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**Self-construals predict Personal Life Satisfaction with Different Strengths across Societal Contexts differing in Religious Heritage, National Wealth, and Economic Inequality**

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### Abstract

Previous research has found that several dimensions of self-construal predict personal life satisfaction positively. Here, we aim to explore to what extent the pan-cultural pattern of relationships between multi-component self-construal and personal life satisfaction is moderated by the national-contextual variables of religious heritage, national wealth, and economic inequality. Our results indicate that religious heritage showed the biggest impact on these relationships, interacting with three of the self-construal components to predict personal life satisfaction: The positive relationship between self-expression (vs. harmony) and personal life satisfaction was not found in Muslim countries and self-containment (vs. connectedness to others) positively predicts personal life satisfaction more strongly in Protestant countries. Moreover, national wealth changes the valence of the relationship between self-reliance (dependence on others) and personal life satisfaction from being negative in wealthy countries to positive in the poorest countries. However, economic inequality did not qualify the pan-cultural relationship between any component of self-construal and personal life satisfaction. These results show the importance of considering the impact of national religious and economic context on an individual's psychosocial processes and suggest the value of incorporating an ecocultural framework for a fuller understanding of individual adaptation to society.

*Keywords: Multicomponent self-construal, religious heritage, national wealth, economic inequality, personal life satisfaction.*



**Self-construals predict Personal Life Satisfaction with Different Strengths across Societal Contexts differing in Religious Heritage, National Wealth, and Economic Inequality**

Understanding the antecedents of personal life satisfaction has been a major aim of psychological research over many decades (Diener, 1984; Diener et al., 1995; Oishi et al., 2011). Previous research has shown that national individualism and independent forms of personal self-construal are among these predictors (Diener et al., 1995; Krys et al., 2019; 2021). In a recent 50-nation study, Krys et al. (2021) found that four forms of independent self-construal and one form of interdependent self-construal were associated with personal life satisfaction around the world: Individuals, as well as societies, scoring higher in self-expression (vs. harmony), self-direction (vs. reception to influence), decontextualized (vs. contextualized) self-understandings, and consistency (vs. variability) scored higher in personal life satisfaction; individuals, but not societies, scoring higher in connection to others (vs. self-containment) also scored higher in personal life satisfaction. Although knowing the pan-cultural relationships between dimensions of self-construal and personal life satisfaction is of much value, it is still unknown how this pattern of relationships may differ when considered against a background of cultural factors contextualizing these psychological processes (Smith & Bond, 2019).

Using a socio-ecological approach (Uskul & Oishi, 2018), we aim to explore how major features of the cultural context in which individuals are embedded might qualify the relationships between individual differences in dimensions of self-construal and personal life satisfaction previously reported by Krys et al. (2021). Research has shown that both religious and economic factors of national-cultural context have a strong impact on national cultural characteristics (Georgas, Van de Vijver, & Berry,

2004; Inglehart & Baker, 2000) and on individual psychological processes and outcomes (Cohen, 2009; Jetten et al., 2021; Rodríguez-Bailón et al., 2020). In the current paper, we link these two levels of analysis, the national-cultural and the individual, to explore the roles of religious heritage, national wealth, and economic inequality as potential contextual moderators of the individual-level relationships between dimensions of self-construal and personal life satisfaction.

### **Multi-component Self-construal and Personal Life Satisfaction.**

Individuals differ both within and across cultures in their views of the self and their relation to others, i.e., their self-construals (Markus & Kitayama, 1991, 2010). Initially, two dimensions of self-construal were proposed: an independent self-construal that reflects a view of the self as unitary, stable, and separate from the social context, and an interdependent self-construal which reflect a fluid and contextually embedded self. However, subsequent research has revealed that numerous ways of being independent or interdependent do not necessarily co-occur (Gabriel & Gardner, 1999; Harb & Smith, 2008; Kashima, 2000; Kitayama et al., 2009). Extending these initial results, Vignoles et al. (2016) developed a multifaceted approach to conceptualizing and measuring the self-construals of individuals, amplifying the prevailing cultural models of selfhood in different parts of the world.

This multi-component approach to self-construal currently distinguishes eight dimensions of self-construal, each of which varies from an independent pole to an interdependent pole (Vignoles et al., 2016; Yang, 2018). These contrasting dimensions are: (1) Defining the self: Different vs Similar to Others; (2) Experiencing the self: Self-containment vs Connection to Others; (3) Making decisions: Self-direction vs Receptiveness to Influence; (4) Looking after oneself: Self-reliance vs Dependence on Others; (5) Moving between contexts: Consistency vs Variability; (6) Communicating

with others: Self-expression vs Harmony; (7) Dealing with conflicting interests: Self-interest vs Commitment to Others; (8) Importance of context in understanding the self: Decontextualised vs Contextualised. Distinguishing these dimensions of self-construal has been useful in making more precise predictions of several outcomes, including measures of well-being and mental health (Krys et al., 2021; Smith, Ahmad et al., 2016; Smith et al., 2020), communication styles (Smith, Vignoles et al., 2016), environmental values (Duff et al., 2022), and cognitive, affective, and motivational tendencies (Yang, 2018).

Although the concept of subjective well-being is multi-faceted (Krys et al. 2021), one commonly used measure refers to people's evaluations of their lives, namely personal life satisfaction (Diener et al., 1995). Krys et al. (2021) explored how culture-level variations in self-construal predicted differences in the average level of personal life satisfaction across 50 countries. They found that personal life satisfaction was highest in countries where the prevailing cultural model of selfhood emphasized self-expression (vs. harmony), self-direction (vs. receptiveness to influence), consistency (vs. variability), and a decontextualized (vs. contextualized) self.

Although their primary focus was on culture-level variation, Krys et al. (2021) reported supplementary analyses exploring individual-level relationships between these eight self-construals and personal life satisfaction. This individual level of analysis revealed a similar, but not identical, pattern to that at the cultural level: Individuals who construed themselves as more self-expressive, self-directed, consistent across contexts, and defined their selves by personal rather than contextual features, but also those who saw themselves as more connected to others, reported higher personal life satisfaction. Self-construal dimensions of self-reliance, difference, and self-interest were not related to personal life satisfaction at either level of analysis.

Despite detecting this pan-cultural pattern of individual-level associations between five of the self-construal components and personal life satisfaction, Krysa et al. (2021), did not explore whether any of these eight associations might be qualified by national-contextual features of the countries where the respondents lived. Fully understanding psychosocial outcomes (e.g., personal life satisfaction) requires the understanding not only of how individual differences (e.g., self-construals) affect such outcomes, but also how national-contextual features and interactions between individual differences and national-contextual features also affect them (Smith and Bond, 2019). National-contextual features might position personal life satisfaction of some groups differently with respect to one another —i.e., positioning effects— and/or difference the strength of linkage between self-construal and personal life satisfaction —i.e., linking effects (Bond & Van de Vijver, 2011).

To understand how contextual variables might affect individuals psychologically, we adopt a socio-ecological approach (Berry, 1976; Georgas, et al., 2004; Oishi, 2014; Uskul & Oishi, 2018). According to the contextual taxonomy identified by Georgas and colleagues (Georgas & Berry, 1995; Georgas et al., 2004), six inter-related domains of socio-ecological context are hypothesized to affect individuals psychologically: ecology, economy, education, mass communication, population, and religious heritage.

From these six domains, economy and religious heritage are particularly relevant because they have been shown to predict national-cultural values in comparison with the other four (Georgas et al., 2004; Inglehart & Baker, 2000). For instance, Georgas et al., (2004) aggregated countries according to their features in these six categories and checked their effects on a set of national-cultural values (e.g., Affective autonomy, hierarchy). On average, the religion and economy clusters showed the largest effect size

in this set of variables, suggesting that religion and economy are the ecological variables with the strongest impact on individuals. Therefore, the contextual impact of religious and economic factors seems the best candidates to moderate the pan-cultural effects between different self-construals and personal life satisfaction

### **Contextual Effects of Religious Heritage and the Economy**

Countries and individuals differ qualitatively in terms of their religious heritage, e.g., Catholic, Protestant, Orthodox, Muslim, or Buddhist traditions (Georgas et al., 2004). By religious heritage we mean a country's heritage related to its religious tradition (Saroglou, 2019). Each of the religious heritages chosen in this research is associated with different levels of contemporary national levels of secularism, which could be considered an outcome of historical processes initiated in part by that religious heritage. But that outcome is not a target of interest in this study.

Previous research has shown that the religious heritage of a country predicts differences in a large variety of psychosocial outcomes, such as personal traits, educational attainment, economic preferences, and moral values (Cohen, 2009; Georgas et al., 2004; Norenzayan, 2016; Saroglou, 2019; White, Muthurkrishna, & Norenzayan, 2021). These effects of the religious heritage of a country on cultural beliefs, practices, and institutions are not restricted to those inhabitants who are personally religious, however, and they may persist even when the country has moved towards secularism over time (Inglehart & Baker, 2000).

Research has explored how religious affiliations are related to personal life satisfaction. For instance, Ngamaba and Soni (2018) found that Catholics, Protestants, and Buddhists reported more personal life satisfaction than other religious groups, whereas the Orthodox had the lowest level of personal life satisfaction. However, initial work has suggested that religious heritage does not predict personal life satisfaction at

the country level (Georgas et al., 2004). Crucially for present purposes, it is unknown how religious heritage affects the antecedents of personal life satisfaction. Here, we aim to explore the role of countries' religious heritage as potential moderators of the associations between dimensions of self-construal and personal life satisfaction among individuals in each country, i.e., a cross-level analysis.

The domain of economy has also been shown to have a significant impact on individual outcomes. At the country level, in the earlier stages of economic growth, national wealth and personal life satisfaction of a nation's members are positively related; however, once a country is wealthy enough to cover the basic needs of most of its population, that relationship disappears (Easterlin, 1995; Layard, 2005). Nevertheless, it has been shown that in the short run, but not in the long run, changes in the wealth of a country are related positively to changes in the personal life satisfaction of its population (Easterlin et al., 2010).

Crucial for the current research is how national wealth might interact with the individual-level antecedents of life satisfaction. In an early paper in this area, Oishi, Diener, Lucas, and Suh (1999) found that individuals' satisfaction with their household finances was a stronger predictor of personal life satisfaction among those living in poorer rather than richer nations. In the current research, we focus on national wealth as a contextual variable that might qualify the relationships between multi-component self-construal and personal life satisfaction.

In addition to national wealth, the level of economic inequality within a country is an important economic factor that can influence psychosocial realities (Rodríguez-Bailón et al., 2020; Wilkinson & Pickett, 2018). In this regard, the relationship between economic inequality and personal life satisfaction is controversial. Previous studies have shown that there is a negative relationship between economic inequality and personal

life satisfaction (Alesina et al., 2004; Delhey & Dragolov, 2013; Oishi et al., 2011), a positive relationship between the two (Cheung, 2015; Kelley & Evans, 2016), or no significant relationship at all (Veenhoven, 2005).

Addressing these conflicting findings, Schneider (2019) showed that there are contextual effects of economic inequality on subjective social class, likely arising because higher (vs. lower) economic inequality leads individuals to feel less wealthy (Sánchez-Rodríguez et al., 2019). Given that subjective social class is an antecedent of personal life satisfaction (Tan et al., 2020), the negative impact of economic inequality on subjective social class might lead to lower personal life satisfaction. Moreover, economic inequality affects the relationship between subjective social class and personal life satisfaction, increasing the importance of the former in determining the latter (Schneider, 2019). So, economic inequality seems to interact with some antecedents of personal life satisfaction. Pursuing this idea, we aim to explore to what extent the level of economic inequality might moderate the relationship between multi-component self-construal and personal life satisfaction.

### **The Present Research**

The current paper aims to provide a more fine-grained understanding of the relationships between multi-component self-construal and personal life satisfaction through multi-level analyses of the data previously reported by Kryś et al. (2021). Previously, Kryś et al. focused on country-level relationships—examining whether average levels of personal life satisfaction would vary across societies with different prevailing cultural models of selfhood; they included individual-level associations in supplementary analyses for control purposes but did not examine the possibility that the pan-cultural pattern of these associations may be moderated by aspects of national context—i.e., linking effects (Bond & Van de Vijver, 2011).

Our current analyses extend this work by focusing on the individual-level relationships between dimensions of self-construal and personal life satisfaction by exploring how religion—i.e., religious heritage at the country level—and fundamental features of that country’s national economy—i.e., wealth and economic inequality—may qualify the pan-cultural associations reported by Krys et al. (2021). Additionally, we test the direct impact of these contextual features on personal life satisfaction. Figure 1 summarizes the conceptual aims of the current research.

## **Method**

### **Participants and Design**

We extracted data from a larger cross-cultural investigation concerning cultural factors related to happiness (Krys et al., 2020). Data were collected from a total of 13,352 participants in 50 countries and territories across the five continents: Africa (Nigeria, Ghana), Asia (Bhutan, Indonesia, China, Malaysia, Japan, Korea, Hong Kong S.A.R., China, Russia, Taiwan, Iran, Turkey, Pakistan, Saudi Arabia), Europe (Italy, Serbia, Hungary, Romania, France, United Kingdom, Switzerland, Ireland, Poland, Portugal, Slovakia, Greece, Norway, Lithuania, Luxemburg, Bulgaria, Croatia, Czech Republic, Germany, Austria, Estonia, Ukraine, Netherlands, Iceland, Georgia), North and South America (Canada, United States, Brazil, Argentina, Chile, El Salvador, Colombia, Mexico, Guatemala), and Oceania (Australia) between 2017 and 2019. Ethical approval for the study was provided by the Psychology Ethics Committee at the head researchers’ universities. Additionally, local teams were instructed to obtain, if necessary, ERB approvals from their local boards.

We excluded respondents whose answers showed evidence of careless completion (e.g., those suspected of being duplicate cases, showing excessively low variance across items, or showing a Christmas-tree pattern of answers). We also



excluded participants from Argentina, Indonesia, and the first wave of the Bulgarian sample because of low reliability coefficients in the multi-component self-construal scale. After these exclusions, the final sample consisted of 12,637 participants (84.1% undergraduate students and 15.7% general population) from 48 countries; 59.7 % of the participants were women, ranging in age from 17 to 94 years old ( $M = 25.10$ ;  $SD = 9.40$ ).

## **Measures**

### ***Multi-component Self-construal***

We used the Culture and Identity Research Network Self-Construal Scale Version 3 (CIRN-SCS-3; Krys et al., 2020; Yang, 2018) to measure participants' endorsement of different dimensions of self-construal. Specifically, we measured the eight dimensions of self-construal, using 6 items for each dimension: (1) Difference versus Similarity (e.g., 'You like being similar to other people'); (2) Self-Containment versus Connectedness to Others (e.g., 'If someone in your family achieves something, you feel proud as if you had achieved something yourself'); (3) Self-Direction versus Receptiveness to Influence (e.g., 'You usually ask your family for approval before making a decision'); (4) Self-Reliance versus Dependence on Others (e.g., 'In difficult situations, you tend to seek help from others rather than relying only on yourself'); (5) Self-Expression versus Harmony (e.g., 'You prefer to preserve harmony in your relationships, even if this means not expressing your true feelings'); (6) Self-Interest versus Commitment to Others (e.g., 'You value good relations with the people close to you more than your personal achievements'); (7) Consistency versus Variability (e.g., 'You act very differently at home compared to how you act in public'); and (8) Decontextualized versus Contextualized Self (e.g., 'Someone could understand who you are without needing to know about your social standing').

Each subscale includes a mixture of direct (i.e., independence) and reversed (i.e., interdependence) items. These items were measured on a 9-point Likert scale. (1: *doesn't describe me at all*; 3: *describes me a little*; 5: *describes me moderately*; 7: *describes me very well*; 9: *describes me exactly*, with the 2, 4, 6, 8 response options left blank in between). We adjusted items for acquiescent response style by ipsatizing raw responses before calculating reliabilities and scale scores. See Supplemental Material for all dimension reliabilities by country.

### ***Personal Life Satisfaction***

We used a slightly adapted version of the Satisfaction with Life Scale (SWLS, 5 items, e.g., “The conditions of your life are excellent”, Diener et al., 1985) on a 9-point Likert scale. (1: *doesn't describe me at all*; 3: *describes me a little*; 5: *describes me moderately*; 7: *describes me very well*; 9: *describes me exactly*, with the 2, 4, 6, 8 response options left blank in-between). To match the format of the self-construal scale, items were worded in the second person (e.g., “your” rather than “my”), and we used the same 9-point response scale. See Supplemental Material for all reliabilities by country of the SWLS.

### ***Sociodemographic Variables***

Participants indicated their gender, age, and whether they were students or from the general population. We used these measures as control variables.

### ***Religious Heritage***

We considered religious heritage to be the religious tradition to which a country has been historically ascribed (Georgas et al., 2004). We differentiated five major religious heritages among the countries in our sample: Catholic, Protestant, Orthodox, Muslim, and Buddhist. We used the Religious Characteristics of States Dataset Project 2015 (Brown & James, 2019) to help us to determine the religious heritage of each

country. This dataset shows the percentage of individuals by country belonging to a particular religion. We considered that a country has a particular religious heritage according to the biggest percentage of individuals belonging to that religious affiliation.

In most cases, percentage of individuals belonging to that religious affiliation was enough to consider that a country has a particular religious heritage. However, there are countries where the use of this criterion is problematic because (1) there are similar number of citizens of two denominations and/or (2) the number of citizens identifying with any denomination is very low which means that most of the inhabitants are secular (the countries bolded in Table S3). In these controversial cases, we chose that religious heritage based on historical and political evidence. For instance, the United Kingdom has a similar number of Catholics and Protestant citizens (8.72% and 8.04%, respectively), and these percentages are quite low which suggest that it is a secular country. However, in the UK, the head of state (the Queen) is also head of the Church of England, and certain bishops of the Church of England automatically have seats in the House of Lords, whereas Catholic bishops in the UK have no such political status. Thus, from a political perspective, the UK is surely a Protestant country, not a Catholic one. Moreover, the religious heritage does not change even if these percentages have varied in the last years, at least in the short run. Therefore, even taking data of adherence by each religion from 2015 (the last available) the religious heritage of a nation should not change.

### ***National Wealth***

We used the GNI per capita index as a measure of the country's wealth. We used GNI per capita expressed in purchasing power parity (PPP) to eliminate effects of the differences in price levels between countries. We took the country's index from the year 2018, which was the year when most data collection took place by the World Bank

(2020a). Given that a certain increment of wealth (e.g., \$1) will likely have a higher economic impact at lower levels of wealth than at higher levels of wealth, we log-transformed this score to attenuate these differences (e.g., Li et al., 2019).

### *Economic Inequality*

We used the Gini coefficient as the index of economic inequality. This coefficient ranges from 0, i.e., every inhabitant has the same income to 1, i.e., one individual receives all available income. So, higher scores indicate greater economic inequality. We took the country's GINI index for 2018, or the closest available earlier year, from the World Bank (2020b). We completed the indexes that were not available from the World Bank with the OECD (OECD, 2020) and CIA (Central Intelligence Agency, 2020) data sets. GINI indices in our sample ranged from .24 in Slovakia to .54 in Brazil, covering almost the full range of global variation (from .24 in Slovakia to .56 in Sao Tome and Principe [World Bank, 2020a]). The data of religious heritage, national wealth, and economic inequality by country can be found in the Supplementary Material.

## **Results**

We used multilevel modelling from the lme4 package for R software (Bates et al., 2015) to test whether the eight different components of self-construal (Level 1) interact with religious heritage, national wealth, and economic inequality (Level 2) to predict personal life satisfaction (Level 1), after controlling for differences in age, gender (0 = woman, 1 = man), and sample type (students = 1 vs. general population = 2). Age, national wealth, and economic inequality were grand mean-centered.

Given that religious heritage is a multi-categorical variable with five groupings, we used a contrast code for analyzing our data. We coded 1 for the target category, -1 for our first category of reference (i.e., Catholic), and 0 for everything else. Then, we re-

ran the analyses to calculate the effects of the religious heritage - Catholic using Orthodox as the second category of reference. Thus, the effect of each contrast was based on comparing each category of religious heritage against the average of the other categories. If, for example, Protestant heritage were to interact with a dimension of self-construal to predict personal life satisfaction, it would mean that in Protestant countries that relationship is different from the average pancultural relationship across religious heritage groups.

We then conducted several multilevel analyses to check which model fits better. Model 0 was an intercept-only model; this model showed an intraclass correlation of 0.13, indicating that around 13% of the variance in personal life satisfaction was between samples and 87% was within samples. Model 1 included age, gender, and sample type to control for these variables. Model 2 added country-level main effects of religious heritage, national wealth, and economic inequality.

Model 2 provided a significantly better fit to the data compared to Model 1:  $\chi^2(6) = 22.33, p < .01$  (see Section 3 in the Supplementary Material for further details of these models). Two religious heritages significantly predicted personal life satisfaction: Participants residing in Buddhist countries reported lower scores in personal life satisfaction  $b = -.67, p < .001, 95\% \text{ CI} = [-1.03, -0.31]$ , whereas those in Catholic countries reported higher personal life satisfaction  $b = .40, p = .001, 95\% \text{ CI} = [0.16, 0.62]$ .

Next, we conducted eight parallel sets of models separately including each of the eight self-construal dimensions. Models 3a to 3h added a main effect of each dimension of self-construal to personal life satisfaction, and Models 4a to 4h added the cross-level interaction between each dimension of self-construal and religious heritage, national wealth, and economic inequality. Given that we conducted multiple tests, we used a

conservative approach to interpret the results of the single interactions by adopting a Holm-Bonferroni sequential adjustment. We started by taking each group of eight p-values for eight parallel tests of a given parameter for different self-construal dimensions. We compared the *smallest* p-value to  $.05/8 = .00625$ . If that was significant, we then compared the next smallest p-value to  $.05/7 = .00714$ . If that was significant, we then compared the next smallest p-value to  $.05/6 = .00833$  and so on, until we reached a result that does not meet the threshold. Nevertheless, given that this conservative approach increases the risk of Type II errors, we considered those p-values that did not meet the threshold, but they were lower than .01 as attaining marginal significance in order to balance Type I vs Type II error trade-offs. For the sake of parsimony, we report here the last model to show a significant improvement fit each dimension of self-construal (see Section 4 in the Supplementary Material for details of all models).

*Self-direction (vs. receptiveness to influence)*. Consistent with the analyses reported in Kryś et al. (2021), Model 3a showed that individuals who saw themselves as more self-directed reported higher personal life satisfaction across the sample as a whole  $b = .05, p < .001, 95\% \text{ CI} = [0.03, 0.08]$ . Model 4a, including cross-level interactions did not provide a significantly better fit to the data compared to Model 3a:  $\chi^2(6) = 8.11, p = .23$ . Therefore, the previously reported relationship between self-direction versus receptiveness to influence dimension and personal life satisfaction was not significantly moderated by economic or religious context (see Table S4).

*Self-expression (vs. harmony)*. As reported in Kryś et al. (2021), Model 3b showed that those who saw themselves as more self-expressive reported higher personal life satisfaction  $b = .13, p < .001, 95\% \text{ CI} = [0.11, 0.15]$ . Model 4b provided a significantly better fit to the data compared to Model 3b:  $\chi^2(6) = 24.21, p < .001$  (see

Table S5). Only one of the five religious heritages significantly interacted with the Self-expression versus harmony dimension to predict personal life satisfaction: Muslim heritage ( $b = -.09, p = .005, 95\% \text{ CI} = [-0.16, -0.03]$ ). Simple slopes revealed that there is not a significant relationship between Self-expression (vs. harmony) and personal life satisfaction in Muslim-heritage countries ( $b = -.01, p = .88$ , see Figure 2).

*Consistency (vs. variability)*. As described in Krys et al. (2021), Model 3c showed that individuals who saw themselves as consistent across contexts reported higher personal life satisfaction across the sample as a whole  $b = .20, p < .001, 95\% \text{ CI} = [0.19, 0.22]$ . Model 4c, including cross-level interactions, provided a non-significant better fit to the data compared to Model 3c:  $\chi^2(6) = 11.50, p = .074$ .

*Decontextualized (vs. contextualized) self*. In line with the analyses reported in Krys et al. (2021), Model 3d showed that individuals who defined themselves by personal rather than contextual features reported higher personal life satisfaction across the sample as a whole  $b = .11, p < .001, 95\% \text{ CI} = [0.09, 0.13]$ . Model 4d, including cross-level interactions did not provide a significantly better fit to the data compared to Model 3d:  $\chi^2(6) = 8.99, p = .17$ . Therefore, the model with the contextual variables interacting in the relationship between decontextualized (vs. contextualized) self and personal life satisfaction did not provide significant, additional explained variance (see Table S7).

*Difference (vs. similarity)*. As described in Krys et al. (2021), Model 3e showed that Difference (vs. similarity) was not related to personal life satisfaction across the sample as a whole  $b = .02, p = .135, 95\% \text{ CI} = [-0.01, 0.04]$ . Model 4e provided a significantly better fit to the data compared to Model 3e:  $\chi^2(6) = 13.69, p = .033$ . However, there were not significant interactions between differences (vs. similarity) and

religious heritage nor economic features to predict personal life satisfaction (see Table S8).

*Self-containment (vs. connectedness to others).* As reported in Kryś et al. (2021), Model 3f showed that individuals who saw themselves as self-contained reported lower personal life satisfaction across the sample as a whole sample,  $b = -.14, p < .001, 95\% \text{ CI} = [-0.16, -0.12]$ . Model 4f provided a significantly better fit to the data compared to Model 3f:  $\chi^2(6) = 13.45, p = .036$  (see table S9). Only a Protestant religious heritage interacted negatively with the dimension of self-containment versus connectedness to others in predicting personal life satisfaction ( $b = -.09, p = .001, 95\% \text{ CI} = [-.14, -.04]$ ). Simple slopes revealed a significant negative relationship between self-containment (vs. connectedness to others) and personal life satisfaction in Protestant-heritage countries ( $b = -.26, p < .001$ , see Figure 3). However, other religious heritages or economic features did not interact with the self-containment (vs. connectedness to others) dimension of self-construal to predict personal life satisfaction.

*Self-interest (vs. commitment to others).* As in Kryś et al. (2021), Model 3f showed that self-interest was not related to personal life satisfaction across the whole sample,  $b = .01, p = .644, 95\% \text{ CI} = [-0.02, 0.03]$ . Model 4f provided a significantly better fit to the data compared to Model 3f:  $\chi^2(6) = 15.39, p = .017$ . Self-interest (versus commitment to others) interacted marginally significant with Catholic heritages ( $b = .05, p = .009, 95\% \text{ CI} = [.01, .09]$ ) to predict personal life satisfaction (see table S10). Simple slopes revealed a significant positive relationship in Catholic-heritage countries ( $b = .03, p = .04$ ; see Figure 4).

*Self-reliance (vs. dependence on others).* Finally, in line with Kryś et al. (2021), Model 3g self-reliance was not significantly related to personal life satisfaction across the whole sample,  $b = -.01, p = .622, 95\% \text{ CI} = [-0.02, 0.02]$ . Model 4g provided a



significantly better fit to the data compared to Model 3g:  $\chi^2(6) = 23.06, p < .001$ . Only national wealth interacted with self-reliance versus dependence on others to predict personal life satisfaction ( $b = -.04, p = .001, 95\% \text{ CI} = [-.06, -.02]$ ) (see table S11). Simple slopes indicated that in those countries with high national wealth (+1 SD), self-reliance (vs. dependence on others) negatively predicts personal life satisfaction ( $b = -.04, p = .01$ ), but in countries with low national wealth (-1 SD), self-reliance (vs. dependence on others) positively predicts personal life satisfaction ( $b = .03, p = .02$ ). In countries with average national wealth, this relationship was not significant ( $b < .01, p = .73$ , Figure 5). Neither religious heritage nor economic inequality interacted significantly with the self-reliance (vs. dependence on others) dimension of self-construal.

### Discussion

Previous research has found that at the individual level of analysis, the self-construal components of self-direction (vs. receptiveness to influence), self-expression (vs. harmony), consistency (vs. variability), and decontextualized (vs. contextualized self) predict personal life satisfaction positively; self-containment (vs. connectedness to others) predict personal life satisfaction negatively; difference (vs. similarity), self-interest (vs. commitment to others), and self-reliance (vs. dependence on others) were not associated significantly with personal life satisfaction (Krys et al., 2021). By extending this work in the current research, we aimed to explore to what extent this pan-cultural pattern of relationships between multi-component self-construal and personal life satisfaction is qualified by the national-contextual variables of religious heritage, national wealth, and economic inequality. Our results showed that these fundamental contextual factors of national culture interact with different components of self-construal to predict personal life satisfaction. Specifically, the relationships between

four out of eight dimensions of self-construal and personal life satisfaction are qualified by these national-contextual variables.

Religious heritage showed the biggest impact on the relationship between self-construals and personal life satisfaction, given that it interacts with three out of the eight components, viz., self-expression (vs. harmony), self-containment (vs. connectedness to others), and self-interest (vs. commitment to others). Self-expression (vs. harmony) interacts with a Muslim heritage, self-containment (vs. connectedness to others) with a Protestant heritage. Moreover, self-interest (vs. commitment to others) interacts with a Catholic heritage marginally. This pattern of results suggests that the religious heritage of a country can affect the pan-cultural relationships between dimensions of self-construal and personal life satisfaction, but in qualitatively different ways - different religious heritages interacted with different dimensions of self-construal in predicting personal life satisfaction. Thus, by considering a country's religious heritage, we can further refine our understanding of how the cultural context impacts upon a pan-cultural finding, further nuancing the validity of our findings and explaining apparent anomalies in results of studies arising from mono-cultural studies conducted in various countries (Smith & Bond, 2019).

Features of a country's economy also qualified the relationship between self-construal and personal life satisfaction. However, their impact was lower than that associated with its religious heritage. Only self-reliance (vs. dependence on others) interacted with national wealth to predict personal life satisfaction. By contrast, economic inequality did not interact with any component of self-construal to predict personal life satisfaction.

Finally, it is worth noting that the pan-cultural relationships found by Krys et al., (2021) to predict personal life satisfaction by components of the self-construal involving

an independent vs interdependent orientation towards the world, viz., self-direction (vs. receptiveness to influence), consistency (vs. variability), decontextualized (vs. contextualized) self and difference (vs. similarity) did *not* interact with these contextual features that we considered. Evidently, the pan-cultural relationships between these components and personal life satisfaction are impervious to these major features of a nation's cultural legacy and ongoing development. Instead, these components of how persons orient themselves towards themselves in relation to others in their life space reflect the requirements for attaining a more satisfactory relationship with one's life in all contemporary nations.

### **The National Context of Religious Heritage**

Our results are consistent with previous research highlighting the importance that contextual variables can provide in understanding individuals psychologically (Berry, 1976; Georgas & Berry, 1995; Georgas, et al., 2004; Oishi, 2014; Uskul & Oishi, 2018). We found that the contextual features of religious heritage and national wealth, impact the pan-cultural relationships between multi-component self-construal and personal life satisfaction (Krys et al., 2021), strengthening them, canceling them out, or even reversing their valence in line with previous research that has pointed out how powerful these country variables are in affecting individual psychological process (Cohen, 2009; Georgas, Van de Vijver, & Berry, 2004; Inglehart & Baker, 2000; Jetten et al., 2021; Rodríguez-Bailón et al., 2020). National-cultural context matters.

Given that the current research was exploratory, we presented no theory-driven hypotheses. Nevertheless, we suggest some interpretations of the current results focusing of those that change the pattern of the relationship. The pan-cultural positive relationship between self-expression (vs. harmony) and personal life satisfaction has its exception in Muslim-heritage countries, where the relationship was not significant. This

pattern of results might be explained because the Muslim religion, in comparison with other religions, encourages individuals to express less of their own thoughts, thereby guarding against committing breaches against personal and family honor.

We found that Protestant religious heritage interacted with the dimension of self-containment versus connectedness to others in predicting personal life satisfaction. This result suggests that although in all religious heritage addresses in the current research self-containment versus connectedness predicts negatively personal life satisfaction, this negative relationship is stronger in countries with Protestant religious heritage. Connectedness to others is a basic human need (Baumeister & Leary, 1995). Therefore, it is unsurprised that those who feel more connected to others feel greater personal life satisfaction. Our results might suggest that in Protestant religious heritage countries, the need for connection to others is greater. Given that the children in these countries tend to be socialized as more self-directedness (Bond & Lun, 2014), it could lead to a greater need for connection with others, which would make this dimension of self-construal have a greater impact on their personal life satisfaction.

Although there was not a significant pan-cultural relationship between self-interest (vs. commitment to others) and personal life satisfaction (Krys et al., 2021), this pattern has its exception in Catholic-heritage countries, where the relationship was positive. Although we consider this result as marginally significant so that is less certainty, it is worth trying to be explaining. This result might suggest that those who self-view as self-interest tend to show higher levels of personal life satisfaction, but only in Catholic-heritage countries. Although this effect might be counter-intuitive at first glance because the Catholic church proclaims a message of solidarity and generosity, if we deepen in the Catholic traditions could be clearer. According to the love's notion of Saint Thomas Aquinas (1265-1274) the self-love is the basis for love of

others. According to Aquinas “one loves and seeks the good of another person only when that other person’s good becomes his own” (p. 30, Gallagher, 1991). Therefore, self-interest might be viewed as the first step to commitment to others in Catholic societies, which has important implications for social behaviors (e.g., Game theory, Cooper, 2015). Accordingly, those who view themselves as self-interested might feel greater personal life satisfaction in Catholic countries because it fits with the traditional idea of how love links the relationship with others.

### **The National Economic Context**

Even though the pan-cultural relationship between self-reliance (vs dependence on others) and personal life satisfaction was not significant in the study by Kryszewski et al. (2021), we have discovered in the present study that this relationship depends on a national wealth. Our results show those who see themselves as dependent on others tend to feel less satisfied with their life when they are living in the poorest than when they are living in the wealthiest countries, whereas the difference in personal life satisfaction between richer and poorer nations appears to be eliminated for those who see themselves as more self-reliant (see Figure 8). We speculate that in the poorest countries where individuals tend to have scarce resources, depending on others might be of little help in solving daily problems, whereas in the wealthiest countries, trust of fellow citizens is higher (Jing et al., 2021) and constitutes social capital in modern economies (Bourdieu, 1986). Trusting others would help those with more a dependent self-construal in richer countries to obtain resources to improve their living conditions further.

Economic inequality did not show linking effects either on the relationship between any component of self-construal and personal life satisfaction, or on their interactions with personal life satisfaction. The lack of a direct relationship between

economic inequality and personal life satisfaction is in line with some previous research (Veenhoven, 2005). However, this relationship is controversial, because other research has found both a negative (e.g., Delhey & Dragolov, 2013; Oishi et al., 2011) and a positive relationship (Cheung, 2015; Kelley & Evans, 2016). Our study involved many fewer nations than these previous studies, and so cannot sensibly address this controversy.

Our study could however address the question of whether a nation's level of economic inequality could show whether interaction effects components of self-construal are associated with greater satisfaction with life; but they were not. A plausible explanation for the lack of effects is that, unlike national wealth and religious heritage, economic inequality depends more on its perception by the person. Indeed, some research has claimed that economic inequality needs to be perceived to have psychosocial effects (Willis et al., 2022) and that it is usually misperceived (Gimpelson & Treisman, 2017).

### **Limitations and Future Directions**

Our sample included nations with five different religious heritages, viz., Catholic, Protestant, Orthodox, Muslim, or Buddhist traditions, but not other religious heritages, e.g., Hindu or Jewish. Moreover, we did not sample enough nations to consider finer but potentially crucial differences within each category of religious heritage, e.g., Sunni and Shiite within the Muslim tradition. Future research should provide a more fine-grained picture of the contextual effects of these narrower distinctions within religious heritages and extend the analysis to include additional religious heritages.

The current research was exploratory, so we did not provide specific hypotheses. Although theory-testing research is important, theory-building research is also valuable

(see Kryś et al., 2022). We need more exploratory research in the study of culture and psychology to overcome our cultural biases in the hypotheses that we might develop, especially with respect to religious heritage, a controversial topic for study. We hope that the present research has piqued curiosity about the role of cultural factors, and especially religious heritage, in shaping the social-psychological processes of cultural groups' members.

We used percentages of the current identified religious affiliation of a nation's members as a proxy measure of its religious heritage. However, this procedure has the limitation of focusing on current, rather than previous, prevalence, making untested assumptions about a nation's prior prevalence. Nevertheless, we should note that where the use of percentages of the current identified religious affiliation was problematic, we chose that religious heritage based on historical and political evidence, thereby tempering this limitation.

We focused here on a nation's religious and economic context, but there may also be important consequences for life satisfaction from other features of national context (for instance, ecology - Chen et al., 2020; Oishi et al., 2015 socialization processes (Bond & Lun, 2014), or religiosity (versus secularism) - Gebauer & Sedikides, 2021; Joshanloo et al., 2021; Lun & Bond, 2013). In this respect, we note that secularism is now one of the dominant "religious-ideological" identifications in some countries (Bilgrami, 2012). Secularism, too, might show contextual effects in addition to those of religious heritage. In the current research we focused on religious heritage instead of present religious commitment, but future research should test whether these other domains of religious culture affect individual predictors of personal life satisfaction.

Finally, personal life satisfaction is based on an individualistic presumption, as its existential dynamic validates individual and independent ways of achieving satisfaction (Krys et al., 2021). This self-focused presumption does not match with the understanding that individuals involved in a Buddhist tradition have about well-being. Emerging research has pointed out that there are other ways of measuring well-being such as the interdependent happiness of an individual, the life satisfaction of a family, and the interdependent happiness of a family (Krys et al., 2021; Park et al., 2017; Yamaguchi & Kim, 2015). Future research should explore how the contextual feature of a nation's religious heritage affects these and other forms of well-being.

### **Concluding Thoughts**

The current research contributes to extending the cross-cultural literature on personal life satisfaction by showing which forms of self-construal are adaptive in different regions or nations of the world based on their religious heritage and economic contexts. In an increasingly globalized world, it is crucial to understand both pan-cultural psychosocial processes as well as how they are qualified by national-cultural characteristics. Our results suggest that considering such macro factors in cross-level psychological research seems both judicious and warranted (Smith & Bond, 2019).



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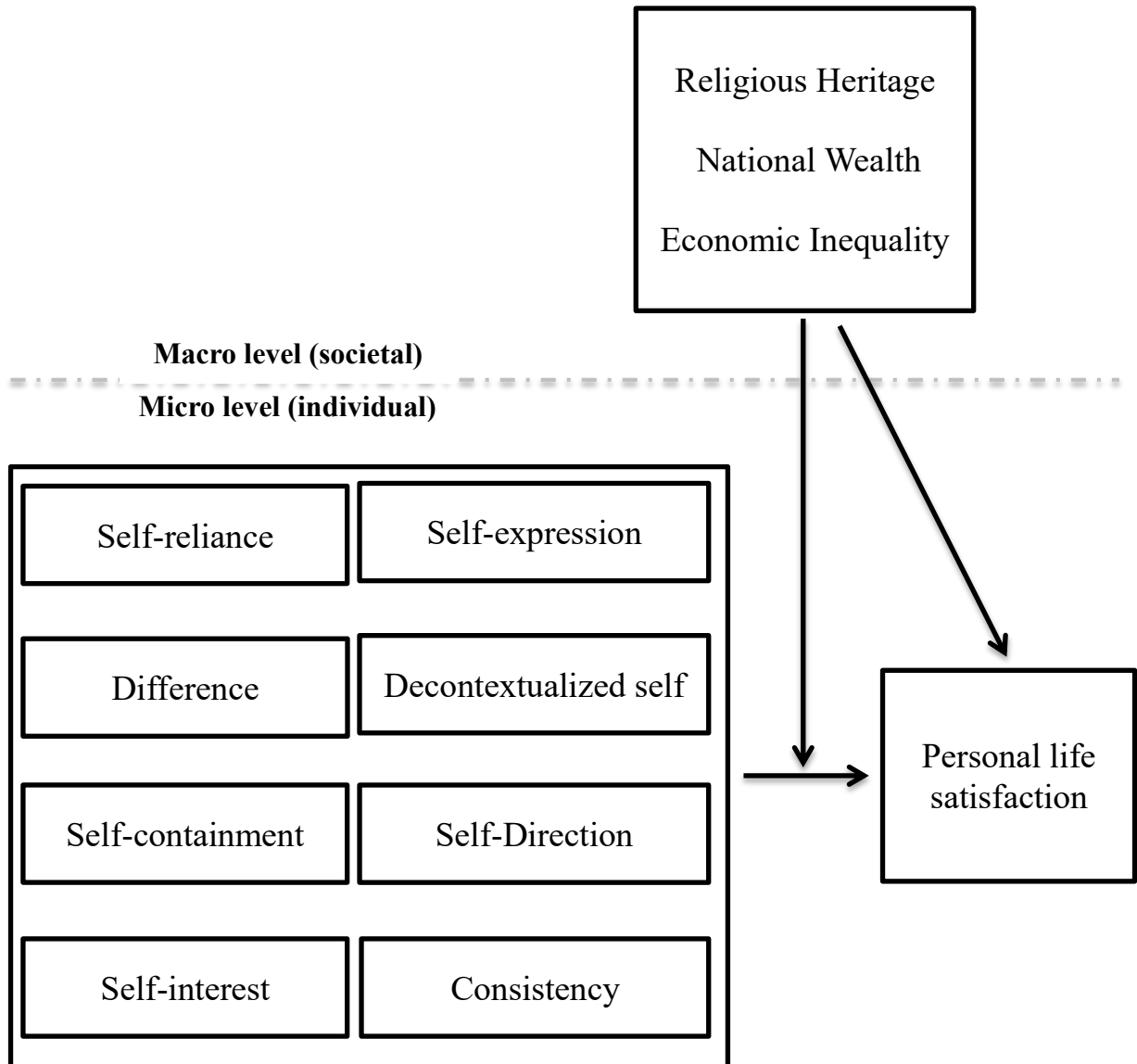
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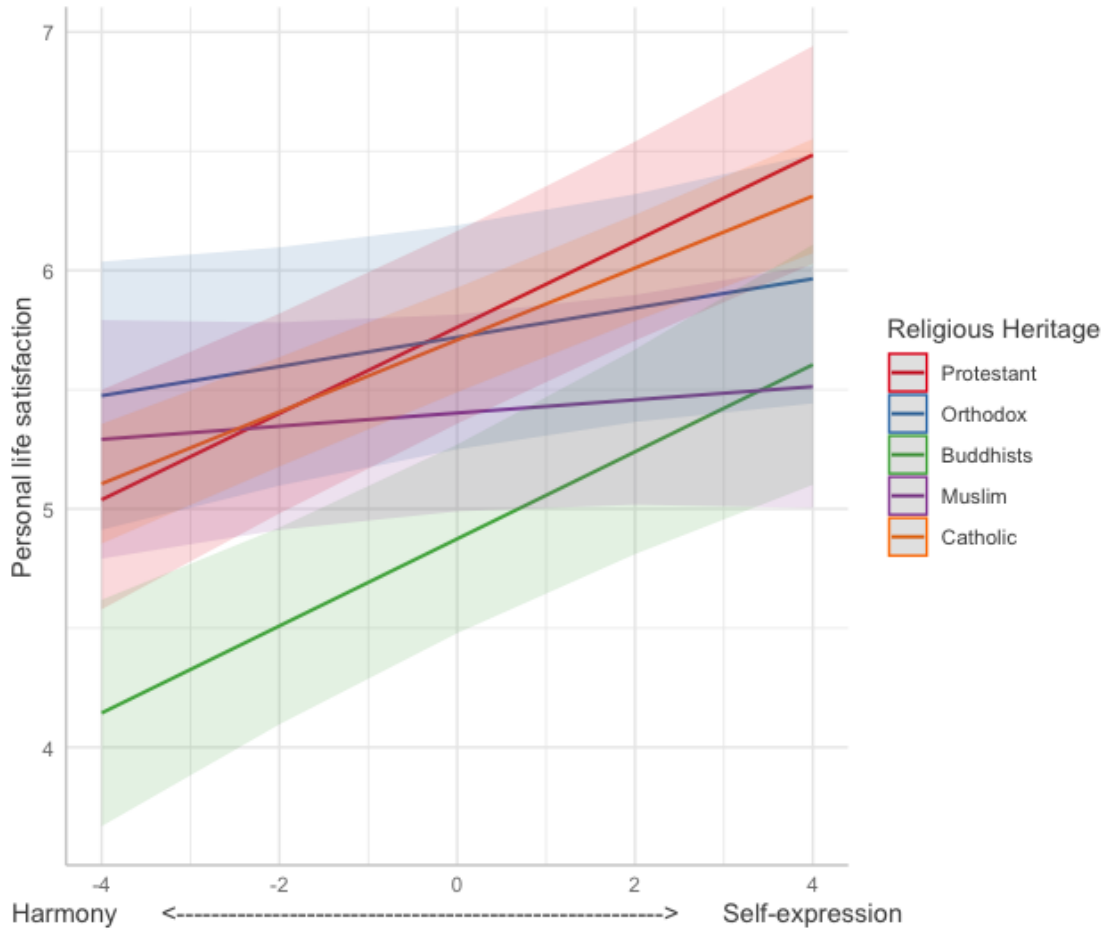
**Figure 1.**

Conceptual map of the contextual effects of religious heritage, wealth, and economic inequality on the relationships between multi-component self-construal and personal life satisfaction



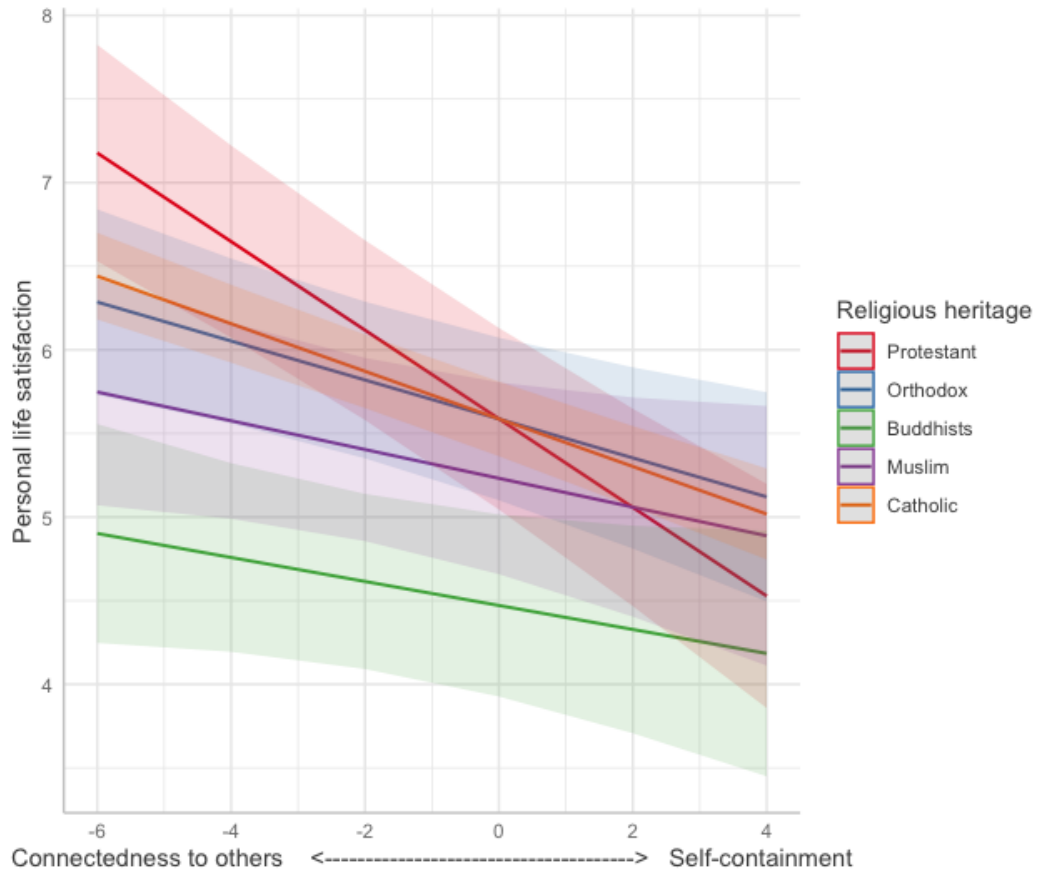
**Figure 2.**

Interactions between self-expression (vs. harmony) and religious heritage to predict personal life satisfaction.



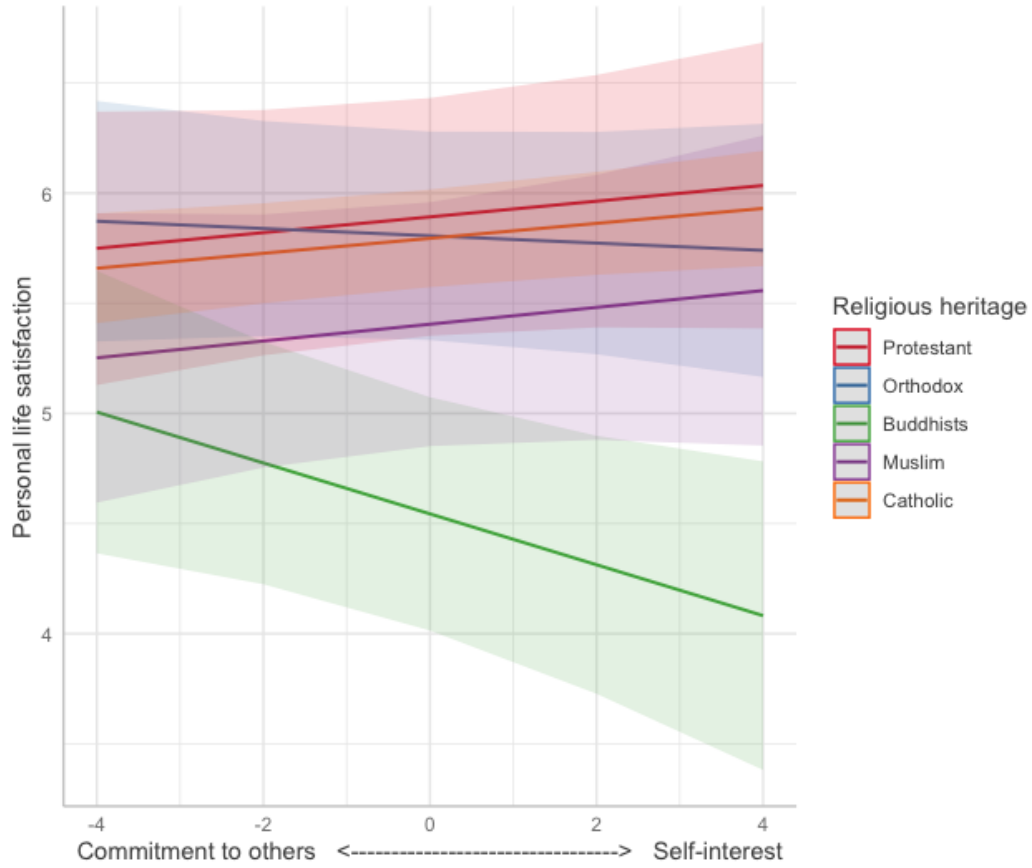
**Figure 3.**

Interactions between Self-containment (vs. connectedness to others) and religious heritage to predict personal life satisfaction.



**Figure 4.**

Interactions between Self-interest (vs. commitment to others) and religious heritage to predict personal life satisfaction.



**Figure 5.**

Interactions between Self-reliance (vs. dependence on others) and national wealth to predict personal life satisfaction.

