

## **The Morality of Too Much Money**

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### Abstract

Why do some people morally justify excessive wealth in a world where so many struggle? In some cultures, people find excessive wealth immoral, while others are structured so that having too much money is morally neutral or even praised. Here, we examine how people's moral values and national inequality predict the moralization of excessive wealth around the globe. Using demographically stratified samples from 20 nations ( $N = 4,351$ ), we find notable variability in the moralization of excessive wealth such that more equal societies (e.g., Belgium, Switzerland) consider having too much money more wrong. People's purity concerns predict their moralization of excessive wealth across societies, especially in economically egalitarian nations, after controlling for other moral intuitions, moralization of inequality, religiosity, political ideology, and demographic variables. Collectively, these cross-cultural results demonstrate that moral intuitions interact with structural economic systems to drive moral support for the possession of great wealth in a world containing much deprivation.

*Keywords:* Morality, Culture, Wealth, Money, Inequality.

**Statement of Relevance:** Is having too much money morally wrong? Given that the gap between the rich and poor is a growing concern across the globe, it is imperative that we understand the psychological judgments and justifications for having too much money in a world containing so much deprivation. We collect highly generalizable samples from 20 nations with substantial cultural diversity and demonstrate that more wealth-equal societies consider excessive wealth more morally wrong than people from more unequal societies. This suggests that people tend to morally justify the socioeconomic system in which they live. But people's moral views on excessive wealth vary widely within nations, too: We find that moral concerns about purity (e.g., cleanliness, naturalness, sanctity) predict moral condemnation of excessive wealth, especially in economically egalitarian nations. Thus, there may be more to the saying "filthy rich" than merely being an American metaphor. People's moral concerns interact with structural economic systems to drive moral condemnation of wealth accumulation.

### The Morality of Too Much Money

Use your wealth, which is given to you by God at first place, as a mean to please God and secure your life in Hereafter without neglecting your fair share of this world. Be good to the others as God has been good to you and do not spread corruption on earth as God does not like the corrupt people.

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*Quran, 28:77*

For the love of money is a root of all kinds of evil. Some people, eager for money, have wandered from the faith and pierced themselves with many griefs.

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*Timothy, 6:10*

A system that allows billionaires to exist alongside extreme poverty is immoral.

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*Alexandria Ocasio-Cortez, US Congresswoman*

From online bickering about the “filthy rich” to political protests and government policy, the topic of few individuals having an excessive amount of money is a contentious cultural issue. For example, the English proverb “Money doesn’t grow on trees” is a common saying about money in the United States, reminding people that it takes hard work to acquire wealth and that money does not come without effort. On the other hand, the Persian proverb “money is the dirt on the palm of the hand” metaphorically equates money with dirt, emphasizing the unclean nature of wealth and indicating that it ought to be washed away before it corrupts one’s “soul.” Be that as it may, individuals differ substantially in how much wealth they accumulate, and some individuals manage to hoard a disproportionate amount of money: the world’s eight richest individuals have as much wealth as the bottom half of the world. People’s judgment of excessive money might vary substantially based on their moral intuitions, cultural background, socio-economic status,

and the structural economic systems they live in. As our opening epigraphs suggest, some religions and politicians consider having too much money a root of immorality; hence, religiosity and political ideology can also shape people's moral views about wealth. In this research, we examine how people's various moral concerns predict the moral judgment of excessive wealth across 20 nations.

### **Psychology of Excessive Wealth and Inequality**

In a Pew Research Poll from 2014<sup>1</sup>, a majority of respondents from all 44 countries surveyed believed that the gap between rich and poor is a big problem facing their country. Why would anyone not condemn inequality in the distribution of wealth? After all, researchers have found many negative associations with greater inequality, such as reductions in physical and mental health, increased substance abuse, increased violence, lower educational achievement, greater mistrust (Wilkinson & Pickett, 2009), increased homicide rates (Daly et al., 2001), decreased solidarity between social strata (Paskov & Dewilde, 2012), and decreased happiness (Alesina et al., 2004). However, some argue that inequality and excessive wealth may not be as impending of a social issue as thought, and that the negative downstream consequences are accompanied by less evident but important social benefits (e.g., plunging rates of childhood mortality, world hunger, death from preventable diseases) (see Pinker, 2018). Similarly, others posit that the negative opinions about inequality may be misguided and based on experimental designs that ignore important considerations such as an individual's effort (Starmans et al., 2017). This consequential disagreement about inequality and extreme non-normal distributions of wealth around the globe may be rooted in both individuals' intuitions about right and wrong as well as cultural norms around money, wealth, and deservingness.

Early psychological research with U.S. college students did not find much variance on the topic, showing that in lab settings, the majority of young adults preferred equal

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<sup>1</sup> <https://www.pewresearch.org/global/2014/10/09/emerging-and-developing-economies-much-more-optimistic-than-rich-countries-about-the-future/>

distribution of resources. Most of these participants tended to divide up resources evenly among strangers (Deutsch, 1975), were committed to this equality even if it meant everyone gets less overall (Mitchell et al., 1993), would express anger toward and punish those who distribute unequally (Dawes et al., 2007), and explicitly preferred to live in a more equal society where people at the top (e.g., CEOs) make a considerable amount less than they do now (Norton & Ariely, 2011). If individuals in the lab prefer equality, then why is this such a contentious topic in the real world?

Attempting to address the heterogeneity of opinions about inequality in the lab and in real-life contexts, researchers have made the case that the clear-cut negative opinions found in the lab may be due to poor experimental design that ignores key moral considerations in the real world. Starmans et al. (2017) argue that many people actually do prefer unequal distribution of resources, as long as this inequality is an outcome of a “fair” procedure. Drawing upon lab studies, cross-cultural research, and experiments with young children, these authors argue that humans naturally favor *fair* distributions, not equal ones, and that when intuitions about what is truly fair and what is completely egalitarian clash, many people prefer “fair inequality” over equality. These authors argue that if one believes that (a) people in the real world exhibit variation in effort, ability, and moral deservingness, and (b) a fair system takes these considerations into account, then a preference for this type of fairness will dictate that one should prefer unequal outcomes, including extremely skewed distributions of wealth in the society (Starmans et al., 2017).

Research in social justice has extensively examined this nuanced definition of fairness, differentiating between *distributional fairness*, which refers to equality in outcomes, and *procedural fairness*, which focuses on the equality of procedure (Deutsch, 1985; Skitka et al., 2003). Similarly, moral psychologists have conceptualized the fissure in fairness as regulatory concerns about proportionality and equality (Rai & Fiske, 2011). Studies have demonstrated that the two facets of fairness can prompt varying levels of support for activism that addresses inequality (Hoyt et al., 2018). Emotionally, this

variation in values are related to the evolved responses to societal free-riders, where people are capable of being both angry at the lazy (which relates to *proportionality*) and also compassionate toward people in need (which relates to *equality*) (Boyer & Petersen, 2018; Petersen et al., 2012).

Additionally, studies on fairness conducted in the West almost entirely focus on justice and individual well-being, which are considered Western notions of morality (see Haidt & Graham, 2007; Rozin et al., 1999; Shweder et al., 1997). Anthropological research outside Western, Educated, Industrialised, Rich, and Democratic (WEIRD; Henrich et al., 2010) populations suggests that moral values go beyond justice and harm, and usually have notions of hierarchy and purity in them (Haidt & Joseph, 2004; Purzycki et al., 2018). Taking a pluralistic approach to moral values, Moral Foundations Theory (MFT) was developed, arguing that moral cognition is based on our intuitions about at least five foundations: care, fairness, loyalty, authority, and purity (Graham et al., 2013; Haidt & Joseph, 2004). More recently, Atari et al. (2023) split the “fairness” foundation into equality (intuitions about equal treatment and equal outcomes for individuals) and proportionality (intuitions about individuals getting rewarded in proportion to their merit or contribution). According to MFT, a set of intuitions lead humans to “gut-level” judgments of events in the social world (Atari et al., 2020). It remains an open question how these six moral intuitions drive people’s moral judgment of excessive wealth above and beyond inequality.

### **Cultural Antecedents of Judgments of Economic Inequality**

Structural and cultural factors play a key role in how our moral intuitions, including those about equality and deservingness, are expressed and acted upon (e.g., Brandt & Reyna, 2017; Du et al., 2022; Yan et al., 2023). For example, research has shown that the economic system that one comes from may influence one’s opinion toward inequality or excessive wealth (Goudarzi et al., 2020). This work suggests that indifference to inequality

is partly attributable to a belief in the fairness of the capitalist or socialist system in which individuals live. In other words, how a country's economic system differs with respect to redistribution of wealth may influence citizens' beliefs about excessive wealth such that individuals from more equally-distributive countries (e.g., Belgium) may find excessive wealth more wrong on moral grounds than those from a less distributive sociopolitical system (e.g., Saudi Arabia). A country's Gini coefficient (i.e., the extent to which the distribution of income or consumption among individuals or households within an economy deviates from a perfectly equal distribution) has been found to be associated with important psychological outcomes such as lower levels of happiness and well-being, (Buttrick et al., 2017). Even if a nation enjoys substantial economic growth in which the average citizen gets wealthier, the same citizen may not necessarily feel happier if this growth is accompanied by growing inequality as measured by the Gini coefficient (Oishi & Kesebir, 2015). When a person's attention is drawn to their relative standing in the distribution of material well-being, they often exaggerate the impact that personal income has on happiness (Kahneman et al., 2006), suggesting that in more unequal societies where one's relative standing is more salient, one may put more value in their relative income in the face of the excessively rich.

Beliefs about wealth inequality may also be influenced by political ideology (Skurka et al., 2020; Trump, 2020), even though the psychological mechanisms responsible remain elusive. For instance, American political parties differ on government's role: Democrats lean toward more government intervention, while Republicans prefer limited government involvement. In this respect, Republicans may not support government interventions to redistribute wealth to create more equal outcomes and may not regard excessive wealth as a moral issue (see Kuziemko et al., 2015). System Justification Theory (SJT; Jost & Banaji, 1994) posits that people are generally motivated to see existing social, economic, and political institutions as fair and thereby enforce the status quo. Thus, beliefs about what is "fair" depends on what is considered to be normative (Trump, 2020). System-justifying

beliefs are generally associated with a rightist ideology, belief in a meritocratic system, political conservatism, and right-wing authoritarianism (Jost & Hunyady, 2005). The majority of such studies (e.g., Franks & Scherr, 2019) focus on WEIRD populations, especially the U.S., hence it is unclear how political ideology may interact with moral intuitions to form judgments about wealth distribution across less-WEIRD populations.

As illustrated by our opening epigraphs of excerpts from holy texts, religious teachings may also affect people's moralization of economic inequality and excessive wealth. Interestingly, while all major religions have explicit cooperative norms about equality, societies marked by high levels of wealth inequality tend to be more religious than those with more egalitarian distributions (Barber, 2013) — which can partially be attributable to higher rates of corruption and nepotism in these societies. This correlation exists across a wide range of countries from different religious traditions and varying levels of economic development. At the individual level, higher levels of religiosity have been found to be associated with the endorsement of the belief in a just world, Protestant work ethic, opposition to equality, right-wing authoritarianism, political conservatism, endorsing the idea that suffering builds character, and other system-justifying beliefs (Jost et al., 2014; Yan et al., 2023).

### **The Current Study**

We asked whether moralization of excessive wealth varies across cultures in predictable ways and whether six moral intuitions conceptualized by a recent theoretical revision of MFT (care, equality, proportionality, loyalty, authority, and purity; Atari et al., 2023) are associated with these judgments across 20 nations. We used MFT to investigate the types of moral intuitions implicated in people's judgments. In order to isolate the concept of the moralization of excessive wealth from previous research on the moralization of inequality, we also included the latter as a control variable. Given that WEIRD populations tend to represent both psychological and economic global outliers (Henrich,



2020), we recruited participants from a diverse group of nations that varied considerably in their cultural distance and economic institutions (Muthukrishna et al., 2020).

We had three specific predictions based on prior work in cultural and moral psychology and based on MFT (Graham et al., 2013): (a) Equality should be positively associated with moralization of excessive wealth across populations; (b) Proportionality should be negatively associated with moralization of excessive wealth across populations; (c) Since in many non-WEIRD and more traditional populations, money has been regarded as a corrupting element of social life, damaging potential cooperation and degrading one’s “soul” (see Fitouchi et al., 2023; Graham et al., 2023), we predicted a negative relationship between purity and moralization of excessive wealth. Additionally, based on SJT (Jost et al., 2014) and recent empirical research across time and regions (Du et al., 2022), we predicted that participants from nations with higher wealth equality would find excessive wealth more immoral. Finally, we predicted that moral intuitions should interact with structural societal-level inequality (i.e., Gini coefficient) to predict moralization of excessive wealth.

## Method

### Participants

We recruited demographically stratified samples mirroring demographics in terms of gender, education, and age (and political ideology in the U.S.) across 20 nations (Argentina, Belgium, Chile, Colombia, Egypt, France, Ireland, Japan, Kenya, Mexico, Morocco, New Zealand, Nigeria, Peru, Russia, Saudi Arabia, South Africa, Switzerland, United Arab Emirates, and the United States) with 4,351 participants overall. These countries represent substantial variation in terms of cultural distance and wealth inequality. Potential participants were notified of this study by a third-party data-collection platform, Qualtrics Panels, and samples were collected based on the feasibility of stratified data collection. In 14 nations, we recruited 205 participants; in three nations, we recruited 206 participants; in

two nations, we recruited 207 participants; and in the U.S. we recruited 449 participants.

## Measures

All participants first completed a number of surveys, including demographics (gender, age, education, subjective socio-economic status) and other measures of interest described below. All measures were translated into target languages (i.e., Spanish, French, Arabic, Japanese, and Russian) using a third-party professional translation service. Subsequently, independent bilingual researchers checked the translations and verified the fluency of all measures. Discrepancies and modifications were addressed between the translation service, independent researchers, and the second author.

### *Moral Foundations Questionnaire-2*

All participants completed the 36-item Moral Foundations Questionnaire-2 (MFQ-2; Atari et al., 2023), which consists of contextualized items that can gauge moral judgments related to the six moral foundations (i.e., care, equality, proportionality, loyalty, authority, and purity). Items are rated along a 5-point Likert-type scale ranging from 1 (*Does not describe me at all*) to 5 (*Describes me extremely well*) for care, equality, proportionality, loyalty, authority, and purity, respectively. The order of questions was randomized. Internal consistency coefficients (Cronbach's  $\alpha$ s) are presented in Table 1.

### *Moralization of Excessive Wealth*

The moralization of excessive wealth was measured by asking the participant to rate on a scale from 1 (*Not wrong at all*) to 5 (*Extremely wrong*), “Is it morally wrong to have too much money?”. Given that distribution of wealth is relative to an individual and cultural context, we chose a generic statement of the ethics of “too much” money instead of an exact number, net worth amount, or percentage.

**Table 1***Internal Consistency Coefficients across 20 Nations*

Nation	Care	Equality	Proportionality	Loyalty	Authority	Purity
Argentina	0.86	0.84	0.70	0.78	0.77	0.68
Belgium	0.88	0.88	0.68	0.82	0.73	0.68
Chile	0.89	0.81	0.76	0.82	0.82	0.75
Colombia	0.82	0.83	0.72	0.82	0.77	0.74
Egypt	0.85	0.83	0.77	0.82	0.80	0.68
France	0.89	0.86	0.72	0.81	0.73	0.68
Ireland	0.89	0.83	0.80	0.86	0.87	0.77
Japan	0.85	0.82	0.79	0.83	0.77	0.65
Kenya	0.87	0.80	0.76	0.84	0.83	0.73
Mexico	0.86	0.82	0.78	0.79	0.77	0.71
Morocco	0.88	0.83	0.83	0.87	0.80	0.72
New Zealand	0.88	0.87	0.75	0.86	0.86	0.80
Nigeria	0.80	0.83	0.72	0.79	0.72	0.68
Peru	0.84	0.85	0.80	0.81	0.80	0.76
Russia	0.87	0.84	0.74	0.85	0.83	0.74
Saudi Arabia	0.85	0.81	0.77	0.85	0.80	0.65
South Africa	0.84	0.79	0.71	0.82	0.78	0.78
Switzerland	0.88	0.91	0.78	0.85	0.85	0.73
UAE	0.90	0.81	0.89	0.89	0.87	0.78
United States	0.89	0.86	0.72	0.83	0.85	0.77
<i>Average</i>	0.86	0.84	0.76	0.83	0.80	0.72

***Moralization of Economic Inequality***

Based on prior work in attitude moralization (Skitka et al., 2018), we created a single-item measure to assess how strongly people moralize their attitudes toward economic inequality. To measure participants' moralization of economic inequality, as a control variable, we asked them "How much are your feelings about inequality based on fundamental questions of right and wrong?" which was rated on a Likert-type scale ranging from 1 (*Not at all*) to 5 (*Very much*).

***Self-Rating of Religiosity***

Participants then completed a cross-culturally validated single-item measure of religiosity rated along an 11-point scale (0-10) (Abdel-Khalek, 2007).

### ***Political Ideology***

Our working definition of political ideology operationalizes on a basic left-right spectrum in order to make sure it operates well across national cultures. Participants completed a single-item measure for political ideology (0-10) (“In political matters, people talk of ‘*the left*’ and ‘*the right*.’ How would you place your views on this scale, generally speaking?”) which can work equally well across cultures (Jost et al., 2003).

### ***Country-level Wealth Inequality***

Country-level inequality was measured using the Gini coefficient, also known as the Gini Index. The coefficient is based on a statistical method that measures how much the income distribution of a country deviates from a perfectly equal distribution. A country with perfect equality in which everyone earns and owns the same amount of wealth has a Gini coefficient of zero while a country with perfect inequality in which one person owns and earns everything would have a Gini coefficient of 100. The benefit of using the Gini coefficient lies in its ability to encapsulate the inequality of the entire income distribution through a single, easily interpretable index which facilitates comparisons between countries, regardless of their population sizes. Our country-level Gini coefficients were gathered from the World Bank Data website.<sup>2</sup>

### **Analytic Procedure**

To examine the relationship between moral values and moralization of excessive wealth, we employed multilevel models to account for the clustered nature of our data. Our individual-level variables included self-report measures (care, equality, proportionality, loyalty, authority, purity, moralization of inequality) and demographic variables (age, gender, subjective socio-economic status, political conservatism, religiosity, and education). Our country-level variable was the Gini coefficient (for other country-level analyses, see

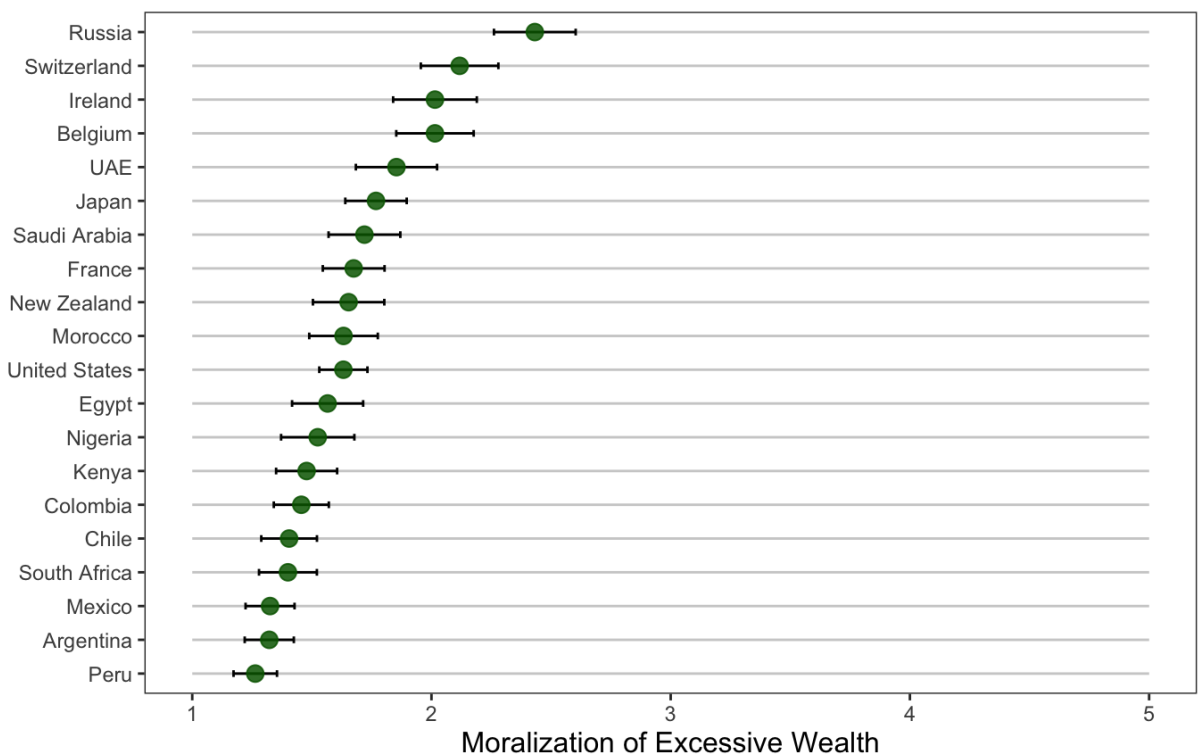
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<sup>2</sup> <https://data.worldbank.org/indicator/SI.POV.GINI>

Supplementary Materials). Based on the distribution of our dependent variable, which skews heavily on the lower end (the majority of people on average found excessive wealth either “slightly wrong” or “not wrong at all”), we employed four zero-inflated negative-binomial multilevel models, consecutively adding more control variables to the base model. Nonetheless, we conducted more commonly known Gaussian models as robustness checks (see Supplementary Materials). We used the “lme4” package, version 4.0.1, in R programming language.<sup>3</sup>

### Figure 1

*The Moralization of Excessive Wealth in 20 Nations*



**Note:** Whiskers represent the 95% confidence interval (95% CI).

<sup>3</sup> <https://cran.r-project.org/web/packages/lme4/index.html>

## Results

### Descriptive Statistics

Country-level averages of the moralization of excessive wealth are shown in Figure 1. People in Russia, Switzerland, and Ireland held strongest moral opposition to having too much money. On the other hand, people in Peru, Argentina, and Mexico were most approving of having excessive wealth. Overall, all national cultures in our study, on average, found excessive wealth to be between “not wrong at all” and “moderately wrong,” indicating that few people might hold the belief that possessing excessive wealth is extremely unacceptable from a moral standpoint.

### Country-level Analysis

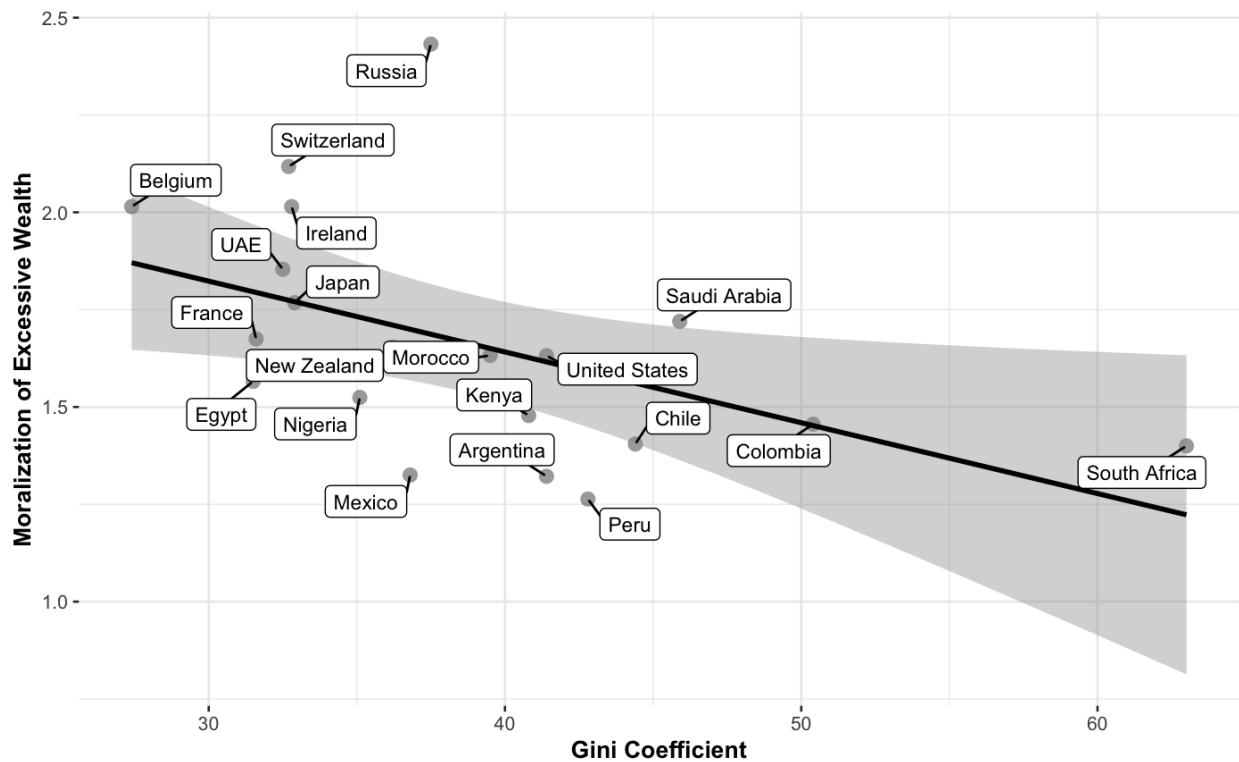
The Gini coefficient was significantly associated with moralization of excessive wealth ( $r_\tau = -0.43$ ,  $p = .007$ ; see Figure 2) but unrelated to moralization of inequality ( $r_\tau = -0.03$ ,  $p = .871$ ; see Figure S2). Countries with lower Gini coefficients (more equal societies; e.g., Belgium, Switzerland) were more likely to endorse excessive wealth as more wrong than countries with higher Gini coefficients (more unequal societies; e.g., Peru, Chile, Colombia).<sup>4</sup>

### Multi-level Modeling

We conducted several multilevel models to predict the dependent variable. Since the distribution of moralization of excessive wealth was extremely non-normal and overly dispersed, we conducted a zero-inflated negative-binomial set of models, summarized in Table 2 (see Supplementary Materials for correlation matrices and Gaussian models as robustness checks).

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<sup>4</sup> For robustness checks we re-run this analysis while accounting for the non-independence of nations (See Supplementary Materials)

**Figure 2***The Relationship Between the Gini Coefficient and Moralization of Excessive Wealth*

**Note:** Gini coefficient is scored from 0-100 where a country with perfect equality in which everyone earns and owns the same amount of wealth has a Gini coefficient of zero while a country with perfect inequality in which one person owns and earns everything would have a Gini coefficient of 100.

In Model 1, we entered moral foundations as independent variables, and moralization of inequality as a control variable. Consistent with our predictions, equality and purity were positively associated with moralization of excessive wealth, while proportionality showed an inverse relationship with it. All these three associations held after accounting for demographics (Model 2) and country-level Gini coefficients (Model 3). Next, we focus on Model 4 which includes all control variables and cross-level interaction terms (see Table 2). We found older age ( $B = 0.006$ ,  $SE = 0.002$ ,  $p < .001$ ), higher socio-economic status ( $B = 0.029$ ,  $SE = 0.014$ ,  $p = .040$ ), the moralization of inequality ( $B = 0.095$ ,  $SE = 0.023$ ,  $p < .001$ ), equality ( $B = 0.506$ ,  $SE = 0.177$ ,  $p = .004$ ) and purity ( $B = 0.647$ ,  $SE = 0.215$ ,  $p = .003$ ) to be associated with the moralization of having too

much money. Endorsement of care ( $B = -0.618$ ,  $SE = 0.235$ ,  $p = .008$ ) and right-wing political ideology ( $B = -0.034$ ,  $SE = 0.010$ ,  $p = .001$ ), on the other hand, were found to be associated with lower moralization of excessive wealth.

Consistent with our predictions, we found that country-level Gini coefficient interacts with individuals' proportionality ( $B = -0.015$ ,  $SE = 0.006$ ,  $p = .011$ ) and purity ( $B = -0.013$ ,  $SE = 0.006$ ,  $p = .015$ ) concerns to drive moralization, such that in highly egalitarian nations (e.g., Belgium), people's intuitions about proportionality and purity are stronger predictors of moral opposition to having too much money. The opposite interaction was observed for care and Gini ( $B = 0.014$ ,  $SE = 0.006$ ,  $p = .024$ ) where in more unequal nations (e.g., Colombia), endorsement of care is associated with higher opposition to excessive wealth.

Given the significant effect of the moral concerns and conservatism along with the intuitive relationship of religion with the moralization of excessive wealth, we ran exploratory multi-level mediation models to analyze the role each moral foundation plays in mediating the relationship between (a) religiosity and (b) politics with the moralization of excessive wealth. With conservatism as the predictor, both purity and equality are significantly related to moralization of excessive wealth while proportionality, loyalty, and authority are negatively associated. With religiosity as a predictor, we got exaggerated proportions and distorted effects due to the lack of significant direct effect. All results are at the individual level since our  $N$  is too small for country level mediations and are reported in the Supplementary Materials.

## Discussion

The world's richest man in 2022, Elon Musk, said that it is "morally wrong and dumb" to use the word 'billionaire' as a pejorative if the individual is using their wealth to create products that are making "millions of people happy"<sup>5</sup>. Many people appear to agree

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<sup>5</sup> Elon Musk, May 27 2022, 4:16 PM, <https://twitter.com/elonmusk/status/1529961091656212514>



**Table 2***Multilevel Zero-Inflated Negative Binomial Models Predicting the Moralization of Excessive Wealth*

	Model 1	Model 2	Model 3	Model 4
(Intercept)	-0.61*** (0.18)	-0.97*** (0.22)	-0.26 (0.43)	-1.84 (0.99)
Care	-0.13** (0.04)	-0.10* (0.04)	-0.10* (0.04)	-0.62** (0.23)
Equality	0.61*** (0.03)	0.60*** (0.03)	0.59*** (0.03)	0.51** (0.18)
Proportionality	-0.22*** (0.04)	-0.19*** (0.05)	-0.19*** (0.05)	0.39 (0.23)
Loyalty	-0.12** (0.05)	-0.14** (0.05)	-0.14** (0.05)	0.15 (0.23)
Authority	-0.25*** (0.05)	-0.24*** (0.05)	-0.24*** (0.05)	-0.49 (0.28)
Purity	0.15*** (0.04)	0.13** (0.04)	0.13** (0.04)	0.65** (0.22)
Moralization of Inequality	0.11*** (0.02)	0.10*** (0.02)	0.10*** (0.02)	0.10*** (0.02)
Age		0.01*** (0.00)	0.01*** (0.00)	0.01*** (0.00)
Gender		0.02 (0.05)	0.02 (0.05)	0.02 (0.05)
Religiosity		0.01 (0.01)	0.01 (0.01)	0.01 (0.01)
Conservatism		-0.03** (0.01)	-0.03** (0.01)	-0.03** (0.01)
Education		-0.01 (0.02)	-0.01 (0.02)	-0.01 (0.02)
SES		0.03* (0.01)	0.03* (0.01)	0.03* (0.01)
Gini			-0.02 (0.01)	0.02 (0.03)
Care:Gini				0.01* (0.01)
Equality:Gini				0.00 (0.00)
Proportionality:Gini				-0.02* (0.01)
Loyalty:Gini				-0.01 (0.01)
Authority:Gini				0.01 (0.01)
Purity:Gini				-0.01* (0.01)
AIC	8897.55	8431.81	8430.41	8420.50
Log Likelihood	-4438.78	-4199.91	-4198.21	-4187.25
Num. obs.	4342	4096	4096	4096
Num. groups: country	20	20	20	20
Var: country (Intercept)	0.12	0.11	0.09	0.11

\*\*\*  $p < 0.001$ ; \*\*  $p < 0.01$ ; \*  $p < 0.05$ **Note:** Numbers outside parentheses represent the coefficient estimate and the numbers inside parentheses represent the standard error.

that having too much money is not morally wrong, but this view is not universal: left-leaning individuals, people living in egalitarian societies, those who highly value equality, people in higher socio-economic status, and people who value moral purity appear to think of excessive wealth as more morally wrong.

We showed that moralization of excessive wealth is a distinguishable construct compared with the moralization of economic inequality, only correlated at  $r = .11$ . Moral concerns and societal factors were differentially associated with the moralization of excessive wealth after controlling for moralization of economic inequality. Among these effects, the role of purity is the most interesting. People's moral intuitions about care, equality, and importantly purity predict their moralization of excessive wealth. We also found some cross-cultural evidence that these moral values interact with broader cultural and structural economic factors to drive moral justification of inequality and money hoarding (for similar dynamics between opinions of inequality and society-level systems, see Brandt & Reyna, 2017).

Our findings regarding the relationship between equality, proportionality, and moralization of wealth are intuitively understandable and consistent with prior research (Meindl et al., 2019; Rai & Fiske, 2011; Skurka et al., 2020). People who highly value the egalitarian distribution of resources in society blame the few who control much wealth and power, and people who believe in a meritocratic system and ideas around effort, the Protestant work ethic, and deservingness see the accumulation of money as morally justified as it corresponds with greater effort, higher creativity, and entrepreneurial activities. The curious finding, however, concerns the relationship between purity concerns and moralization of too much money (Franks & Scherr, 2019).

People may feel moral outrage at Billionaires having such amounts of wealth because they find the accumulation of that much wealth corrupting the "soul" of the owner of that wealth. It also stands to reason that historical levels of corruption and the absence of strong institutions can shape moral condemnation of excessive wealth. We explored this

possibility with further analyses on country-level corruption and the moralization of excessive wealth (see Supplementary Materials), but country-level corruption metrics were not significantly related to moralization of excessive wealth.

The soul-degrading nature of money has indeed been highlighted in many cultural traditions and religious teachings (see opening epigraphs), but this finding is not just about abiding by religious teachings, as evident in the non-significant weak relationship between intrinsic religiosity and moralization of excessive wealth in our results. Individuals who are concerned with purity are sensitive toward corrupting and degrading materials that can infiltrate the sanctity of one's soul and body (Graham et al., 2023; Reimer et al., 2022). These intuitions, based on the present results, are highly correlated with moral opposition to possessing too much money, even after controlling for political party and religiosity (see Supplementary Materials); hence, billionaires might be considered morally reprehensible, even disgusting (the moral emotion most strongly associated with purity, see Atari et al., 2022; Wagemans et al., 2018). The purity foundation, as conceptualized by MFT, is related to bodily and spiritual purity, disgust sensitivity, self-control, and avoidance of unnatural things (Atari et al., 2022; Koleva et al., 2012; Reimer et al., 2022; Wagemans et al., 2018); thus, people with stronger purity concerns may find having too much money to be impure, disgusting, and unnatural, regardless of how much social disparities money hoarding entails. One potential mechanism explaining this link is self-control and purity-based cooperation. Purity is highly related to self-control (Mooijman et al., 2018) and lay theories of excessive wealth entail that extremely rich people get to do everything they want, so effectively there is little inhibiting their impulses. This perceived lack of self-control can lead to judgments of non-cooperativeness and immorality (Fitouchi et al., 2023).

Notably, an increasing number of economic studies have started relying on MFT to predict economic outcomes. Many of these studies operationalize “moral universalism” as the difference between the two binding moral foundations (i.e., loyalty and authority) and individualizing foundations (i.e., care and fairness) (see Graham et al., 2013), effectively

leaving out purity in their equation. For example, Enke (2020) intentionally “ignored [purity] because ‘divine’ values are not directly related to the distinction between universalist and communal ones” (p. 3690). The present work highlights the important role of moral purity in predicting economic outcomes even after controlling for all other moral foundations, socio-economic status, religion, political ideology, and country-level economic inequality. As such, we encourage future research in economics to incorporate purity concerns in modeling economic outcomes.

### **Limitations and Future Directions**

This research has a number of limitations to be addressed in future work. This research is observational; experimental approaches should be conducted, possibly by framing excessive wealth with certain moral foundations prior to measuring the moralization of excessive wealth (see Day et al., 2014), in order to establish a causal relationship between these constructs. Additionally, structural factors such as the Gini coefficient may influence the moralization of excessive wealth in longer time periods, so longitudinal and/or historical psychological studies are encouraged to study these interactions between economic systems and human psychology temporally (see Nunn, 2020). Much of people’s contemporary moral views on social issues, including non-normal distribution of wealth, can have historical roots in their society.

### **Conclusion**

Why do some people deem having too much money to be morally wrong? While systems of faith and systems of government differ in their ethical stance on the cultural issue, given the results of this study, it is an individual’s moral intuitions in interaction with their cultural milieu that shape people’s moral judgments of excessive wealth, even if acquired by honest means. Moral judgments of too much money are not just about harm or different flavors of justice; rather, they may have a more complex moral underpinning. To many, possession of excessive wealth may be disgusting and unnatural due to the

degrading nature of excessive wealth, suggesting there is more of a psychological truth to the term "*filthy rich*" than merely being an American metaphor. Our findings have implications for understanding the complex relationship between moral intuitions and the economic and cultural systems that may shape attitudes about wealth.

	Care	Eq	Prop	Loy	Auth	Pur	MOEW	B Sp	Ex Sp	B Acq	Ex Acq	B Exc	Ex Exc	Const Exc	Self Exc
Care	1.00														
Eq	0.36	1.00													
Prop	0.48	-0.30	1.00												
Loy	-0.64**	-0.09	-0.52*	1.00											
Auth	0.32	-0.42	0.69***	-0.56*	1.00										
Purity	0.05	-0.35	0.30	-0.28	0.83***	1.00									
MOEW	-0.38	0.39	-0.72***	0.55*	-0.92***	-0.70***	1.00								
B Sp	-0.52*	0.31	-0.80***	0.54*	-0.75***	-0.47	0.83***	1.00							
Ex Sp	0.46	0.44	-0.15	-0.21	-0.43	-0.61**	0.27	0.04	1.00						
B Acq	-0.52*	0.26	-0.74***	0.55*	-0.78***	-0.55*	0.84***	0.96***	0.05	1.00					
Ex Acq	0.48	0.19	0.02	-0.20	-0.21	-0.40	0.09	-0.15	0.86***	-0.13	1.00				
B Exc	-0.78***	-0.22	-0.49	0.75***	-0.48	-0.16	0.56*	0.55*	-0.51*	0.58*	-0.57*	1.00			
Ex Exc	-0.46	0.16	-0.60*	0.85***	-0.82***	-0.58*	0.84***	0.68*	0.09	0.70***	0.01	0.70***	1.00		
Const Exc	-0.62**	-0.25	-0.30	0.44	-0.27	-0.01	0.31	0.31	-0.61*	0.35	-0.76***	0.86***	0.41	1.00	
Self Exc	-0.21	-0.29	-0.08	0.51*	-0.05	0.18	0.18	0.09	-0.28	0.07	-0.11	0.48	0.51*	0.31	1.00

	Care	Equality	Proportionality	Loyalty	Authority	Purity	MOEW
Care	-0.00	1.00	1.00	0.82	1.00	1.00	1.00
Equality	0.18	-0.00	1.00	1.00	1.00	1.00	1.00
Proportionality	0.07	0.28	-0.00	1.00	0.40	1.00	0.20
Loyalty	0.01	0.75	0.05	-0.00	1.00	1.00	1.00
Authority	0.24	0.12	0.00	0.03	-0.00	0.01	0.00
Purity	0.85	0.21	0.27	0.32	0.00	-0.00	0.29
MOEW	0.16	0.15	0.00	0.03	0.00	0.00	-0.00
Benevolent_Spending	0.05	0.26	0.00	0.04	0.00	0.08	0.00
Exploitative_Spending	0.09	0.10	0.59	0.45	0.11	0.02	0.32
Benevolent_Acquisition	0.05	0.34	0.00	0.03	0.00	0.03	0.00
Exploitative_Acquisition	0.07	0.49	0.95	0.48	0.46	0.14	0.76
Benevolent_Excess	0.00	0.42	0.06	0.00	0.07	0.57	0.03
Exploitative_Excess	0.09	0.57	0.02	0.00	0.00	0.02	0.00
Constructive_Excess	0.01	0.37	0.27	0.10	0.34	0.96	0.26
Selfish_Indulgence_Excess	0.44	0.30	0.78	0.05	0.86	0.52	0.52

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## Supplementary Materials

In this document, we present supplementary and additional analyses related to the main text. All of the following analyses were completed in R version 4.0.1 with the following packages : "haven" (Wickham, Miller, et al., 2023), "Hmisc"(Jr, 2023), "readxl"(Wickham & Bryan, 2023), "tidyverse"(Wickham et al., 2019), "psych"(Revelle, 2022), and "dplyr"(Wickham, François, et al., 2023) for data management, "lme4"(Bates et al., 2015), "lavaan"(Rosseel, 2012), "brms" (Bürkner, 2017) and "lmerTest"(Kuznetsova et al., 2017) to run country-level, multilevel, and mediation analyses, "modelsummary"(Arel-Bundock, 2022), "ggplot2" (Wickham, 2016), "ggside"(Landis, 2022), "sjPlot" (Lüdtke, 2022), "jtools" (Long, 2019a), "xtable" (Long, 2019b), "apaTables"(Stanley & Stanley, 2018), "corrplot"(Wei et al., 2017), "plotrix"(J, 2006) and "ggridges" (Wilke, 2021) for plots, graphs, tables, and data visualisations, and "glmmTMB"(Magnusson et al., 2017) for fitting generalized linear mixed models. All R script is available at our Open Science Framework (OSF) <https://osf.io/jkceu/>.

In this document, we first provide additional analyses and visualizations on the data from the studies reported in the main text (on the moralization of excessive wealth and country-level inequality) in the form of correlation matrices of variables, additional Gaussian analysis as robustness checks, and a number of mediation path models. We then provide exploratory analysis on the role of country-level corruption, an alternative factor that may influence how people moralize having too much money across cultures.

## S1. Additional Analysis on Main Study Data

Here, we provide additional analysis and data visualizations for the main study data on the relationship between country-level inequality, moral foundations, and the moralization of excessive wealth.

### *Correlation Matrix*

Below are Pearson correlation matrices (Table S1 and Figure S1) of all relevant variables including the six moral foundations, the moralization of excessive wealth (MOEW), moralization of inequality (MOI), Gini coefficient, and demographic measures. Important to note is that without a multi-level model that controls for country-level factors, all variables except for the endorsement of care and religiosity have significant relationships with our target variable, i.e., MOEW (see the first column on the left in both matrices).

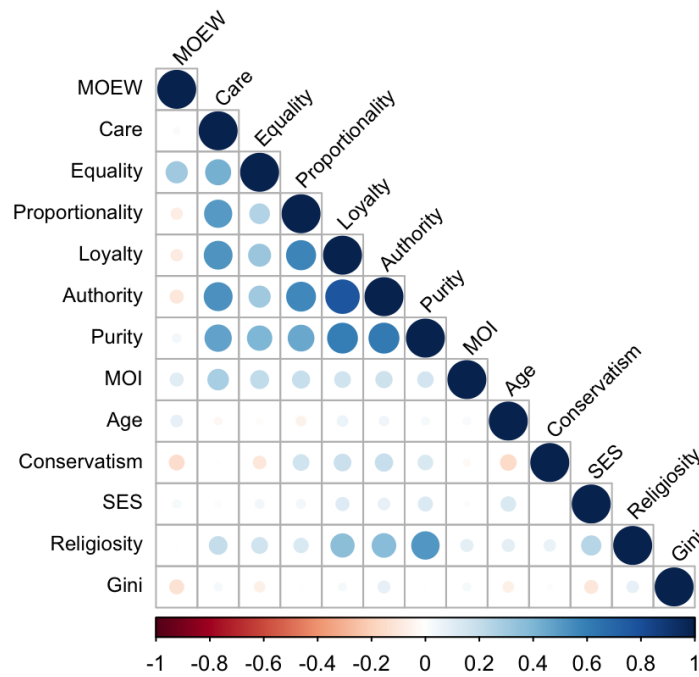
**Table S1**  
*Correlation Matrix of All Relevant Variables*

	MOEW	Care	Eq	Pr	Loy	Auth	Pur	MOI	Age	Cons	SES	Rel	Gini
MOEW	1.00												
Care	0.02	1.00											
Eq	0.30***	0.43***	1.00										
Pr	-0.08***	0.50***	0.26***	1.00									
Loy	-0.08***	0.53***	0.33***	0.58***	1.00								
Auth	-0.11***	0.53***	0.30***	0.57***	0.77***	1.00							
Pur	0.04**	0.47***	0.40***	0.45***	0.61***	0.61***	1.00						
MOI	0.11***	0.28***	0.21***	0.19***	0.16***	0.17***	0.16***	1.00					
Age	0.08***	-0.03	-0.02	-0.06***	0.07***	0.05***	0.03*	0.03	1.00				
Cons	-0.14***	0.00	-0.10***	0.16***	0.18***	0.20***	0.14***	-0.03	-0.16***	1.00			
SES	0.04*	-0.02	0.05***	0.05***	0.11***	0.08***	0.13***	-0.01	0.13***	-0.00	1.00		
Rel	0.00	0.21***	0.16***	0.13***	0.36***	0.38***	0.51***	0.09***	0.09***	0.08***	0.25***	1.00	
Gini	-0.13***	0.04*	-0.07***	-0.01	0.03*	0.09***	-0.00	0.03**	-0.07***	0.01	-0.11***	0.08***	1.00

\*\*\* $p < 0.001$  ; \*\* $p < 0.01$  ; \* $p < 0.05$

**Note:** MOEW = Moralization of excessive wealth, Eq = Equality, Pr = Proportionality, Loy = Loyalty, Auth = Authority, Pur = Purity, MOI = Moralization of inequality, Cons = Conservatism, SES = Socio-economic status, Gini = Gini Coefficient.

**Figure S1**  
*Correlation Matrix Plot of All Relevant Variables*



**Note:** In the shaded row, each cell contains a circle shaded blue or red depending on the sign of the correlation, and with the intensity of color scaled 0 – 100% in proportion to the magnitude of the correlation. MOEW = Moralization of excessive wealth, MOI = Moralization of inequality, SES = Socio-economic status, Gini = Gini Coefficient.



*Gaussian Models as Robustness Checks*

Our main analysis conducted a zero-inflated negative-binomial set of models because the distribution of the moralization of excessive wealth was extremely non-normal and overly dispersed. As a robustness check, we conducted our models as multilevel Gaussian models (which assumes a normal distribution) and present the results in table S2. Most results are the same with notable exceptions to the interaction of the endorsement of equality and Gini (which is non-significant in the zero-inflated model but significant in the Gaussian) and, while in the same direction, the interaction of the endorsement of proportionality and Gini (which is significant in the zero-inflated model but non-significant in the Gaussian model reported here). Holistically, these two differences in the significance of interaction terms are consistent with our general hypothesis that moral intuitions interact with broader economic institutions to predict moral judgments of excessive wealth across nations.

**Table S2***Multi-level Gaussian Models Predicting the Moralization of Excessive Wealth*

	Model 1	Model 2	Model 3	Model 4
(Intercept)	0.66*** (0.11)	0.37** (0.14)	0.85** (0.29)	-0.17 (0.63)
Care	-0.04 (0.02)	-0.03 (0.03)	-0.03 (0.03)	-0.30* (0.14)
Equality	0.36*** (0.02)	0.35*** (0.02)	0.35*** (0.02)	0.67*** (0.10)
Proportionality	-0.13*** (0.03)	-0.12*** (0.03)	-0.12*** (0.03)	0.09 (0.14)
Loyalty	-0.09** (0.03)	-0.11*** (0.03)	-0.11*** (0.03)	-0.07 (0.14)
Authority	-0.15*** (0.03)	-0.15*** (0.03)	-0.15*** (0.03)	-0.47** (0.17)
Purity	0.09*** (0.02)	0.08** (0.02)	0.08** (0.02)	0.52*** (0.13)
Moralization of Inequality	0.08*** (0.01)	0.07*** (0.01)	0.08*** (0.01)	0.07*** (0.01)
Age		0.00*** (0.00)	0.00*** (0.00)	0.00*** (0.00)
Gender		0.02 (0.03)	0.02 (0.03)	0.02 (0.03)
Religiosity		0.01 (0.01)	0.01 (0.01)	0.01 (0.01)
Conservatism		-0.02** (0.01)	-0.02** (0.01)	-0.02** (0.01)
Education		0.01 (0.01)	0.01 (0.01)	0.01 (0.01)
Status		0.02* (0.01)	0.02* (0.01)	0.02* (0.01)
Gini			-0.01 (0.01)	0.01 (0.02)
Care:Gini				0.01* (0.00)
Equality:Gini				-0.01*** (0.00)
Proportionality:Gini				-0.01 (0.00)
Loyalty:Gini				-0.00 (0.00)
Authority:Gini				0.01 (0.00)
Purity:Gini				-0.01*** (0.00)
AIC	12029.73	11350.79	11349.46	11325.91
Log Likelihood	-6004.87	-5659.40	-5657.73	-5639.96
Num. obs.	4342	4096	4096	4096
Num. groups: country	20	20	20	20
Var: country (Intercept)	0.06	0.06	0.05	0.05

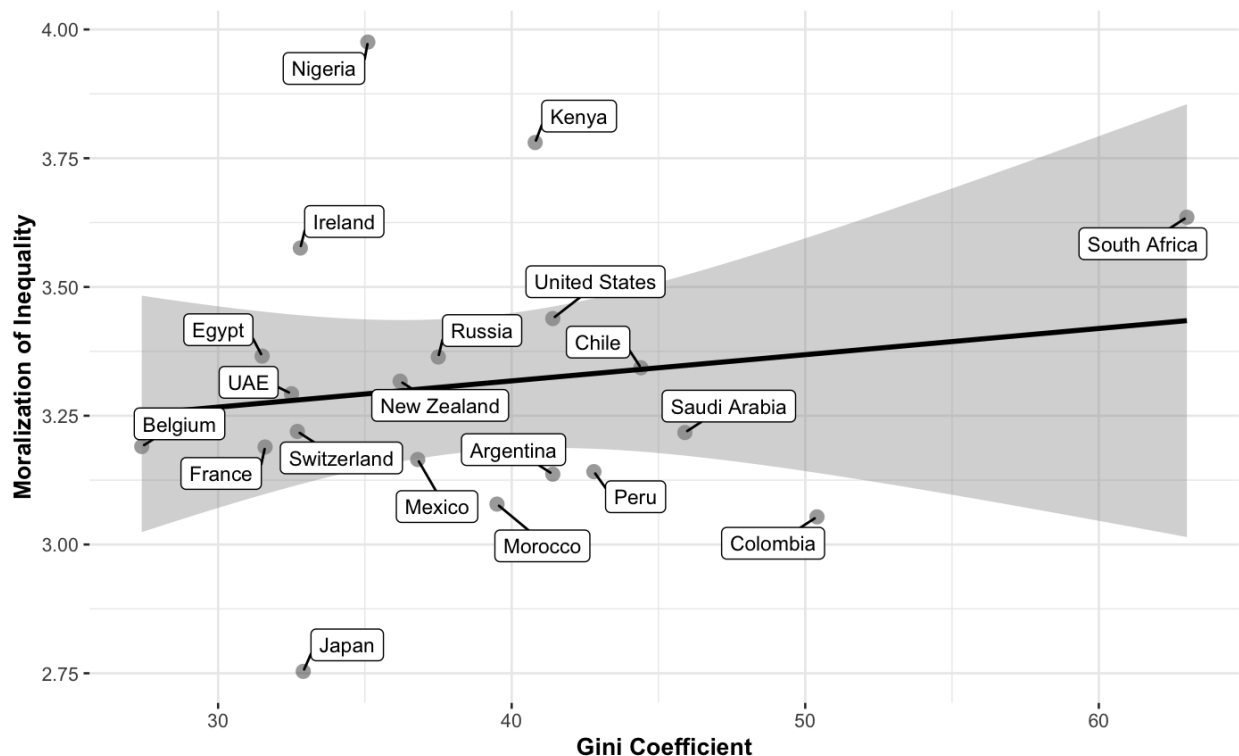
\*\*\* $p < 0.001$ ; \*\* $p < 0.01$ ; \* $p < 0.05$ **Note:** Values outside parentheses represent the coefficient estimate and the values inside parentheses represent the standard error.

### *The Gini Coefficient and the Moralization of Inequality*

In Figure S2 below, the plot shows the relationship between our main country-level factor, the Gini coefficient, and our control variable, the moralization of inequality. This relationship was not significant ( $r_\tau = -0.03$ ,  $p = .871$ ). This is the opposite relationship the Gini coefficient has with the moralization of excessive wealth which showed that the higher the inequality, the less moralization of excessive wealth. This suggests that the moral feelings about inequality are not cleanly related to moral feelings of excessive wealth at the individual and national level. Further research should explore this variation between the moralization of inequality and the moralization of excessive wealth across cultures since they appear to have a small but significant correlation ( $r = .11$ ,  $p < 0.001$ ).

#### **Figure S2**

*Plot of Gini Coefficient and Moralization of Inequality by Country*



**Note:** Gini coefficient is scored from 0-100 where a country with perfect equality in which everyone earns and owns the same amount of wealth has a Gini coefficient of zero while a country with perfect inequality in which one person owns and earns everything would have a Gini coefficient of 100.

*Dealing with Cross-National Non-Independence*

In our initial country-level analysis, we find that country-level Gini index of inequality was significantly associated with country-level moralization of excessive wealth ( $r_\tau = -0.43$ ,  $p = .007$ ; see Figure 2). However, because countries are connected in various ways (e.g. spatial proximity and shared cultural ancestry), many cross-national analyses may violate the assumptions of non-independence needed for such analysis, thus inflating the rates of false positives. In order to combat this issue, Claessens et al., 2023 recommend methods with additional controls to account for the non-independence of nations. Here we included two of these methods, controlling first for spatial similarity between nations, then for cultural similarity via linguistic proximity.

**Spatial Non-independence.** We followed the steps as outlined by Claessens et al., 2023. First, we fit a naive bayesian regression model predicting moralization of excessive wealth with the Gini coefficient, with set regularising priors on the intercept, slope, and residual variance. The effect of the Gini coefficient was found to be significantly negative, with an estimate of  $-0.02$  (95% CI  $[-0.03, -0.00]$ ), suggesting a slight decrease in the moralization of excessive wealth with an increase in inequality. These results shows a significant relation between the two factors, similar to our results of the Kendell correlation reported in the main sections of paper.

Next, in order to account for spatial non-independence, we fit another model, this time including a Gaussian Process (GP) over latitudes and longitudes for nations. This technique adds a random intercept for each nation, and these random intercepts are allowed to covary according to the distance between the coordinates <sup>6</sup>. This function processes variables to internally generate a normalized distance matrix for each case. It subsequently calculates a covariance function, which delineates the relationship between these distances and the covariance among nations. If there is spatial autocorrelation, the model will estimate strong spatial covariance between nations, which could soak up much

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<sup>6</sup> See McElreath, 2018 for more details on this method of dealing with spatial autocorrelation

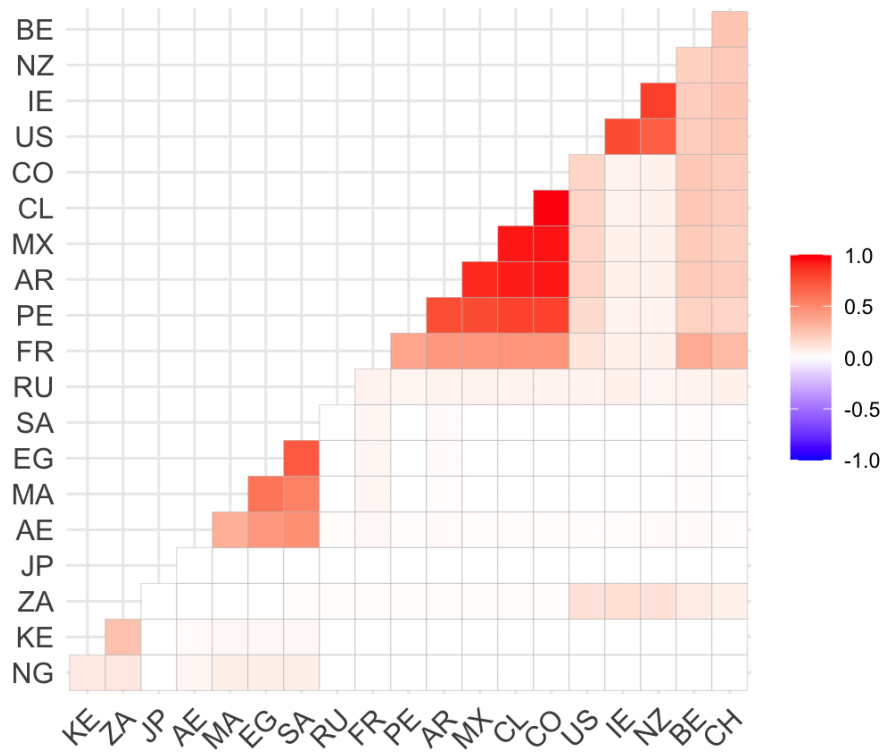
of the relationship we saw in the previous section.

This indeed soaked up our relationship, as the Gini coefficient was now found to be insignificantly associated with MOEW, with an estimate of -0.00 (95% CI, [-0.02, 0.01]). This suggests generally, that the relationship between inequality and moralization of excessive wealth may have to do with factors related to geographic proximity. This suggests a deeper question for further research to explore, is there any cross-cultural difference when we account for spatial auto-correlation?

**Cultural Phylogenetic Non-independence via Linguistic Proximity.** In addition to spatial similarity, it is also possible for nations to be culturally related and thus non-independent. For example, Spain and Mexico are half-way around the world from each other, but are culturally similar in many respects due to the influence of the Spanish colonialism. We thus should control for how countries are similar in culture.

As opposed, to spatial similarity, cultural similarity does not have a fixed coordinate system like longitude and latitude, proposing an issue for Gaussian Processes using the above method. Instead, Claessens et al., 2023 suggest another technique where we specify the covariance matrix in advance rather than estimate it in the model. In the case of cultural similarity, they suggest using the linguistic proximity between nations, weighted by the proportion of speakers of each language in each nation. Linguistic proximity expresses how closely related two languages are in the phylogeny of languages, which is then averaged over all languages spoken in each nation, weighted by the speaker percentages. To get a sense of the linguistic and cultural similarity, we plotted these scores in a correlation matrix below (See Figure S3). From this plot, we can see that majority Spanish-speaking nations have high linguistic proximity (i.e. cultural similarity), as do English-speaking nations, and Arabic-speaking nations.

We then used this linguistic proximity matrix in our modeling by specifying in advance that this is how our random effects should be correlated. Once again, as expected, this results in soaking up our significant association between gini and moralization of

**Figure S3***Plot of Cultural Similarity via Linguistic Proximity Across 20 Nations*

*Note: BE = Belgium, NZ = New Zealand, IE = Ireland, US = United States, CO = Colombia, CL = Chile, MX = Mexico, AR = Argentina, PE = Peru, FR = France, RU = Russia, SA = Saudi Arabia, EG = Egypt, MA = Morocco, AE = United Arab Emirates, JP = Japan, ZA = South Africa, KE = Kenya, NG = Nigeria*

excessive wealth, with an estimate of -0.01 (95% CI, [-0.03, 0.01]). This suggests that the association between country-level inequality and the moralization of excessive wealth may be related to cultural linguistic similarities, similar to the results of spatial similarity.

## S2. Mediation Analyses

Our epigraphs in the beginning of the main text refer to the moralization of excessive wealth in relation to religion and politics. We controlled for these factors in our main models and found moral concerns to be substantial predictors of MOEW, with conservatism having a significant effect, but not religiosity. Moral intuitions, however, could explain why so much of religious teachings and political rhetoric (especially by progressives) focus on the immorality of hoarding excessive amounts of money. Here, we explore the role each moral foundation played in mediating the relationship between (a) religiosity and (b) politics with the moralization of excessive wealth. We conducted multi-level mediation models using the the "lavaan" package (Rosseel, 2012) to see whether specific moral foundations mediate the relationship between political ideology, religiosity, and the moralization of excessive wealth. We summarize the results in Table S3 along with mediation path diagrams at the individual- and country-level in Figures S4 - S15.

**Table S3**

*Multi-level Mediation of Moral Foundations on the Relationship Between Predictors Conservatism and Religiosity with the Outcome Moralization of Excessive Wealth*

Predictor	Mediator	Est.	SE	p	Prop	Std. Est.
Pol Ideology	Care	0.000	0.000	.282	0.00	0.001
	Eq	-0.015	0.002	<.001***	25.0	-0.037
	Pr	-0.005	0.001	<.001***	8.30	-0.012
	Loy	-0.004	0.001	<.001***	6.70	-0.011
	Auth	-0.005	0.001	<.001***	8.30	-0.012
	Pur	0.003	0.001	<.001***	0.50	0.008
Religiosity	Care	0.001	0.001	.356	0.90	0.002
	Eq	0.012	0.002	<.001***	109.1	0.033
	Pr	-0.002	0.001	.001**	18.2	-0.006
	Loy	-0.009	0.002	<.001***	81.8	-0.026
	Auth	-0.012	0.002	<.001***	109.1	-0.032
	Pur	0.005	0.002	.055	0.455	1.30

\*\*\* $p < 0.001$ ; \*\* $p < 0.01$ ; \* $p < 0.05$

**Note:** MOEW = Moralization of excessive wealth, Pol Ideology = political ideology, Eq = equality, Pr = proportionality, Loy = loyalty, Auth = authority, Pur = purity, Est. = estimate, SE = standard error, p = p-value, Prop = proportion of mediation, Std. Est = standardized estimate.

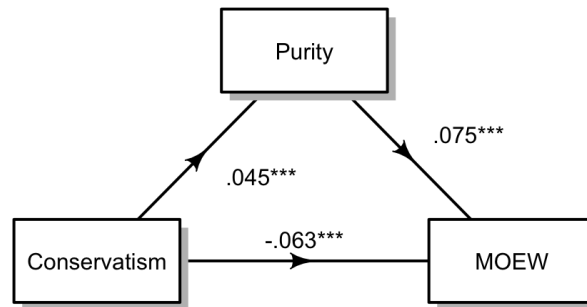
With political ideology as the predictor, we found that none of the moral foundations mediated the relationship between political ideology and MOEW at the country-level while all foundations except for care significantly mediated that link at the individual level. The proportion of mediation was highest for equality, indicating that equality can explain much of the relationship between political ideology and moralization of excessive wealth, with 25 percent of the proportion mediated. Additionally, as seen in the path diagrams, after controlling for conservatism, both purity and equality are significantly related to moralization of excessive wealth while proportionality, loyalty, and authority are negatively associated.

With religiosity as a predictor, we had similar results, with purity no longer being a significant mediator, which is expected given purity's tight relationship with religiosity. A major difference between the results of religiosity and conservatism is that many of the mediations of religiosity have exaggerated proportions. This is because the "proportions mediated", or the size of the average causal mediation effects relative to the total effect, is sensitive to the direct effect. Given that we had no significant direct effect for religiosity, many of our mediation effects were larger than the total effect, often times in the opposite direction, which is equivalent to suppression in ordinary regression, and would produce proportions much larger than 100 percent. These results are less relevant to our argument since there is no significant direct effect of religiosity to mediate.



**Figure S4**

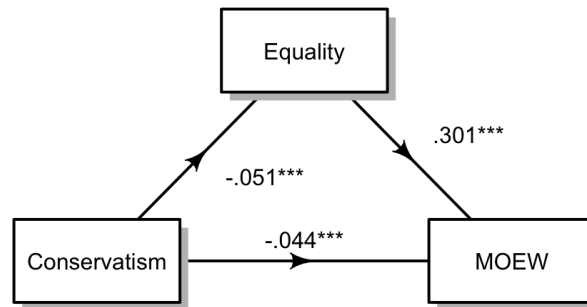
*Purity Mediating the Relationship Between Conservatism and the Moralization of Excessive Wealth (MOEW) at the Individual-level*



In Figure S4, we can interpret the individual paths from conservatism to purity and from purity to moralization of excessive wealth similarly. The former path means that if two people exhibited the same amount of moralization of excessive wealth, the person with one unit more in conservatism experienced a .045 unit increase in the endorsement of purity. The latter path indicates that if two people are the same level of conservatism, the person with one unit higher in the endorsement of purity had a .075 unit increase in the moralization of excessive wealth. Overall, the indirect path (political ideology > purity > moralization of excessive wealth) means that a unit increase in conservatism created 0.003 units of indirect effect ( $p < .001$ ).

**Figure S5**

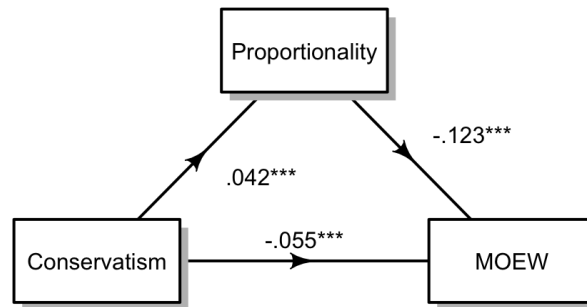
*Equality Mediating the Relationship Between Conservatism and the Moralization of Excessive Wealth (MOEW) at the Individual-level*



In Figure S5, we can interpret the individual paths from conservatism to equality and from equality to moralization of excessive wealth similarly. The former path means that if two people exhibited the same amount of moralization of excessive wealth, the person with one unit more in conservatism experienced .051 unit less endorsement of equality. The latter path indicates that if two people are the same level of conservatism, the person with one unit higher in the endorsement of equality had a .301 unit higher moralization of excessive wealth. Overall, the indirect path (political ideology > equality > moralization of excessive wealth) means that a unit increase in conservatism created -0.015 units of indirect effect ( $p < .001$ ).

**Figure S6**

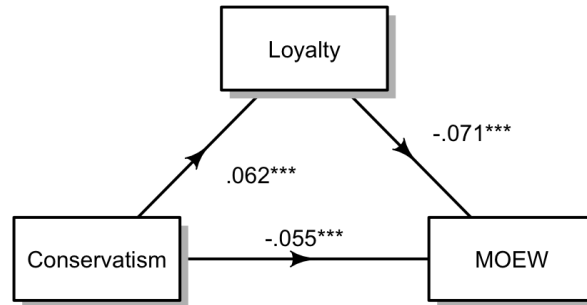
*Proportionality Mediating the Relationship Between Conservatism and the Moralization of Excessive Wealth (MOEW) at the Individual-level*



In Figure S6, we can interpret the individual paths from conservatism to proportionality and from proportionality to moralization of excessive wealth similarly. The former path means that if two people exhibited the same amount of moralization of excessive wealth, the person with one unit more in conservatism experienced a .042 unit increase in endorsement of proportionality. The latter path indicates that if two people are the same level of conservatism, the person with one unit higher in the endorsement of proportionality had a .123 unit decrease in moralization of excessive wealth. Overall, the indirect path (political ideology > proportionality > moralization of excessive wealth) means that a unit increase in conservatism created -0.005 units of indirect effect ( $p < .001$ ).

**Figure S7**

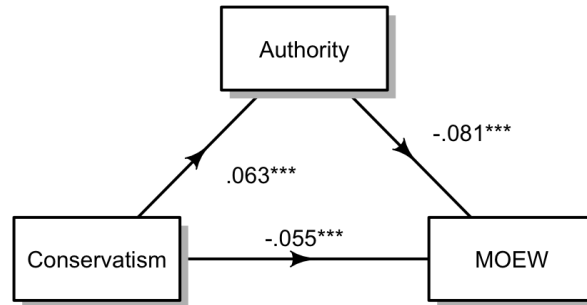
*Loyalty Mediating the Relationship Between Conservatism and the Moralization of Excessive Wealth (MOEW) at the Individual-level*



In Figure S7, we can interpret the individual paths from conservatism to loyalty and from loyalty to moralization of excessive wealth similarly. The former path means that if two people exhibited the same amount of moralization of excessive wealth, the person with one unit more in conservatism experienced .062 unit increase in endorsement of loyalty. The latter path indicates that if two people are the same level of conservatism, the person with one unit higher in the endorsement of loyalty had a .071 unit decrease in moralization of excessive wealth. Overall, the indirect path (political ideology > loyalty > moralization of excessive wealth) means that a unit increase in conservatism created -0.004 units of indirect effect ( $p < .001$ ).

**Figure S8**

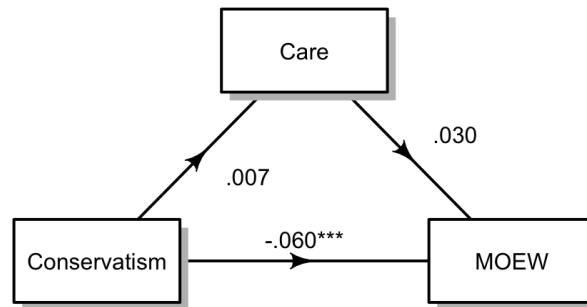
*Authority Mediating the Relationship Between Conservatism and the Moralization of Excessive Wealth (MOEW) at the Individual-level*



In Figure S8, we can interpret the individual paths from conservatism to authority and from authority to moralization of excessive wealth similarly. The former path means that if two people exhibited the same amount of moralization of excessive wealth, the person with one unit more in conservatism experienced .063 unit increase in endorsement of authority. The latter path indicates that if two people are the same level of conservatism, the person with one unit higher in the endorsement of authority had a .081 unit decrease in moralization of excessive wealth. Overall, the indirect path (political ideology > authority > moralization of excessive wealth) means that a unit increase in conservatism created -0.005 units of indirect effect ( $p < .001$ ).

**Figure S9**

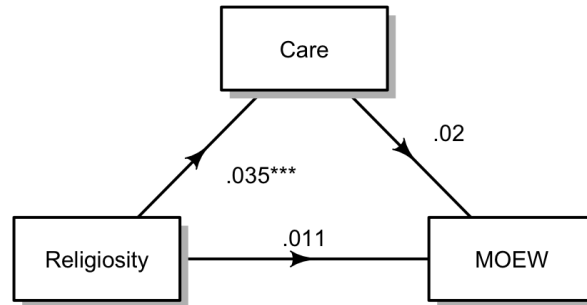
*Care Mediating the Relationship Between Conservatism and the Moralization of Excessive Wealth (MOEW) at the Individual-level*



In Figure S9, we can interpret the individual paths from conservatism to care and from care to moralization of excessive wealth similarly. The former path means that if two people exhibited the same amount of moralization of excessive wealth, the person with one unit more in conservatism experienced .007 unit increase in endorsement of care. The latter path indicates that if two people are the same level of conservatism, the person with one unit higher in the endorsement of care had a .030 unit increase in moralization of excessive wealth. Overall, the indirect path (political ideology > authority > moralization of excessive wealth) means that a unit increase in conservatism created 0.000 units of indirect effect ( $p = .282$ ).

**Figure S10**

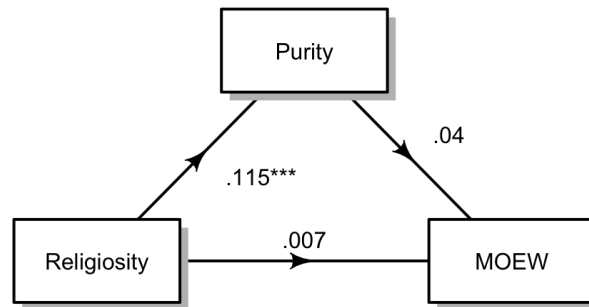
*Care Mediating the Relationship Between Religiosity and the Moralization of Excessive Wealth (MOEW) at the Individual-level*



In Figure S10, we can interpret the individual paths from religiosity to care and from care to moralization of excessive wealth similarly. The former path means that if two people exhibited the same amount of moralization of excessive wealth, the person with one unit more in religiosity experienced .035 unit increase in endorsement of care. The latter path indicates that if two people are the same level of religiosity, the person with one unit higher in the endorsement of care had a .02 unit increase in moralization of excessive wealth. Overall, the indirect path (religiosity > care > moralization of excessive wealth) means that a unit increase in conservatism created 0.001 units of indirect effect ( $p = .356$ ).

**Figure S11**

*Purity Mediating the Relationship Between Religiosity and the Moralization of Excessive Wealth (MOEW) at the Individual-level*

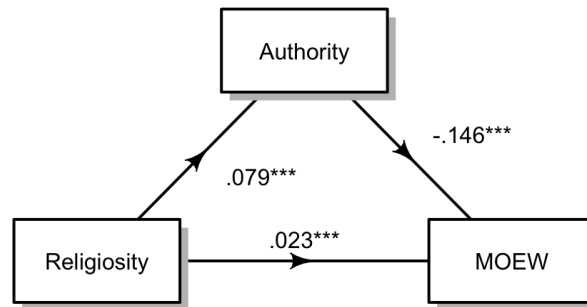


In Figure S11, we can interpret the individual paths from religiosity to purity and from purity to moralization of excessive wealth similarly. The former path means that if two people exhibited the same amount of moralization of excessive wealth, the person with one unit more in religiosity experienced .115 unit increase in endorsement of purity. The latter path indicates that if two people are the same level of religiosity, the person with one unit higher in the endorsement of purity had a .04 unit increase in moralization of excessive wealth. Overall, the indirect path (religiosity > purity > moralization of excessive wealth) means that a unit increase in conservatism created 0.005 units of indirect effect ( $p = .055$ ).



**Figure S12**

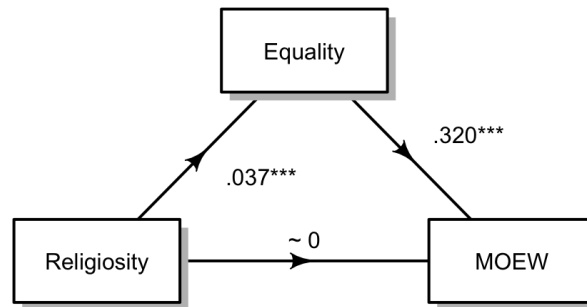
*Authority Mediating the Relationship Between Religiosity and the Moralization of Excessive Wealth (MOEW) at the Individual-level*



In figure S12, we can interpret the individual paths from religiosity to authority and from authority to moralization of excessive wealth similarly. The former path means that if two people exhibited the same amount of moralization of excessive wealth, the person with one unit more in religiosity experienced .079 unit increase in endorsement of authority. The latter path indicates that if two people are the same level of religiosity, the person with one unit higher in the endorsement of authority had a .146 unit decrease in moralization of excessive wealth. Overall, the indirect path (religiosity > authority > moralization of excessive wealth) means that a unit increase in conservatism created -0.012 units of indirect effect ( $p < .001$ ).

**Figure S13**

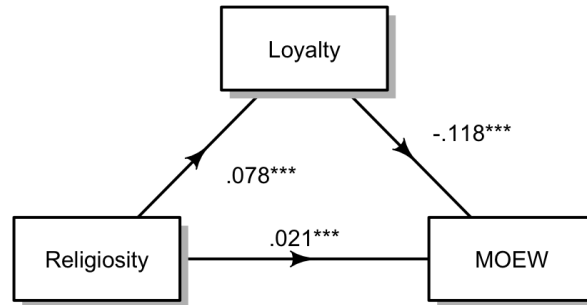
*Equality Mediating the Relationship Between Religiosity and the Moralization of Excessive Wealth (MOEW) at the Individual-level*



In Figure S13, we can interpret the individual paths from religiosity to equality and from equality to moralization of excessive wealth similarly. The former path means that if two people exhibited the same amount of moralization of excessive wealth, the person with one unit more in religiosity experienced .037 unit increase in endorsement of equality. The latter path indicates that if two people are the same level of religiosity, the person with one unit higher in the endorsement of equality had a .320 unit increase in moralization of excessive wealth. Overall, the indirect path (religiosity > equality > moralization of excessive wealth) means that a unit increase in conservatism created 0.012 units of indirect effect ( $p < .001$ ).

**Figure S14**

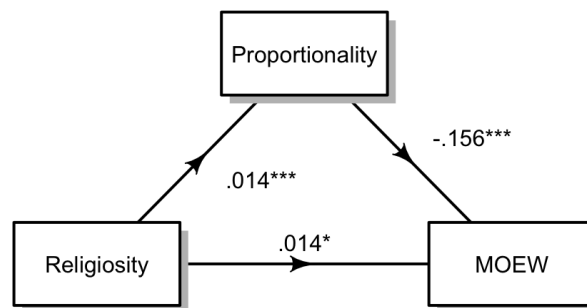
*Loyalty Mediating the Relationship Between Religiosity and the Moralization of Excessive Wealth (MOEW) at the Individual-level*



In Figure S14, we can interpret the individual paths from religiosity to loyalty and from loyalty to moralization of excessive wealth similarly. The former path means that if two people exhibited the same amount of moralization of excessive wealth, the person with one unit more in religiosity experienced .078 unit increase in endorsement of loyalty. The latter path indicates that if two people are the same level of religiosity, the person with one unit higher in the endorsement of loyalty had a .118 unit decrease in moralization of excessive wealth. Overall, the indirect path (religiosity > loyalty > moralization of excessive wealth) means that a unit increase in conservatism created -0.009 units of indirect effect ( $p < .001$ ).

**Figure S15**

*Proportionality Mediating the Relationship Between Religiosity and the Moralization of Excessive Wealth (MOEW) at the Individual-level*



In Figure S15, we can interpret the individual paths from religiosity to proportionality and from proportionality to moralization of excessive wealth similarly. The former path means that if two people exhibited the same amount of moralization of excessive wealth, the person with one unit more in religiosity experienced .014 unit increase in endorsement of proportionality. The latter path indicates that if two people are the same level of religiosity, the person with one unit higher in the endorsement of proportionality had a .156 unit decrease in moralization of excessive wealth. Overall, the indirect path (religiosity > proportionality > moralization of excessive wealth) means that a unit increase in conservatism created -0.002 units of indirect effect ( $p = .001$ ).

### **S3. Country-level Corruption and the Moralization of Excessive Wealth**

While our main hypotheses concerned how country-level economic inequality (i.e., the Gini coefficient) may influence the moralization of excessive wealth, country-level corruption may also influence the moralization of owning too much money. Instead of the mere presence of people who have a disproportionate amount of wealth, perhaps the ethics

surrounding how the wealth was gained and how the wealth is spent that determines whether people believe having the excessive wealth is wrong or not. It may not be wealth that corrupts (the soul of individuals), but rather corrupt practices (e.g., nepotism) result in extreme wealth of a few. This analysis was conducted as suggested by a reviewer, but we did not predict this relationship because while “corruption” at the country level has the same name as “corruption” of individuals’ souls, it is more related to moral parochialism and nepotism, which have been shown to be related to loyalty (and perhaps authority) rather than the moral foundation of purity. At the individual level of analysis, purity dictates staying away from things and practices that can stain, corrupt, or degrade the sanctity of human mind and/or body. Money, excessive amounts of it beyond what can be used to have a decent life, can be perceived as a means that permits people to do whatever they want, making them less cooperative, and hence less moral. To rule out the idea that country-level corruption shapes moralization of excessive wealth, we ran the following analyses.

### ***Method***

**Measure.** We used the Global Corruption Index (GCI) (Global Risk Profile, 2022) as our measure for country-level corruption. GCI aggregates the results of multiple subcategories including Corruption Perception, Corruption Experience, Citizen Voice and Transparency, Government Functioning and Effectiveness, Legal Context, Political Context, and White Collar Crimes.<sup>7</sup> GCI is scored on a scale of 0-100, where 0 represents the lowest risk of corruption and white collar crimes, and 100 corresponds to the highest risk of corruption and white collar crimes.

**Analytic Procedure.** With GCI measures for each of our 20 countries, we ran the same analytic procedure as the main paper. To examine the relationship between

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<sup>7</sup> We chose this measure over the widely used Corruption Perception Index (CPI) because the latter does not measure white collar crimes, activities such as tax fraud, money laundering, financial secrecy or illicit flows of money, which we believe is directly related to our idea of the morality of excessive wealth.

moral values and moralization of excessive wealth, we employed multilevel models to account for the clustered nature of our data. Our individual-level variables included self-report measures (care, equality, proportionality, loyalty, authority, purity, moralization of inequality, moralization of excessive wealth) and demographic variables (age, gender, subjective SES, political conservatism, religiosity, and education). Our country-level variable was the GCI ratings of corruption and Gini index of inequality. Based on the distribution of our dependent variable, which skews heavily on the lower end (the majority of people on average found excessive wealth either “slightly wrong” or “not wrong at all”), we employed four zero-inflated negative-binomial multilevel models, consecutively adding more control variables to the base model. We used the “lme4” package, version 4.0.1, in R programming language for statistical analysis.<sup>8</sup>

### **Results**

**Country-level Analysis.** The GCI was unrelated to the moralization of excessive wealth ( $r_\tau = -0.23$ ,  $p = .153$ ; see Figure S16) and unrelated to moralization of inequality ( $r_\tau = 0.12$ ,  $p = .455$ ).

**Multi-level Analysis.** Overall, when including corruption, our final model’s results remain similar in patterns of relationships — care ( $B = -0.57$ ,  $p = .04$ ), equality ( $B = 0.48$ ,  $p = .008$ ), purity ( $B = 0.68$ ,  $p = .006$ ), conservatism ( $B = -0.03$ ,  $p = .006$ ), and age ( $B = 0.01$ ,  $p < .001$ ) are significant predictors of the moralization of excessive wealth (MOEW) with some significant interaction terms between the Gini coefficient and both care ( $B = 0.02$ ,  $p = .01$ ) and purity ( $B = -0.01$ ,  $p = .04$ ) (See Table S4). As can be seen, country-level corruption does not predict moralization of excessive wealth, nor does it interact with individual-level moral intuitions to predict the outcome. Further, it does not add any predictive value in the multi-level linear models (Compare model 4 in Table S4 to model 4 in Table 2).

<sup>8</sup> <https://cran.r-project.org/web/packages/lme4/index.html>

**Table S4**

*Multilevel Zero-Inflated Negative Binomial Models Predicting the Morality of Too Much Money with both Gini and GCI as Country-level Predictors*

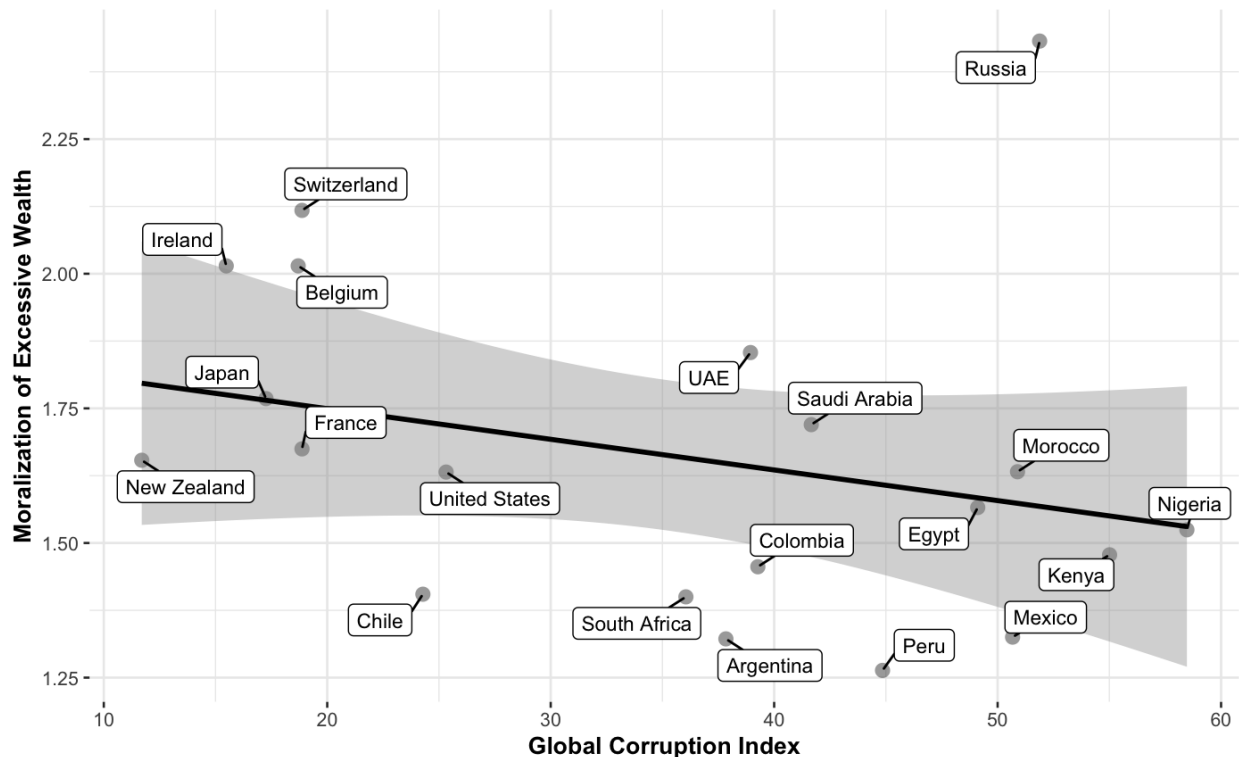
	Model 1	Model 2	Model 3	Model 4	Model 5
(Intercept)	-0.61***	-0.97***	-0.17	-1.77	-2.01*
Care	-0.13**	-0.10*	-0.10*	-0.61**	-0.57*
Equality	0.61***	0.60***	0.59***	0.50**	0.48**
Proportionality	-0.22***	-0.19***	-0.19***	0.39	0.42
Loyalty	-0.12**	-0.14**	-0.14**	0.15	0.16
Authority	-0.25***	-0.24***	-0.24***	-0.48	-0.49
Purity	0.15***	0.13**	0.14***	0.65**	0.68**
Moralization of Inequality	0.11***	0.10***	0.10***	0.10***	0.10***
Age		0.01***	0.01***	0.01***	0.01***
Gender		0.02	0.02	0.02	0.03
Religiosity		0.01	0.01	0.01	0.01
Conservatism		-0.03**	-0.03**	-0.03***	-0.03**
Education		-0.01	-0.01	-0.01	-0.01
Status		0.03*	0.03*	0.03*	0.02
Gini			-0.02	0.03	0.01
GCI			-0.01	-0.01	0.02
Care:Gini				0.01*	0.02**
Equality:Gini				0.00	0.00
Proportionality:Gini				-0.02*	-0.01
Loyalty:Gini				-0.01	-0.01
Authority:Gini				0.01	0.00
Purity:Gini				-0.01*	-0.01*
Care:GCI					-0.01
Equality:GCI					0.00
Proportionality:GCI					-0.01
Loyalty:GCI					-0.00
Authority:GCI					0.00
Purity:GCI					0.00
AIC	8897.55	8431.81	8430.74	8420.68	8420.14
Log Likelihood	-4438.78	-4199.91	-4197.37	-4186.34	-4180.07
Num. obs.	4342	4096	4096	4096	4096
Num. groups: country	20	20	20	20	20
Var: country (Intercept)	0.12	0.11	0.09	0.10	0.10

\*\*\* $p < 0.001$ ; \*\* $p < 0.01$ ; \* $p < 0.05$

**Note:** Numbers represent the coefficient estimate and asterisks represent significance.

**Figure S16**

*The Relationship Between the Global Corruption Index (GCI) and Moralization of Excessive Wealth*



**Note:** GCI is scored on a scale of 0-100, where 0 represents the lowest risk of corruption and white collar crimes, and 100 corresponds to the highest risk of corruption and white collar crimes.

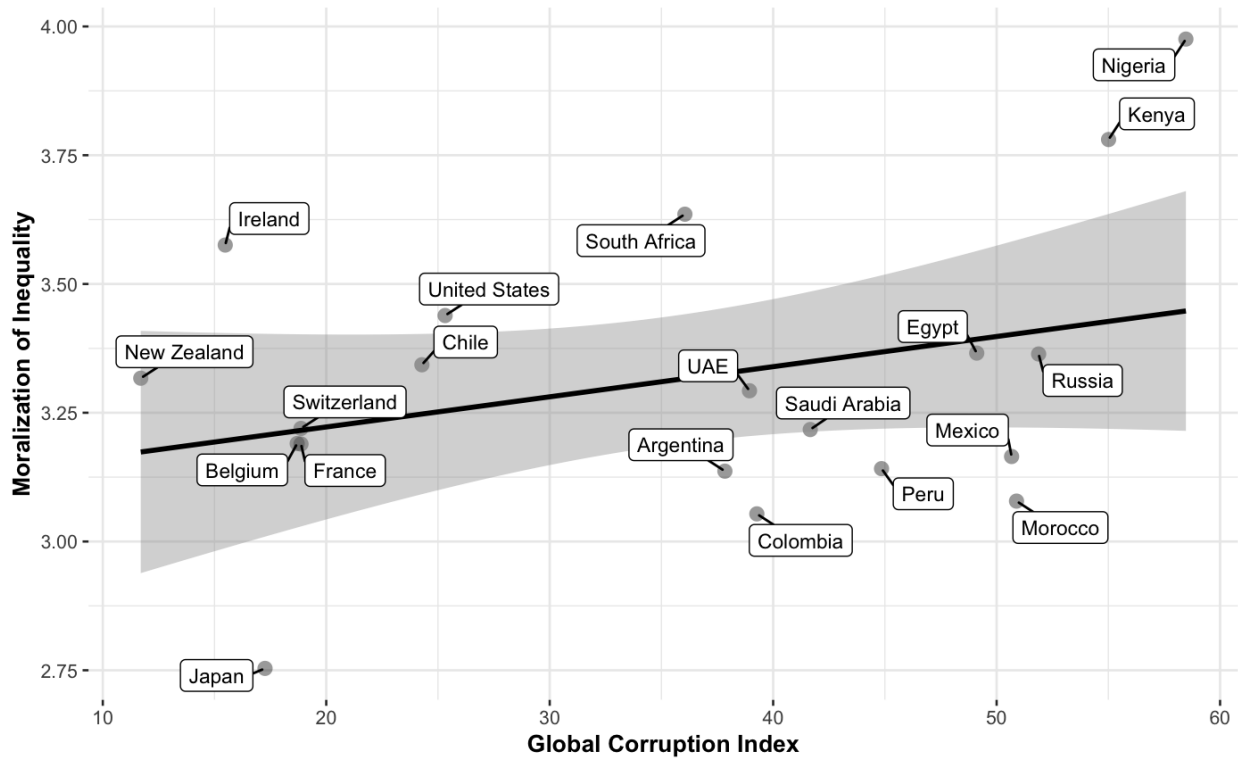
### *Gaussian Models as Robustness Checks*

Our main analysis conducted a zero-inflated negative-binomial set of models because the distribution of the moralization of excessive wealth was extremely non-normal and overly dispersed. As a robustness check, we ran our models as multilevel Gaussian models (which assumes a normal distribution that we did not have) in the same manner as earlier in this document and present the results in Table S5. Estimates are relatively similar to those in prior models. Notably, purity highly interacts with both country-level metrics (inequality and corruption) which is in line with the idea that moral intuitions, especially purity, interact with broader social-economic systems to shape the moralization



**Figure S17**

*The Relationship Between the Global Corruption Index (GCI) and Moralization of Inequality*



**Note:** GCI is scored on a scale of 0-100, where 0 represents the lowest risk of corruption and white collar crimes, and 100 corresponds to the highest risk of corruption and white collar crimes.

of excessive wealth.

**Table S5**

*Multi-level Gaussian Models Predicting the Moralization of Excessive Wealth with Corruption and Inequality as Country-level Variables*

	Model 1	Model 2	Model 3	Model 4	Model 5
(Intercept)	0.66***	0.37**	0.90**	-0.14	-0.53
Care	-0.04	-0.03	-0.03	-0.29*	-0.26
Equality	0.36***	0.35***	0.35***	0.67***	0.72***
Proportionality	-0.13***	-0.12***	-0.12***	0.09	0.13
Loyalty	-0.09**	-0.11***	-0.11***	-0.06	-0.06
Authority	-0.15***	-0.15***	-0.15***	-0.47**	-0.49**
Purity	0.09***	0.08**	0.08**	0.52***	0.54***
Moralization of Inequality	0.08***	0.07***	0.08***	0.07***	0.07***
Age		0.00***	0.01***	0.01***	0.01***
Gender		0.02	0.02	0.03	0.03
Religiosity		0.01	0.01	0.01	0.01
Conservatism		-0.02**	-0.02**	-0.02**	-0.02**
Education		0.01	0.01	0.01	0.01
Status		0.02*	0.02*	0.02*	0.02*
Gini			-0.01	0.01	0.01
GCI			-0.00	-0.01	0.02*
Care:Gini				0.01	0.01**
Equality:Gini				-0.01***	-0.01**
Proportionality:Gini				-0.01	-0.01
Loyalty:Gini				-0.00	-0.01
Authority:Gini				0.00	0.00
Purity:Gini				-0.01***	-0.01***
Care:GCI					-0.01*
Equality:GCI					-0.01*
Proportionality:GCI					-0.01
Loyalty:GCI					-0.00
Authority:GCI					0.00
Purity:GCI					-0.01***
AIC	8897.55	8431.81	8430.74	8420.68	8420.14
Log Likelihood	-4438.78	-4199.91	-4197.37	-4186.34	-4180.07
Num. obs.	4342	4096	4096	4096	4096
Num. groups: country	20	20	20	20	20
Var: country (Intercept)	0.12	0.11	0.09	0.10	0.10

\*\*\* $p < 0.001$ ; \*\* $p < 0.01$ ; \* $p < 0.05$

**Note:** Numbers represent the coefficient estimate and asterisks represent significance.

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