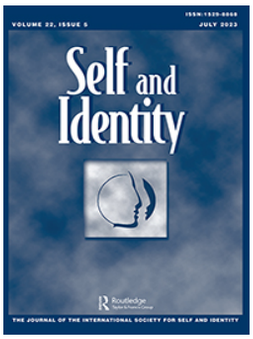

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Self-construals predict personal life satisfaction with different strengths across societal contexts differing in national wealth and religious heritage

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Self-construals predict personal life satisfaction with different strengths across societal contexts differing in national wealth and religious heritage

Ángel Sánchez-Rodríguez[a], Vivian L. Vignoles[b], Michael Harris Bond[c], Mladen Adamovic[d], Charity S. Akotia[e], Isabelle Albert[f], Lily Appoh[g], Arno Baltin[h], Pablo Eduardo Barrientos[i], Patrick Denoux[j], Alejandra Domínguez-Espinosa[k], Carla Sofia Esteves[l], Márta Fülöp[m,n], Vladimer Gamsakhurdia[o], Ragna B. Garðarsdóttir[p], Alin Gavreliuc[q], Diana Hanke-Boer[r], Brian W. Haas[s], David O. Igbokwe[t], İdil Işık[u], Natalia Kascakova[v,w], Lucie Klůzová Kračmárová[x], Agata Kocimska-Zych[y], Aleksandra Kosiarczyk[y], Olga Kostoula[z], Nicole Kronberger[z], Kuba Krys[aa,bb], Anna Kwiatkowska[bb], J. Hannah Lee[cc], Xinhui Liu[dd], Magdalena Łużniak-Piecha[ee], Arina Malyonova[ff], Fridanna Maricchiolo[gg], Arévalo Mira[hh], Tamara Mohorić[ii], Oriana Mosca[jj], Elke Murdock[f], Nur Fariza Mustaffa[kk], Vivian Miu-Chi Lun[ll], Martin Nader[mm], Azar Nadi[bb], Ayu Okvitawanli[nn], Yvette van Osch[oo], Joonha Park[pp], Vassilis Pavlopoulos[qq], Zoran Pavlović[rr], Iva Poláčková Šolcová[ss], Eric Raymond Igou[tt], Muhammad Rizwan[uu], Vladyslav Romashov[bb], Espen Røysamb[vv], Ruta Sargautyte[ww], Beate Schwarz[xx], Heyla A. Selim[yy], Ursula Serdarevich[zz], David Sirlopú[aaa], Maria Stogianni[f], Stanislava Stoyanova[bbb], Chien-Ru Sun[ccc], Julien Teyssier[ddd], Wijnand A. P. van Tilburg[j], Claudio Torres[eee], Yukiko Uchida[aa], Christin-Melanie Vauclair[l], Cai Xing[fff] and John M. Zelenski[ggg]

[a]Social Psychology and Anthropology, University of Salamanca, Salamanca, Spain; [b]School of Psychology, University of Sussex, Brighton, UK; [c]Department of Management and Marketing, Faculty of Business, Hong Kong Polytechnic University, Hong Kong, China; [d]King's Bussiness School, King's College, London, UK; [e]School of Social Sciences, University of Ghana, Acra, Ghana; [f]Department of Culture Studies, Tilburg University, Tilburg, The Netherlands; [g]Faculty of Nursing and Health Sciences, Nord University, Acra, Norway; [h]School of Natural Sciences and Health, Tallinn University, Tallinn, Estonia; [i]Psychology Department, Centro Integral de Psicología Aplicada, Universidad del Valle de Guatemala, Ciudad de Guatemala, Guatemala; [j]University of Essex, Colchester, UK; [k]Department of Psychology, Iberoamerican University, Mexico City, Mexico; [l]CIS-IUL, Instituto Universitário de Lisboa (ISCTE-IUL), Lisboa, Portugal; [m]Institute of Cognitive Neuroscience and Psychology, Research Centre of Natural Sciences; [n]Institute of Psychology, Károli Gáspár University of the Reformed Chuch; [o]Social Psychology and Anthropology, Ivane Javakhishvili Tbilisi State University, Salamanca, Georgia; [p]Faculty of Psychology, University of Iceland, Reykjavík, Iceland; [q]Department of Psychology, West University of Timisoara, Timisoara, Romania; [r]Department of Social and Organizational Psychology, University of Koblenz-Landau, Koblenz, Germany; [s]Department of Psychology, University of Georgia, Athens, GA, USA; [t]Baze University Abuja, Federal Capital Territory, Nigeria; [u]Organizational Psychology Master's Program, Istanbul Bilgi University, Istanbul, Turkey; [v]Psychiatric Clinic Pro Mente Sana, Bratislava, Slovakia; [w]Olomouc University Social Health Institute, Palacky University, Olomouc, Czech Republic; [x]Czech Academy of Sciences, Prague, Czech Republic; [y]Wroclaw Faculty of Psychology, SWPS University of Social Sciences and Humanities, Warsaw, Poland; [z]Institute for Education and Psychology, Johannes Kepler University Linz, Linz, Austria; [aa]Kokoro Research Center, Kyoto University, Kyoto, Japan; [bb]Institute of Psychology, Polish Academy of Sciences, Warsaw, Poland; [cc]Department of Psychology, Indiana University Northwest, Gary, IN, USA; [dd]Universidad del Desarollo, Las Condes, Chile; [ee]SWPS University of Social Sciences and Humanities, Warsaw, Poland; [ff]Department of General and Social Psychology, Dostoevsky Omsk State University, Omsk, Russia; [gg]Department of Education, University of

CONTACT Ángel Sánchez-Rodríguez angelsr@usal.es University of Salamanca, Spain
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Roma Tre, Rome, Italy; [hh]HULAB, Comprometidos con tu desarrollo, San Salvador, El Salvador; [ii]Department of psychology, Faculty of Humanities and SocialSciences, University of Rijeka, Rijeka, Croatia; [jj]Department of Education, Psychology, Philosophy, University of Cagliari, Cagliari, Italy; [kk]Department of Business Administration, International Islamic University Malaysia, Kuala Lumpur, Malaysia; [ll]Department of Applied Psychology, Lingnan University, Tuen Mun, China; [mm]Department of Psychological Studies, Universidad ICESI, Cali, Colombia; [nn]Psychology Department, Universitas Brawijaya, Malang, Indonesia; [oo]Department of Social Psychology, Tilburg School of Social and BehavioralSciences, Tilburg University, Tilburg, The Netherlands; [pp]Graduate School of Management, NUCB Business School, Nagoya, Japan; [qq]Department of Psychology, National and Kapodistrian University of Athens, Athens, Greece; [rr]Department of Psychology, Faculty of Philosophy University of Belgrade, Belgrade, Serbia; [ss]Institute of Psychology, Czech Academy of Sciences, Prague, Czech Republic; [tt]Department of Psychology, University of Limerick, Limerick, Ireland; [uu]Department of Psychology, The Delve Pvt Ltd, Islamabad, Pakistan; [vv]Department of Psychology, University of Oslo, Oslo, Norway; [ww]Institute of Psychology, Faculty of Philosophy, Vilnius University, Vilnius, Lithuania; [xx]Department of Applied Psychology, Zurich University of Applied Sciences, Zurich, Switzerland; [yy]King Saud University, Riyadh, Saudi Arabia; [zz]Universidad Nacional de La Matanza, San Justo, Argentina; [aaa]Faculty of Psychology and Humanities, Universidad San Sebastián, Concepción, Chile; [bbb]Department of Psychology, South-West University "Neofit Rilski", Blagoevgrad, Bulgaria; [ccc]Department of Psychology, National Chengchi University, Taiwan, China; [ddd]Département Psychologie Clinique du Sujet, Université Toulouse II, Toulouse, France; [eee]Institute of Psychology, University of Brasilia, Brasilia, Brazil; [fff]Department of Psychology, Renmin University of China, Beijing, China; [ggg]Department of Psychology, Carleton University, Ottawa, Canada

ABSTRACT

We explore to what extent previously observed pan-cultural association between dimensions of self-construal and personal life satisfaction (PLS) may be moderated by three national-contextual variables: national wealth, economic inequality, and religious heritage. The results showed that Self-reliance (vs. dependence on others) predicted PLS positively in poorer countries but negatively in richer countries. Connectedness to others (vs. self-containment) predicted PLS more strongly in Protestant-heritage countries. Self-expression (vs. harmony) predicted PLS more weakly (and non-significantly) in Muslim-heritage countries. In contrast, previously reported associations of self-direction (vs. reception-to-influence), consistency (vs. variability), and decontextualized (vs. contextualized) self-understanding with personal life satisfaction were not significantly moderated by these aspects of societal context. These results show the importance of considering the impact of national religious and economic context.

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Understanding the antecedents of personal life satisfaction has been a major aim of psychological research over many decades (Diener et al., 1995; Diener, 1984; Oishi et al., 2011). Previous research has shown that national individualism and forms of independent versus interdependent 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, 2020), 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 features of national-cultural context have a strong impact on national cultural characteristics (Georgas et al., 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.

Dimensions of self-construal and personal life satisfaction

Individuals differ both within and across cultures in their views of the self and of 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 multidimensional approach to conceptualizing and measuring the self-construals of individuals, as well as 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) Difference vs Similarity to Others; (2) Self-containment vs Connection to Others; (3) Self-direction vs Receptiveness to Influence; (4) Self-reliance vs Dependence on Others; (5) Consistency vs Variability; (6) Self-expression vs Harmony; (7) Self-interest vs Commitment to Others; (8) Decontextualised vs Contextualised Self-Understandings. 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 et al., 2020; Smith, Ahmad, et al., 2016), communication styles (Smith, Vignoles, et al., 2016), environmental values (Duff et al., 2022), and cognitive, affective, and motivational tendencies (Yang, 2018).

Subjective well-being is a multi-faceted concept (Krys et al., 2021), but 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-construal dimensions and personal life satisfaction. These analyses revealed a similar, but not identical, pattern at the individual level to that at the cultural level: Individuals who construed themselves as more self-expressive, self-directed, consistent across contexts, and defined their selves in more decontextualized terms – 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 significantly related to personal life satisfaction overall at either level of analysis.

The potential importance of person x societal context interactions

Despite detecting this pan-cultural (i.e., averaged across cultures) pattern of individual-level associations between five of the self-construal components and personal life satisfaction, Krys et al. (2021), did not explore whether any of these 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 considering how they are predicted not only by individual differences (e.g., self-construals), but also by national-contextual features and by interactions between individual differences and national-contextual features (Smith & 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 moderate the strength of linkage between dimensions of self-construal and personal life satisfaction —i.e., linking effects (Bond & Van De Vijver, 2011).

Testing for such culture x person interaction effects may be important not only for practical purposes (i.e., for understanding which individuals in which societies are likely to show higher or lower life satisfaction), but also for theoretical reasons. If the association between a certain form of self-construal and personal life satisfaction is found to generalize across societies with highly diverse contextual features, one might infer that construing oneself in this way is universally adaptive for humans (Norenzayan & Heine, 2005). In contrast, if the same association turns out to be moderated by certain aspects of an individual's societal context, this would imply that construing oneself in this way is linked to well-being only inasmuch as it is adaptive for living in a certain kind of society. Thus, the presence or absence of such cross-level interaction effects would lead to building very different kinds of theorizing about the relationships between self-construal dimensions and well-being, focusing either on mechanisms of person-society fit or on universals of human psychology.

Key aspects of societal context: economy and religious heritage

To understand how contextual variables might affect the relationship between self-construal and personal life satisfaction, we adopted a socio-ecological approach (Berry, 1976; Georgas et al., 2004; Oishi, 2014; Uskul & Oishi, 2020). According to the "ecocultural

framework" identified by Georgas and colleagues (Georgas & Berry, 1995; Georgas et al., 2004), six inter-related domains of socio-ecological context are hypothesized to affect aspects of cultural psychology: ecology, economy, education, mass communication, population, and religious heritage. From these six domains, economy and religious heritage were shown to be the strongest predictors of national-cultural values (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 association with numerous dimensions of national-cultural values. On average, the economy and religion clusters showed the largest effect sizes in this set of variables, suggesting that these are the ecological variables with the strongest impact on cultural psychological processes. We therefore considered that economic and religious factors would be the best place to start when exploring for societal moderators of the previously observed pan-cultural effects between dimensions of self-construal and personal life satisfaction.

National economic development has been significantly associated with psychological outcomes including personal life satisfaction. 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 et al. (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 similarly might qualify the relationships between dimensions of 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). 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 individual-level 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 dimensions of self-construal and personal life satisfaction.

Beyond economic factors, societies differ qualitatively in terms of their religious heritage, such as Catholic, Protestant, Orthodox, Muslim, or Buddhist traditions (Georgas et al., 2004). By religious heritage we mean a country's cultural heritage derived from its religious tradition (Saroglou, 2019). Note that in keeping with Georgas et al. (2004), our focus here is on *qualitative* differences between societies that have been shaped historically by the world's major religious traditions, rather than *quantitative* differences in contemporary levels of religiosity versus secularization. Although individual differences in religiosity are an important dimension of psychological functioning (e.g., Joshanloo & Gebauer, 2020), national differences in religiosity are highly correlated with national affluence – with richer countries usually being more secular (e.g., Inglehart & Baker, 2000)—and so the effects of national religiosity and national wealth may be hard to disentangle empirically.

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 et al., 2021). Moreover, 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, and they may persist even when the country has moved toward secularization over time (Inglehart & Baker, 2000).

Research has explored how individuals' religious affiliations are related to their 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 might moderate the antecedents of personal life satisfaction. Hence, we aimed to explore the role of countries' religious heritages as potential moderators of the associations between dimensions of self-construal and personal life satisfaction among individuals in each country.

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 multilevel analyses of the data previously reported by Krys et al. (2021). Previously, Krys 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 provide a more adequate analysis of 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

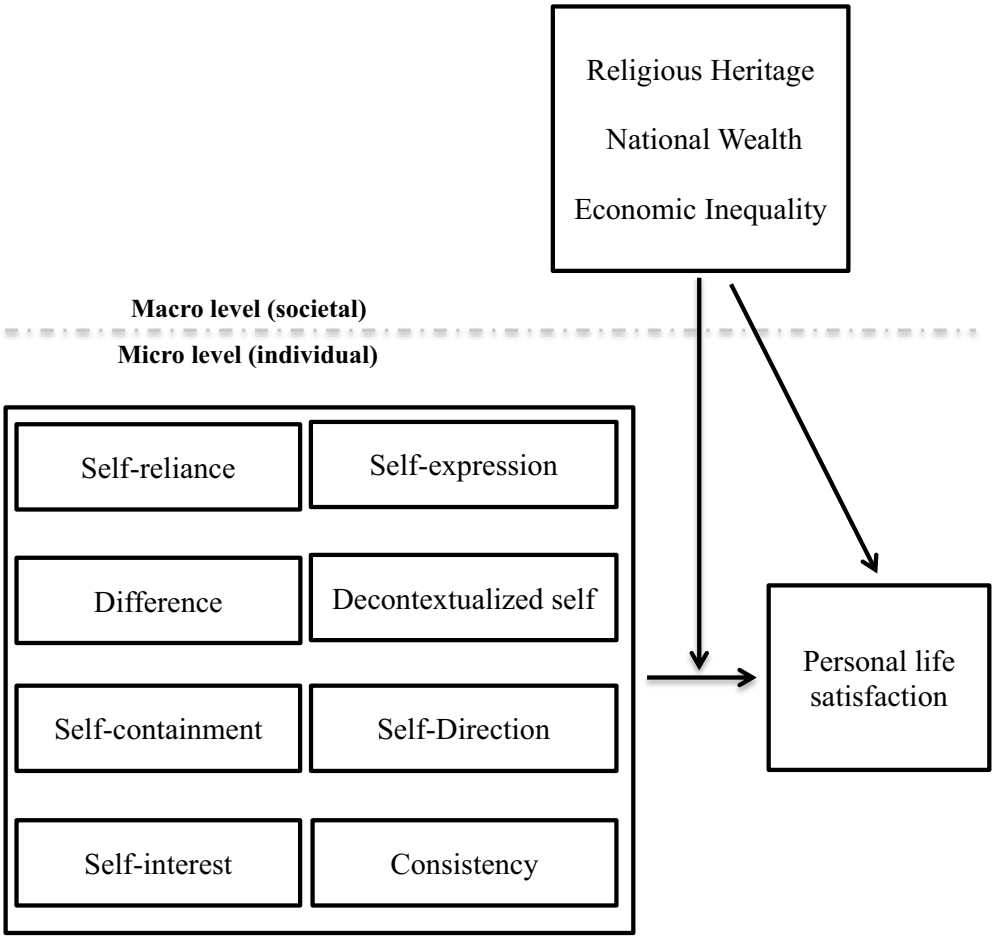

Figure 1. Conceptual map of the contextual effects of religious heritage, wealth, and economic inequality on the relationships between multi-component self-construal and personal life satisfaction.

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., 2021). Data were collected from a total of 13,352 participants in 50 countries and territories across the five continents: Africa (Ghana, Nigeria), Asia (Bhutan, China, Hong Kong S.A.R, Indonesia, Iran, Japan, Korea, Malaysia, Pakistan, Russia, Saudi Arabia, Taiwan, and Turkey), Europe (Austria, Bulgaria, Croatia,

Czech Republic, Estonia, France, Georgia, Germany, Greece, Hungary, Iceland, Ireland, Italy, Lithuania, Luxemburg, Netherlands, Norway, Poland, Portugal, Romania, Serbia, Slovakia, Switzerland, Ukraine, and United Kingdom), North and South America (Argentina, Brazil, Canada, Chile, Colombia, El Salvador, Guatemala, Mexico, and United States), and Oceania (Australia) between 2017 and 2019. Ethical approval for the study was provided by the research ethics committee of the Institute of Psychology of the Polish Academy of Science (approval #7/11/2017). 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; Uskul et al., 2023; 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 items measuring the independent (forward-scored) and interdependent (reverse-scored) pole of the respective dimension. 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 major religious tradition by which a country has been historically shaped (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), in combination with historical and political information, 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.

In most cases, we considered that a country has a particular religious heritage according to the biggest percentage of individuals belonging to that religious affiliation. 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 assigned 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 suggests that it is currently 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, this religious heritage would not change even if these percentages varied somewhat over time, at least in the short run. Therefore, even taking data of adherence by each religion from 2015 (the most recent available source), 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 has a theoretical range from 0 (i.e., every inhabitant has the same income) to 1 (i.e., one individual receives all available income). Thus, 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 indices 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]). Complete data for religious heritage, national wealth, and economic inequality by country can be found in the Supplementary Material.

Results

We computed multilevel models using 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 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: χ^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% CI = [−1.03, −0.31]), whereas those in Catholic countries reported higher personal life satisfaction $b = .40$, $p = .001$, 95% 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 3 h added a main effect of each dimension of self-construal to personal life satisfaction, and Models 4a to 4 h 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 (Holm, 1979). 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 adjusted threshold but were lower than .01 as attaining marginal significance. For the sake of parsimony, we report here the last model to show a significant improvement in fit for 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 Krys 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% 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: χ^2 (6) = 8.11, $p = .23$. Thus, the previously reported relationship between self-direction (vs receptiveness to influence) and personal life satisfaction was not significantly moderated by economic or religious context (see Table S7).

Self-expression (vs. harmony)

As reported in Krys 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% CI = [0.11, 0.15]. Model 4b provided a significantly better fit to the data compared to Model 3b: χ^2 (6) = 24.21, $p < .001$ (see Table S8). 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% CI = [−0.16, −0.03]). Simple slopes revealed that there was not a significant relationship between Self-expression (vs. harmony) and personal life satisfaction in Muslim-heritage countries ($b = -.01$, $p = .88$, see Figure 2).

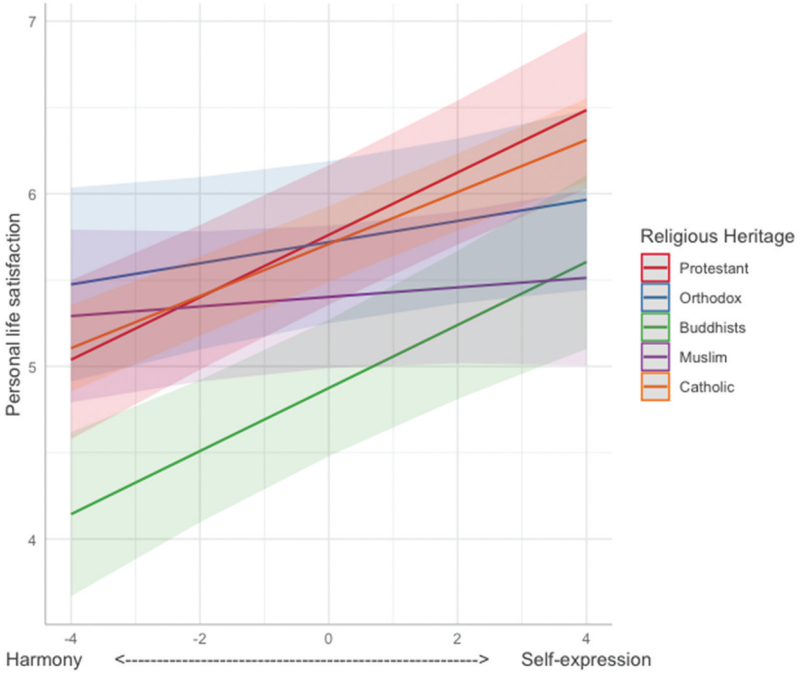

Figure 2. Interactions between self-expression (vs. harmony) and religious heritage to predict personal life satisfaction.

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% CI = [0.19, 0.22]. Model 4c, including cross-level interactions, provided a non- significant improvement in fit compared to Model 3c: χ^2 (6) = 11.50, $p = .074$. Thus, the previously reported relationship between consistency (vs. variability) and personal life satisfaction was not significantly moderated by economic or religious context (see Table S9).

Decontextualized (vs. contextualized) self

In line with the analyses reported in Krys et al. (2021), Model 3d showed that individuals who defined themselves in decontextualized terms reported higher personal life satisfaction across the sample as a whole $b = .11$, $p < .001$, 95% 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: χ^2 (6) = 8.99, $p = .17$. Thus, the previously reported relationship between decontextualized (vs contextualized) self-understanding and personal life satisfaction was not significantly moderated by economic or religious context (see Table S10).

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% CI = [−0.01, 0.04]. Model 4e provided a significantly better fit to the data compared to Model 3e: χ^2 (6) = 13.69, $p = .033$. However, there were no significant or marginal interactions between difference (vs. similarity) and religious heritage nor economic features to predict personal life satisfaction (see Table S11).

Self-containment (vs. connectedness to others)

As reported in Krys 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% CI = [−0.16, −0.12]. Model 4f provided a significantly better fit to the data compared to Model 3f: χ^2 (6) = 13.45, $p = .036$ (see Table S12). 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% CI = [−.14, −.04]). Simple slopes revealed a stronger than average 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 Krys et al. (2021), Model 3 g showed that self-interest was not related to personal life satisfaction across the whole sample, $b = .01$, $p = .644$, 95% CI = [−0.02, 0.03]. Model 4 g provided a significantly better fit to the data compared to Model 3 g: χ^2 (6) = 15.39, $p = .017$. Self-interest (versus commitment to others) interacted marginally with Catholic heritage ($b = .05$, $p = .009$, 95% CI = [.01, .09]) to predict personal life satisfaction (see Table S13). Simple slopes revealed a significant, but very small, positive relationship in Catholic-heritage countries ($b = .03$, $p = .04$; see Figure 4).

Self-reliance (vs. dependence on others)

Finally, in line with Krys et al. (2021), Model 3 h showed that self-reliance was not significantly related to personal life satisfaction across the whole sample, $b = -.01$, $p = .622$, 95% CI = [−0.02, 0.02]. Model 4 h provided a significantly better fit to the data compared to Model 3 h: χ^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% CI = [−.06, −.02]) (see Table S14). 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

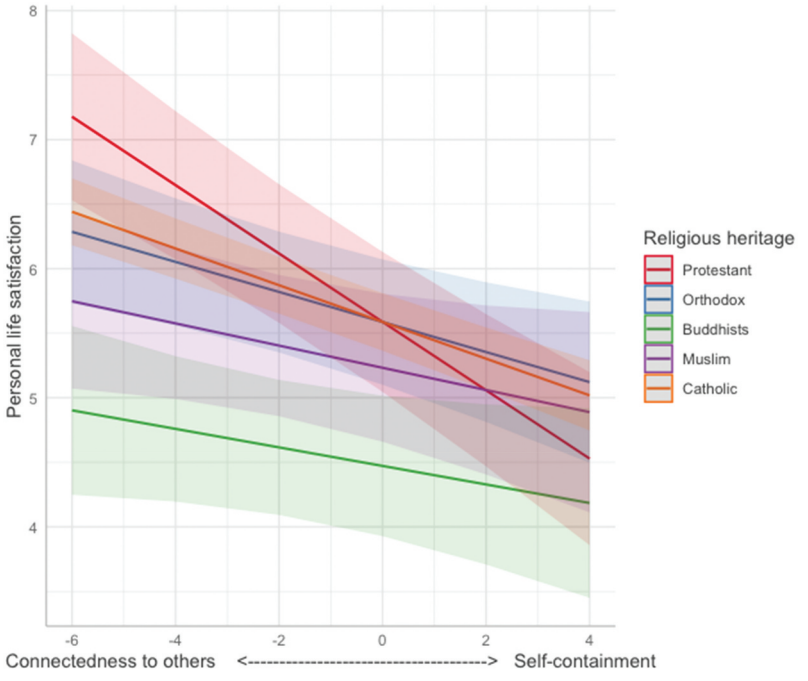

Figure 3. Interactions between self-containment (vs. connectedness to others) and religious heritage to predict personal life satisfaction.

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, on average across societal contexts, individual differences in the self-construal dimensions of self-direction (vs. receptiveness to influence), self-expression (vs. harmony), consistency (vs. variability), and decontextualized (vs. contextualized) self predicted personal life satisfaction positively; individual differences in self-containment (vs. connectedness to others) predicted personal life satisfaction negatively; individual differences in 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). Here, we explored to what extent this pancultural pattern of relationships between self-construal dimensions and personal life satisfaction was qualified by the national-contextual variables of religious heritage, national wealth, and economic inequality. These fundamental contextual factors of national culture interacted with four different self-construal dimensions to predict personal life satisfaction.

Religious heritage showed the widest impact on the relationship between self-construals and personal life satisfaction, given that it interacted with three out of the eight components, viz., self-expression (vs. harmony), self-containment (vs. connectedness to others),

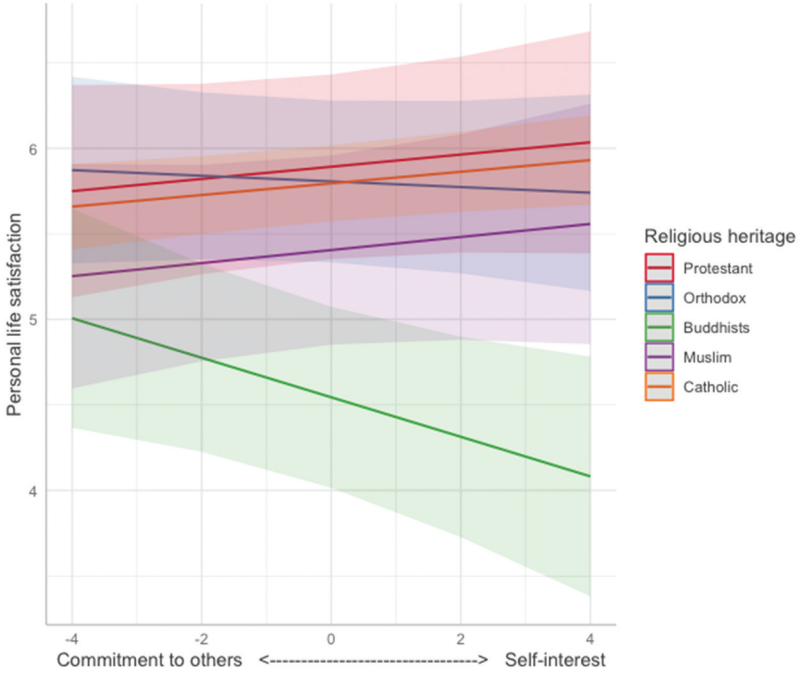

Figure 4. Interactions between self-interest (vs. commitment to others) and religious heritage to predict personal life satisfaction.

and self-interest (vs. commitment to others). Self-expression (vs. harmony) interacted significantly with Muslim heritage, and self-containment (vs. connectedness to others) with Protestant heritage. Moreover, self-interest (vs. commitment to others) interacted marginally with Catholic heritage. 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 county'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. Specifically, self-reliance (vs. dependence on others) interacted with national wealth to predict personal life satisfaction in opposite directions in richer versus poorer countries. 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 with personal life satisfaction previously reported by Krys et al. (2021) for self-direction (vs. receptiveness to influence), consistency (vs. variability), and decontextualized (vs. contextualized) self, did *not* interact with these contextual features that we considered. Seemingly, 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 construe themselves in relation to others in

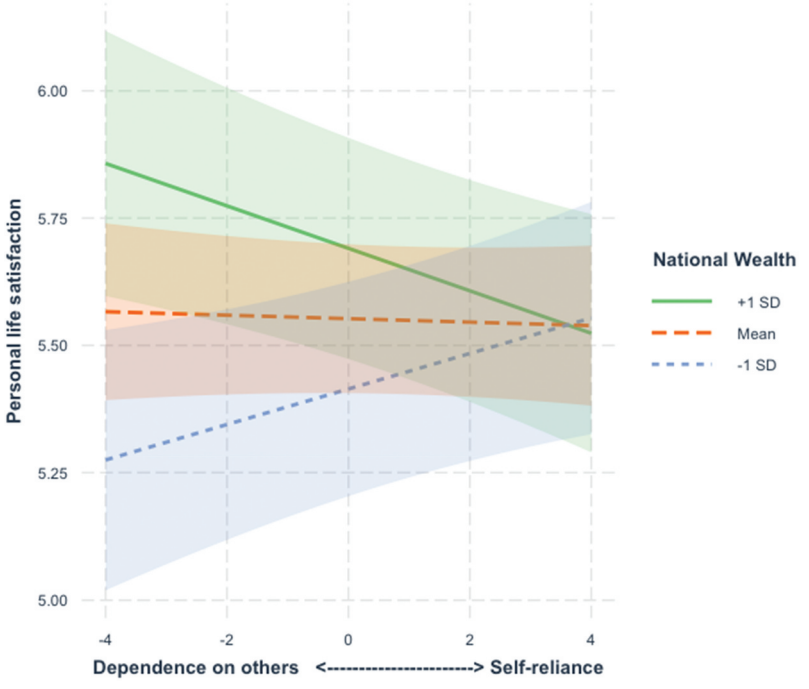

Figure 5. Interactions between self-reliance (vs. dependence on others) and national wealth to predict personal life satisfaction.

their life space may reflect requirements for attaining a more satisfactory relationship with one's life in all contemporary nations.

Our results are thus consistent with previous research highlighting the importance that contextual variables can provide in understanding the psychological functioning of individuals (Berry, 1976; Georgas & Berry, 1995; Georgas et al., 2004; Oishi, 2014; Uskul & Oishi, 2020). We found that the contextual features of religious heritage and national wealth moderated pan-cultural relationships between several dimensions of 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 processes (Cohen, 2009; Georgas et al., 2004; Inglehart & Baker, 2000; Jetten et al., 2021; Rodríguez-Bailón et al., 2020). National-cultural context matters.

The national context of religious heritage

Given that the current research was exploratory, we presented no theory-driven hypotheses. Nevertheless, we suggest some interpretations of the current results, focusing on those that change the pattern of relationships between self-construal and personal life satisfaction. The pan-cultural positive relationship between self-expression (vs. harmony) and personal life satisfaction was not found in Muslim-heritage countries, where it was close to zero (Figure 2). Previous studies have provided converging evidence that Muslim-heritage countries tend to score among the highest in the world on the cultural

dimension of tightness versus looseness (Gelfand et al., 2011; Uz, 2015)—indicating that these societies have relatively homogeneous and strictly enforced social norms – as well as in values and concerns regarding maintenance of personal and family honor (Vignoles et al., 2023). We speculate that the benefits of self-expression in other societal contexts may be counterbalanced in Muslim-heritage societies by the risks of contravening strong social norms or damaging personal or family honor.

We found that Protestant religious heritage interacted with the dimension of self-containment versus connectedness to others in predicting personal life satisfaction. Although connectedness to others (vs. self-containment) was associated with higher personal life satisfaction in all religious heritage clusters, this relationship was stronger in countries with Protestant religious heritage (Figure 3). Connectedness to others is a basic human need (Baumeister & Leary, 1995), and so it is unsurprising that those who feel more connected to others would usually experience greater personal life satisfaction. Our results might suggest that in Protestant religious heritage countries, this need for connection to others is greater. Children in these countries tend to be socialized more for self-directedness (Bond & Lun, 2014), and we speculate that this may lead to a greater need for connection with others, which would increase the impact of this dimension of self-construal on their personal life satisfaction.

Although there was no 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, albeit very small in magnitude. Although we consider this result as marginally significant and hence less certain, it is worth trying to explain. This result might suggest that those who viewed themselves as self-interested tended 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, a deeper look at Catholic traditions may offer an explanation. According to the writings of Saint Thomas Aquinas (1964, 1265–1274), 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, 1999). 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 self-love is linked to relationship with others. Nevertheless, we should be careful with this interpretation given the result was marginally significant and the effect size small.

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 Krys et al. (2021), we have discovered in the present study that this relationship depends on 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 5). 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 showed no main effects on personal life satisfaction nor interaction effects with self-construal dimensions in any of our models. 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 would moderate the relationships of any self-construal dimension with personal life satisfaction, but we found no such effects. A plausible explanation for this is that, unlike national wealth and religious heritage, effects of economic inequality depend more on its perception by the individual. 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, 2018).

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, and so we did not provide specific hypotheses. Although theory-testing research is important, theory-building research is also valuable. Exploratory research is especially needed in the study of culture and psychology to overcome researchers' cultural biases in the hypotheses that they might develop (Vignoles, 2018), and perhaps this may be especially true with respect to religious heritage, a controversial topic with a high potential for stereotypes to influence theorizing. 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 group 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 future research should explore possible consequences for life satisfaction of additional features of national context, including ecology (Chen et al., 2020; Oishi et al., 2015), socialization processes (Bond & Lun, 2014), and religiosity (Gebauer & Sedikides, 2021; Joshanloo et al., 2021; Lun & Bond, 2013). In the latter respect, we note that secularism is now one of the dominant "religious-ideological" identifications in some countries (Bilgrami, 2012). Hence, secularization might show contextual effects in addition to those of religious heritage. A significant challenge will be to separate the effects of secularization empirically from those of economic development or affluence in general. Nonetheless, future research should aim to test whether these other domains of societal context 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 some non-Western traditions (e.g., Buddhism) may 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 similarly how the contextual features of a nation's economy and religious heritage affect 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 these are qualified by national-cultural characteristics. Our results indicate that considering such macro factors in cross-level psychological research seems both judicious and warranted (Smith & Bond, 2019).

Disclosure statement

No potential conflict of interest was reported by the authors.

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ORCID

Ángel Sánchez-Rodríguez http://orcid.org/0000-0002-9749-8508

Vivian L. Vignoles http://orcid.org/0000-0002-7628-6776
Lily Appoh http://orcid.org/0000-0002-5925-7025
Pablo Eduardo Barrientos http://orcid.org/0000-0001-5984-7095
Ragna B. Garðarsdóttir http://orcid.org/0000-0003-3368-4616
Alin Gavreliuc http://orcid.org/0000-0001-8411-0327
İdil Işık http://orcid.org/0000-0002-6709-9717
Natalia Kascakova http://orcid.org/0000-0003-2021-2847
Kuba Krys http://orcid.org/0000-0003-0365-423X
J. Hannah Lee http://orcid.org/0000-0002-5487-3478
Arina Malyonova http://orcid.org/0000-0001-5778-0739
Fridanna Maricchiolo http://orcid.org/0000-0002-6230-6609
Arévalo Mira http://orcid.org/0000-0001-8617-6557
Tamara Mohorić http://orcid.org/0000-0002-5274-1850
Vivian Miu-Chi Lun http://orcid.org/0000-0003-3868-5538
Martin Nader http://orcid.org/0000-0002-4723-2322
Vassilis Pavlopoulos http://orcid.org/0000-0002-6465-6725
Iva Poláčková Šolcová http://orcid.org/0000-0003-3130-5416
Eric Raymond Igou http://orcid.org/0000-0001-7744-9648
Heyla A. Selim http://orcid.org/0000-0002-6974-7175
Maria Stogianni http://orcid.org/0000-0002-3238-4331
Wijnand A. P. van Tilburg http://orcid.org/0000-0002-9724-0603
Cai Xing http://orcid.org/0000-0003-2790-2103
John M. Zelenski http://orcid.org/0000-0002-3668-5764

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