such as survey oversampling or ethnographic fieldwork.

Work on the socio-demographic distribution of morality is an important precursor to understanding types of moral boundaries people are likely to draw and, by extension, whose morality "matters" for accessing socially and economically desirable positions. This study advances this line of inquiry both methodologically – by appropriately accounting for model-based uncertainty in estimates – and theoretically, by linking a wide range of socio-demographic characteristics to several measures that are well established in the thriving, cross-disciplinary study of morality.

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Online Appendix

Table A1: Weighted Sample Descriptions

Socio-demographic characteristics	Sample 1		Sample 2	
	Mean	S.D.	Mean	S.D.
Race				
White (reference)	0.67	-	0.72	-
Black	0.11	-	0.10	-
Hispanic	0.15	-	0.13	-
other/multi-racial	0.07	-	0.06	-
Gender				
female	0.52	-	0.51	-
Age cohorts				
18-24 (reference)	0.10	-	0.09	-
25-34	0.21	-	0.18	-
35-44	0.17	-	0.21	-
45-54	0.17	-	0.18	-
55-64	0.19	-	0.17	-
65-74	0.11	-	0.08	-
75 or above	0.06	-	0.08	-
SES – Education and Income				
less than high school (reference)	0.12	-	0.11	-
high school	0.30	-	0.32	-
some college	0.29	-	0.28	-
BA or beyond	0.29	-	0.29	-
income	11.72	4.45	11.25	4.10
Family				
divorced/separated	0.12	-	0.15	-
married	0.55	-	0.51	-
other (reference)	0.33	-	0.34	-
Geography				
metro area	0.84	-	0.84	-
Northeast (reference)	0.18	-	0.18	-
Midwest	0.22	-	0.22	-
South	0.37	-	0.37	-
West	0.23	-	0.23	-
Employment				
working	0.55	-	0.62	-
Religion				
no religion	0.16	-	0.13	-
Baptist	0.18	-	0.18	-
Mainline Protestant	0.19	-	0.22	-
Catholic	0.25	-	0.25	-
Pentecostal	0.03	-	0.03	-
other Christian	0.13	-	0.15	-
other non-Christian	0.05	-	0.05	-
Morality				
Moral identity				
moral identity	5.08	0.87	-	-
Moral Foundations Theory				
harm	-	-	3.30	0.85
fairness	-	-	3.57	0.82

ingroup	-	-	2.89	0.82
authority	-	-	3.45	0.81
purity	-	-	3.01	1.00
Schwartz Values				
conformity	0.04	0.94	-	-
tradition	0.15	0.88	-	-
benevolence	0.64	0.71	-	-
universalism	0.46	0.71	-	-
self-direction	0.38	0.74	-	-
stimulation	-0.47	0.89	-	-
hedonism	-0.40	0.90	-	-
achievement	-0.41	0.91	-	-
power	-0.92	0.92	-	-
security	0.30	0.84	-	-

Sample 1 N = 1,483; sample 2 N = 878

Coding Details for Morality Measures

Values were measured using Schwartz's Portrait Values Questionnaire (PVQ). This widely-validated instrument measures ten value domains: conformity, tradition, security, power, achievement, hedonism, stimulation, self-direction, universalism, and benevolence (Schwartz, 2009). Respondents were asked to read statements and report how much the people described sounded like them. Options ranged from 1='Not like me at all' to 6='Very much like me.' Sample items from each sub-scale are: *Conformity* (α_1 = 0.66): I believe that people should do what they're told. I think people should follow rules at all times, even when no-one is watching; It is important to me to always behave properly. I avoid doing anything people would say is wrong; *Tradition* (α_1 = 0.47): It's important to me to be humble and modest and not to draw attention to myself; Tradition is important to me. I try to follow the customs handed down by my religion and family; *Security* (α_1 = 0.56): It is important to me to live in secure surroundings. I avoid anything that might endanger my safety; It is very important to me that the government ensures my safety against all threats. I want the state to be strong so it can defend its citizens; *Power* (α_1 = 0.57): It is important to me to be rich. I want to have a lot of money and expensive things; It is important to me to get respect from others. I want people to do what I say; *Achievement* (α_1 = 0.76): It's very important to me to show my abilities. I want people to admire what I do; Being very successful is important to me. I hope people will recognize my achievements; *Hedonism* (α_1 = 0.73): Having a good time is important to me. I like to "spoil" myself; I seek every chance I can to have fun. It is important to me to do things that give me pleasure; *Stimulation* (α_1 = 0.72): I think it is important to do lots of different things in life. I always look for new things to try; I look for adventure and like to take risks. I want to have an exciting life; *Self-direction* (α_1 = 0.54): Thinking up new ideas and being creative is important to me. I like to do things in my own original way; It is important to me to make my own decisions about what I do. I like to be free and not depend on others; *Universalism* (α_1 = 0.66): I think it is important that every person in the world be treated equally. I believe everyone should have equal opportunities in life; It is important to me to listen to people who are different from me. Even when I disagree with them, I still want to understand them; I strongly believe that people should care for nature. Looking after the environment is important to me; *Benevolence* (α_1 = 0.66): It's very important to me to help the people around me. I want

to care for their well-being; It is important to me to be loyal to my friends. I want to devote myself to people close to me. The mean of all items was subtracted from each sub-scale to adjust for scale response tendencies.

Sample 2 contains an additional five morality measures based on Moral Foundations Theory. Sample 2 included the 20-item version of the Moral Foundations Questionnaire (MFQ20), which has five subscales created by summing scores across 4 items each (Graham et al., 2011). Sample items are given below. The first two ask for agreement with the following statements, on a scale of 0=Strongly disagree to 5=Strongly agree: **Harm**: "Compassion for those who are suffering is the most crucial virtue;" "It can never be right to kill a human being;" **Fairness**: " When the government makes laws, the number one principle should be ensuring that everyone is treated fairly;" "Justice, fairness and equality are the most important requirements for a society;" **Ingroup**: "People should be loyal to their family members, even when they have done something wrong;" "It is more important to be a team player than to express oneself;" **Authority**: "Respect for authority is something all children need to learn;" "If I were a soldier and disagreed with my commanding officer's orders, I would obey anyway because that is my duty;" **Purity**: "People should not do things that are disgusting, even if no one is harmed;" "I would call some acts wrong on the grounds that they are unnatural." The final two items for each sub-scale ask respondents to decide whether certain considerations are relevant when deciding whether something is right and wrong, with response options ranging from 0='Not at all relevant – has nothing to do with my judgments of right and wrong' to 5='Extremely relevant – is one of the most important factors when I judge right and wrong.' These are: **Harm**: "Whether or not someone suffered emotionally;" "Whether or not someone was harmed;" **Fairness**: "Whether or not some people were treated differently than others;" "Whether or not someone acted unfairly;" **Ingroup**: "Whether or not someone did something to betray his or her group;" "Whether or not someone's action showed love for his or her country;" **Authority**: "Whether or not someone showed a lack of respect for authority;" "Whether or not someone failed to fulfill the duties of his or her role;" **Purity**: "Whether or not someone violated standards of purity and decency;" "Whether or not someone did something disgusting." Respondents were also asked to rate the morality of believing in astrology. This was included as a "catch" question, and consistent with recommended practice, those scoring in the top three categories (i.e., saying that astrology was somewhat, very, or extremely relevant to their judgments of morality) were coded as missing. Cronbach's alphas for the final subscales were: α_{harm} = 0.51, $\alpha_{fairness}$ = 0.71, $\alpha_{ingroup}$ = 0.51, $\alpha_{authority}$ = 0.65, α_{purity} = 0.74.

Appendix References

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