



System justification enhances well-being: A longitudinal analysis of the palliative function of system justification in 18 countries

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According to the palliative function of ideology hypothesis proposed by System Justification Theory, endorsing system-justifying beliefs is positively related to general psychological well-being, because this fulfils existential, epistemic, and relational needs. We discuss and address three main issues: (1) the role of societal inequality, (2) comparisons by social status, and (3) cross-sectional versus longitudinal research. We used a longitudinal survey of representative online samples ($N = 5,901$) from 18 countries. The results supported the main argument proposed by the theory, in that system justification was positively and significantly related to life satisfaction and negatively related to anxiety and depression. The pattern of results suggested that the palliative function of system justification is more homogeneously distributed across individual and collective measures of social status than proposed by the theory, because the function was unaffected either by society-level inequality or by individual-level social status. These results allow us to infer that one of the reasons for the high stability of social arrangements is located in the psychological domain of palliative effects.

Previous studies have shown that perceiving societal arrangements as fair and legitimate, or believing that people get what they deserve, is positively associated with psychological well-being. Most of these studies have been informed by Belief in a Just World Theory (Lerner, 1980; for a review see Furnham, 2003). Within System Justification Theory – SJT (Jost & Banaji, 1994, 2004), this topic has attracted less attention, although theoretically there are clear hypotheses, which have been labelled as the *palliative function of ideology* (Jost & Hunyady, 2002). To date, there is still controversy over three main points, which are addressed in this article: (1) the role of contextual factors, such as societal

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inequality; (2) the effect of the palliative function among different status groups; and (3) the patterns found in cross-sectional versus longitudinal studies.

We tested here the main theoretical hypotheses derived from SJT about the palliative function of ideology, with a particular focus on the three main controversial points mentioned, using a longitudinal survey conducted in 18 countries. In this article, we first review the main theoretical statements about system justification and its effects on psychological well-being. Second, we consider theory regarding the impact of social status on the palliative function of ideology, incorporating cross-sectional and longitudinal findings. And, third, we outline the specific hypotheses to be tested here.

System Justification Theory and the palliative function of ideology

System Justification Theory (Jost & Banaji, 1994, 2004) proposes that people are, consciously or unconsciously, motivated to perceive their social, political, and economical systems as fair, just, and legitimate. SJT argues that this motivation can be observed, even if it contradicts the material interests of disadvantaged people (Blasi & Jost, 2006; Jost & Hunyady, 2005). However, the theory does not imply that people will *always* be motivated to perceive social arrangements as fair (Costa-Lopes, Dovidio, Pereira, & Jost, 2013; Gaucher & Jost, 2011; Jost, Gaucher, & Stern, 2015). Indeed, there are contextual factors that strengthen the system-justifying motive (for a review, see Kay & Friesen, 2011; Kay & Zanna, 2009; Proudfoot & Kay, 2014), such as system inescapability (Laurin, Shepherd, & Kay, 2010), system dependence (e.g., Shepherd & Kay, 2012; for a critical review, see Owuamalam, Rubin, & Spears, 2016), system threat (e.g., Bonanno & Jost, 2006; Ullrich & Cohrs, 2007; Wakslak, Jost, & Bauer, 2011), and control loss (e.g., Knight, Tobin, & Hornsey, 2014), among others.

The system-justifying motive fulfils epistemic, existential, and relational needs (Hennes, Nam, Stern, & Jost, 2012). In other words, system justification allows people to have certainty about social arrangements, to feel reduced external threats, and to share a common reality with others. Regarding epistemic needs, van den Bos (2009) has argued that people need to perceive certainty in their social arrangements, and when this certainty is under threat, people react to restore it by justifying the system as a way to regain certainty (Whitson, Galinsky, & Kay, 2015). In research on existential needs, Jost *et al.* (2007) showed that political conservatism, used as a proxy for system justification, was predicted by system threats. Finally, regarding relational needs, research has shown that individuals with conservative parents scored higher in system justification (Jost, Ledgerwood, & Hardin, 2008), which suggests that there is a relational motivation involved in system justification.

The role that system justification plays in fulfilling epistemic, existential, and relational needs suggests that it brings psychological benefits: bolstering self-esteem and life satisfaction, and reducing anxiety and neuroticism. This hypothesis has been termed the *palliative function of ideology* (Jost & Hunyady, 2002). Many studies have found that agreement with conservative beliefs is associated with well-being, especially in terms of life satisfaction (e.g., Ozmen, Brelsford, & Danieau, 2017). Following the arguments proposed by the motivated social cognition approach (Jost, Glaser, Kruglanski, & Sulloway, 2003), conservatism is defined as resistance to social change and opposition to equality, which fits with system-justifying beliefs. Indeed, Jost and Hunyady (2005) proposed that political conservatism is a form of system-justifying beliefs, as also are Protestant work ethic, meritocracy, belief in a just world, among others. A meta-analysis

found a positive relationship ($r = .12$) between conservative political views and life satisfaction (Onraet, Van Hiel, & Dhont, 2013). Another study using large samples from the World Values Survey reports that conservatives were happier and more satisfied with their lives than liberals in general ($r = .08$); this study also found that differences between liberals and conservatives varied across cultural contexts (Stavrova & Luhmann, 2016). More happiness among conservative people was larger in contexts with a conservative orientation, and lower or non-significant in contexts with a liberal orientation. This difference favourable to conservatives has been attributed to factors such as high socioeconomic status, identification with a group with high collective esteem, emotional stability, and agreement with system justifying beliefs (Burton, Plaks, & Peterson, 2015). In addition, Napier and Jost (2008, study 1 and study 2) and Schlenker, Chambers, and Le (2012, study 1, study 2, and study 3) demonstrated an empirical link between conservatism and life satisfaction and happiness, which was mediated by system justification measures, after controlling for a range of socio-demographic factors. Accordingly, a recent study (Butz, Kieslich, & Bless, 2017) compared these different explanations for this relationship, including variables theoretically related to system justification (e.g., rationalization of inequality), group membership, and positive adjustment, finding support for a SJT-based explanation.

Other studies have shown the palliative effect of endorsing system justification beliefs, when people are confronted with disadvantage (i.e., relative deprivation or life negative experiences). For example, Osborne and Sibley (2013) found that endorsing system-justifying beliefs predicted less psychological distress. In addition, this study showed a significant interaction between individual relative deprivation and distress. In other words, when individuals with low scores on system justification were compared to those with high on this scale, the relationship between individual relative deprivation and psychological distress was positive and stronger among the former. Thus, Harding and Sibley (2013) argued that system justification acted as a buffer against life negative experiences (of harm) on life satisfaction, at least in the short term.

Given this discussion, we expect endorsing system justification beliefs will be positively associated with psychological well-being.

The role of societal inequality in the palliative function of ideology

A controversial discussion has been conducted regarding the role of societal inequality. Within the framework of SJT and using data from the General Social Survey, Napier and Jost (2008, study 3) proposed that inequality has a higher 'psychological toll' for liberals, as compared with conservative individuals, because liberals have less ideological justification to assess inequality in a non-negative form. Specifically, using data from General Social Survey in the United States, for the period ranging from 1974 to 2004, they showed that among those years with higher inequality, the relationship between conservatism and happiness was stronger, as compared with those years with lower inequality. However, Schlenker *et al.* (2012, study 4) replicated the analyses but failed to find a significant relationship between inequality and happiness after controlling for individual-level covariates (i.e., gender, marital status, employment status, age, age squared, income, health status, and education) and group-level covariates (i.e., unemployment, inflation, inequality, and the party of the President). In this study, the authors found that year and inequality were highly correlated, so using either measure (i.e., year or inequality) in the models as a group-level predictor led to the same relationship with happiness, ruling out societal inequality as the sole variable responsible

for these effects found by Napier and Jost (2008, study 3). In addition, after accounting for church attendance, the relationship became non-significant. Nevertheless, Sengupta, Greaves, Osborne, and Sibley (2017) found different results regarding the role of inequality. They found that the effect of symbolic prejudice, the variable used in their study to measure system justification ideology, was positively related to personal well-being in a New Zealand sample. They hypothesized that symbolic prejudice is a legitimizing ideology, because low-status groups 'should not receive any systematic compensation for their poorer social outcomes' (Sengupta *et al.*, 2017, p. 4). More importantly, they showed that the relationship between symbolic prejudice and well-being was stronger in highly unequal regions. This study suggests that system justification enhances well-being in unequal contexts to a higher degree than within more egalitarian contexts. The authors proposed that in more unequal contexts, there is a greater payoff for endorsing legitimizing ideologies than within egalitarian contexts, because inequality, *per se*, is negatively associated with psychological measures of well-being. In other words, in highly unequal contexts, endorsing system-justifying ideologies may help people cope with the negative social outcomes derived from inequality by providing an ideological justification for daily observations of other people's suffering.

Given this discussion, our next research question tests whether endorsing system-justifying interacts with societal inequality. Specifically, we expect that among highly unequal countries, the relationship between system justification and psychological well-being would be stronger than among more egalitarian countries.

The palliative function of system justification by an individual's social status

According to SJT, self, collective, and system-justifying motives are coherent for high-status people (Jost *et al.*, 2015). In other words, the motivation to maintain a positive individual and collective identity is consistent with the motivation to perceive social arrangements as fair and legitimate, for advantaged people. However, among disadvantaged people, these motivations are contradictory. If low-status individuals perceive the social arrangements as fair and endorse system-justifying beliefs, then they should blame themselves (and their ingroups) for their disadvantaged position, which contradicts the need to maintain a positive identity (Jost, Pelham, Sheldon, & Ni Sullivan, 2003). These differences by status have implications for the study of the palliative function of system justification, because its psychological benefits are hypothesized to be found among high-status, whereas among low-status people, the relationship might be weaker or in the opposite direction (Jost, Banaji, & Nosek, 2004; Jost & Hunyady, 2002).

Several studies have compared, directly or indirectly, the hypothesized palliative function by status interaction and found mixed results. For instance, Sengupta *et al.* (2017) found a positive and significant relationship between endorsing legitimizing ideologies (i.e., symbolic prejudice) and psychological well-being, but more importantly, this relationship was similar when comparing different ethnic groups rather than more prevalent in the dominant ethnic group. Quinn and Crocker (1999, study 2) on the other hand showed that the priming of a Protestant work ethic increased depression levels among overweight women (as a proxy of low status); this same effect could not be found among non-overweight participants. The authors argued that the reason for these results was that the Protestant work ethic is an individualistic ideology, which emphasizes that people must work hard and avoid leisure (Jost & Hunyady, 2005), and endorsing it leads people to believe that they have control over their own outcomes. For this reason,

low-status (overweight) individuals endorsing such ideologies are assuming responsibility for their depressed status, because they internalize reasons such as lack of self-discipline as a cause of their weight.

O'Brien and Major (2005) found that there were differences among ethnic groups in subjective well-being variables, such as self-esteem and depression. However, there was not a clear pattern of results in line with the theoretical predictions of SJT (Jost *et al.*, 2004), because not all the low-status groups reported lower scores on well-being measures compared with high-status groups. The study found differences in self-esteem, with Asians exhibiting lower self-esteem than Black, Latino, and White participants. Differences could also be observed in depression, with Asians scoring higher than White and Latino participants. An interesting finding of this study was that identification with the ingroup was found to be a moderating variable factor so that among low-status groups, system-justifying beliefs predicted self-esteem positively among those with low identification and negatively among those with high identification. The opposite pattern was found in high-status groups.

Other studies have examined the palliative function of ideology longitudinally. Godfrey, Santos, and Burson (2017) studied the relationship between system justification and self-esteem among early adolescents that came from deprived neighbourhoods over a period of 2 years. They found that in the first wave, there was a significant and positive association between system justification and self-esteem, but that relationship was reversed when considering the longitudinal association. If we consider together the findings of this study and those of Osborne and Sibley (2013), we might hypothesize that the palliative function of ideology operates in the short term (i.e., when considering both variables in the same wave), but in the long-term (i.e., longitudinally), we could expect a negative association between system justification and subjective well-being among low-status groups. It is important to emphasize that the original statements of SJT (Jost & Hunyady, 2002; Jost *et al.*, 2004) do not distinguish between short-term and long-term effects for the palliative function of ideology. Nevertheless, based on the mentioned studies and the theoretical argument proposed by Harding and Sibley (2013), we hypothesized that a plausible mechanism involved in these differential effects is that in the short term, system justification allows people to assess disadvantage inducing situations and overall quality of life as separate factors that are not connected. However, over time, the cognitive dissonance mechanism described by SJT regarding the contradiction between ego, group, and system justification should force low-status individuals to recognize the unfairness in their social position and therefore lose the palliative effects of system justification.

Specifically, we expect a positive longitudinal association between endorsing system-justifying beliefs and psychological well-being among high-status individuals, but a negative relationship among low-status people when the relationship between the two is analysed in a cross-lagged manner using longitudinal data.

Overview of the study

In this study, we seek to confirm SJT's predictions about the palliative function of ideology in longitudinal representative online samples collected from 18 countries. In addition, we tested whether the palliative function of system-justifying beliefs interacted with an individual's self-reported social status. Although SJT does not provide explicit arguments about the influence of contextual factors on the palliative function of system justification, we included the Gini (inequality) and Human Development Index (HDI) as country-level

variables. We inferred that both in more developed, and in less egalitarian countries, the effect of system-justifying beliefs on well-being should be higher, as found by Sengupta *et al.* (2017) in regions within a country. In the case of national-level development, SJT does not provide specific hypotheses, but we included HDI as a ‘macro measure of status’ in order to test whether individual-level predictions hold at the national level, as previous studies have done (e.g., Caricati, 2016; Caricati & Lorenzi-Cioldi, 2012). In sum, we tested the following hypothesis:

- Hypothesis 1:* System justification (at time 1) will be positively related to life satisfaction (at time 2) and negatively related to anxiety and depression (at time 2).¹
- Hypothesis 2:* National Income Inequality (GINI) at the country level will be negatively related to life satisfaction and positively to anxiety and depression so that in more egalitarian countries, we will observe better psychological outcomes.
- Hypothesis 3:* The Human Development Index (HDI) at the country level will be positively associated with life satisfaction and interpersonal trust and negatively with anxiety and depression so that in more developed countries, we will observe better psychological outcomes.
- Hypothesis 4:* The main effect of system justification on psychological outcomes will be qualified by an interaction with individual-subjective social status so that the cross-lagged effect will be positive for high-status people and negative (or zero) for low-status people.
- Hypothesis 5:* The main effect of system justification on psychological outcomes will be qualified by cross-levels interactions with Human Development Index and National Income Inequality so that the cross-lagged effect of system justification will be higher among more developed and less egalitarian countries.²

Methods

Sample

The first wave of the sample was collected during September of 2015, and the same respondents were contacted again in the second wave 6 months later, as part of the Digital Influence Project (for other studies within this project, see Gil de Zúñiga, Diehl, Huber, & Liu, 2017; Gil de Zúñiga & Liu, 2017; Liu, Milojev, Gil de Zúñiga, & Zhang, in press; Vargas-Salfate, Paez, Liu, Pratto, & Gil de Zúñiga, in press). The project’s main objective was to analyse the influence of mass media on political attitudes and behaviour. Given these objectives, the longitudinal survey included many different measures, among them those used in this study. This project used online panels curated by Nielsen (a US-based polling agency that subcontracts panels from survey firms in other countries), collecting stratified samples representative on age, gender, and region (based on census data, see Gil de Zúñiga & Liu, 2017). In the survey were individuals from 22 countries, but we excluded those from India and South Africa, because these were only city samples. In addition, we ruled out Chile, because we obtained cases only for the first wave, and

¹ Given the longitudinal nature of the data set, we focus on the more difficult longitudinal hypothesis rather than spend time on the easier cross-sectional (*t1*) hypothesis. But the results should hold within *t1* measures as well.

² As tested in separate interactions.

Taiwan, because of the lack of country-level variables. We selected cases from the remaining 18 countries that had no missing data for all the variables used in the analyses. This procedure retained 5,901 participants (52.18% women; $M_{\text{age}} = 47.19$, $DE = 14.266$) from Argentina, Brazil, China, Estonia, Germany, Indonesia, Italy, Japan, South Korea, New Zealand, the Philippines, Poland, Russia, Spain, Turkey, the United Kingdom, Ukraine, and the United States. The sample sizes ranged from 83 (Ukraine) to 562 (Estonia), as shown in Table 1.

Instruments

Satisfaction with life scale

We selected five items from the Personal Well-being Index (PWI; Lau, Cummins, & McPherson, 2005), which measure the satisfaction with ‘your life as a whole’, ‘your health’, ‘your standard of living’, ‘your safety and security’, and ‘your relationships’. The answers ranged from 1 (‘completely dissatisfied’) to 7 (‘completely satisfied’). This scale was highly reliable both in the first and second waves ($\alpha = .86$ and $.87$, respectively) and was significantly related to each other ($r = .784$) over time.

Anxiety scale

We used the Generalized Anxiety Disorder scale (GAD; Spitzer, Kroenke, Williams, & Löwe, 2006), which asked to participants to rate the frequency by which they have felt bothered by ‘feeling nervous, anxious, or on edge’, ‘not being able to stop or control worrying’, ‘worrying too much about different things’, ‘having trouble relaxing’, ‘being so restless that it’s hard to sit still’, ‘becoming easily annoyed or irritable’, and ‘feeling afraid as if something awful might happen’. The answers ranged from 1 (‘never’) to 7 (‘always’).

Table 1. Sample sizes by countries

Country	Frequency
Argentina	230
Brazil	230
China	222
Estonia	562
Germany	430
Indonesia	227
Italy	481
Japan	399
South Korea	447
New Zealand	431
The Philippines	111
Poland	260
Russia	422
Spain	230
Turkey	252
The United Kingdom	470
Ukraine	83

The scale was highly reliable in both the first and the second waves ($\alpha = .94$ and $.94$, respectively), being significantly related to each other over time ($r = .719$).

Depression scale

We chose two items from the Patient Health Questionnaire-4 (PHQ-4; Löwe *et al.*, 2010), which are conceptually related to depression. The scale asked to participants to rate the frequency by which they have felt bothered by 'having little interest or pleasure in doing things' and 'feeling down, depressed, or hopeless'. This scale was highly reliable in both the first and the second waves ($\alpha = .86$ and $.87$, respectively) and was significantly related to each other ($r = .664$).

System Justification Scale (SJ)

We selected four items from the System Justification Scale (Kay & Jost, 2003), 'In general, I find society to be fair', 'In general, my country's political system operates as it should', 'Everyone in my country has a fair shot at wealth and happiness', and 'My country's society is set up so that people usually get what they deserve'. The answers ranged from 1 ('disagree completely') to 7 ('agree completely'). The scale was highly reliable in both the first and second waves ($\alpha = .87$ and $.88$, respectively) and was significantly related over time ($r = .723$).

Subjective social status

We included an item to assess subjective social status time 1 (t1), 'On a scale of 1 to 10, with 10 being people who are the most well off in society and 1 being the people that are least well off, where would you describe your position?'

National-level variables

The first national-level variable is the Gini coefficient (Yitzhaki, 1979), with higher values indicating higher income inequality. The data for this variable were obtained from the OECD (2017) and UNDP (2017a) databases. The second national-level variable is the HDI (UNDP, 2017b), which globally measures quality of life within a country. This index is composed by measures of income, age expectancy, and educational level.³

Individual-level control variables

We included age and sex (1 female, 0 male), as individual-control variables.

Analyses

We conducted a series of multilevel-linear regression analyses (Gelman & Hill, 2007). This kind of model is appropriate for data collected within different countries, because it

³ We tested the same models using GDP and GNI, instead of HDI, but the results were the same. We selected HDI, because the measure of national status considers different dimensions, and not only income. According to the statements of SJT (Jost & Banaji, 1994), high-status groups are not uniquely defined by material possessions, such as income resources, rather they are characterized by control over non-monetary resources as well, such as power, better access to education, etc.

accounts for the hierarchical structure of data. For each dependent variable (t2), we estimated six models. In the first model, we only included the intercept, in order to obtain a baseline model to compare to the subsequent models, allowing computation of inter- and intragroup *r*-squares. In the second model, we included the individual-level variables measured in the first wave, controlling for the dependent variable in that wave. In the third model, we added the Gini coefficient as a country-level variable. In the fourth model, we included the interaction terms (i.e., system justification by the individuals' social status, and system justification by the country's Gini coefficient). In the fifth model, we included HDI as a country-level variable instead of the Gini coefficient. Finally, in the sixth model, we included the interaction terms (i.e., system justification by social status, and system justification by HDI), in addition to HDI.

All the regressions were estimated using the restricted maximum-likelihood estimator, because we had only 18 countries (Hox, 2010). In addition, we group-mean-centred the individual predictors and grand-mean-centred the country-level predictors. All the analyses were performed using the software Stata v.13 (StataCorp., 2013).

Results

Descriptive statistics are presented in Table 2. Regarding the first dependent variable of the study, there were significant differences in satisfaction with life (t2) among countries, $F(17, 5883) = 37.69, p = .000, \eta^2 = .098$. The countries with higher means scores on this scale were Indonesia, the United States, Spain, and the Philippines, and the countries with lower scores were South Korea, Japan, and Ukraine. The overall mean was 4.82 ($SD = 1.149$) and was significantly above the mid-point of the 7-point scale (4), $t(5,900) = 54.84, p = .000$. This value was significantly lower than that observed in the first wave, $t(5,900) = 3.49, p = .001$.

On the anxiety scale, the second dependent variable of the study, there were significant differences by country (t2), $F(17, 5883) = 27.14, p = .000, \eta^2 = .073$. In Brazil, we observed the highest mean scores on this scale and in Japan and the United States the lowest values. The overall mean was 3.09 ($SD = 1.406$). This significantly below 4, the mid-point of the scale, $t(5,900) = -49.79, p = .000$. Between t1 and t2, there was no significant difference, $t(5,900) = .56, p = .577$.

For the next dependent variable, the depression scale (t2), there were significant differences by country, $F(17, 5883) = 20.61, p = .000, \eta^2 = .056$. The highest value was observed in Brazil and the lowest in the United States. The overall mean ($M = 2.83, SD = 1.543$) was significantly lower than the mid-point of the scale, $t(5,900) = -58.49, p = .000$, and was not different from the mean score in the first wave, $t(5,900) = -0.25, p = .801$.

The main predictor in the models is the system justification scale (t1). In this variable, there were significant differences by country, $F(17, 5883) = 60.66, p = .000, \eta^2 = .149$. The highest value was observed in China, and the lowest values were found in Brazil, Italy, and Ukraine. The overall mean ($M = 3.24, SD = 1.387$) was significantly different from the mid-point of the scale, $t(5,900) = -42.16, p = .000$, and also from the same scale in the second wave, $t(5,900) = -38.70, p = .000$.

The correlation matrix is presented in Table 3. All the dependent variables were significantly and highly correlated across the two waves of measurement (all $r_s > .5$). In addition, system justification (t1) was significantly related to higher satisfaction with life ($r = .296$), lower anxiety ($r = -.202$), and lower depression ($r = -.186$), in the second

Table 2. Descriptive statistics

	SWL (t1)		SWL (t2)		Anxiety (t1)		Anxiety (t2)		Depression (t1)		Depression (t2)		System justification (t1)		System justification (t2)	
	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD
	Argentina	5.16	1.058	5.13	0.990	3.20	1.505	3.18	1.423	2.89	1.584	2.84	1.577	2.61	1.283	2.79
Brazil	4.95	1.048	4.98	1.078	3.89	1.337	3.97	1.401	3.57	1.608	3.60	1.603	2.41	1.341	2.50	1.372
China	4.95	0.993	4.91	1.016	3.19	1.124	3.05	1.261	3.03	1.327	2.92	1.294	4.12	1.448	4.11	1.435
Estonia	4.86	0.990	4.86	0.991	2.90	1.243	2.75	1.192	2.65	1.266	2.55	1.284	3.58	1.197	3.62	1.196
Germany	5.11	1.144	5.12	1.093	3.05	1.416	3.01	1.396	2.53	1.541	2.53	1.466	3.47	1.316	3.59	1.433
Indonesia	5.23	1.152	5.22	1.311	3.20	1.303	3.39	1.336	3.09	1.469	3.31	1.518	3.62	1.354	3.84	1.396
Italy	4.89	1.114	4.81	1.122	3.61	1.275	3.61	1.313	3.22	1.551	3.24	1.565	2.48	1.260	2.48	1.276
Japan	4.12	1.150	4.14	1.179	2.68	1.318	2.63	1.317	2.51	1.548	2.40	1.509	3.58	1.023	3.59	1.078
South Korea	4.09	1.091	4.11	1.072	3.04	1.299	3.02	1.348	2.99	1.540	3.01	1.538	2.55	1.216	2.58	1.191
New Zealand	5.17	1.124	5.11	1.116	2.77	1.237	2.79	1.275	2.60	1.433	2.59	1.440	3.94	1.274	4.02	1.263
The Philippines	5.08	1.037	5.18	1.187	2.94	1.254	2.93	1.306	2.64	1.482	2.78	1.481	3.35	1.327	3.59	1.364
Poland	4.80	1.095	4.74	1.031	3.55	1.458	3.53	1.431	3.26	1.656	3.31	1.580	2.67	1.164	2.69	1.178
Russia	4.70	1.016	4.55	1.052	3.15	1.388	3.25	1.342	2.66	1.472	2.75	1.464	3.61	1.354	3.46	1.319
Spain	5.13	1.065	5.18	1.046	3.28	1.461	3.29	1.517	3.05	1.558	2.97	1.545	2.58	1.240	2.61	1.249
Turkey	4.65	1.237	4.49	1.289	3.58	1.378	3.70	1.465	3.45	1.647	3.46	1.686	2.93	1.557	3.07	1.629
The United Kingdom	5.06	1.122	5.02	1.137	2.86	1.506	2.79	1.492	2.64	1.625	2.63	1.618	3.56	1.367	3.65	1.397
Ukraine	4.29	1.068	4.15	1.195	3.23	1.168	3.32	1.224	2.78	1.417	2.80	1.538	2.45	1.055	2.42	1.005
The United States	5.25	1.080	5.19	1.052	2.58	1.349	2.57	1.369	2.27	1.477	2.25	1.442	3.53	1.261	3.64	1.188

Table 3. Matrix correlation

	M	SD	α	1	2	3	4	5	6	7	8	9	10	11	12
1. SWL (t1)	4.85	1.147	.86	r											
				p											
2. SWL (t2)	4.82	1.149	.87	r	.784										
				p	.000										
3. Anxiety (t1)	3.10	1.384	.94	r	-.397	-.345									
				p	.000	.000									
4. Anxiety (t2)	3.09	1.406	.94	r	-.335	-.373	.719								
				p	.000	.000	.000								
5. Depression (t1)	2.83	1.546	.86	r	-.465	-.400	.786	.601							
				p	.000	.000	.000	.000							
6. Depression (t2)	2.83	1.543	.87	r	-.406	-.443	.610	.799	.664						
				p	.000	.000	.000	.000	.000						
7. SJ (t1)	3.24	1.387	.87	r	.334	.296	-.197	-.202	-.193	-.186					
				p	.000	.000	.000	.000	.000	.000					
8. SJ (t2)	3.30	1.399	.88	r	.333	.370	-.185	-.184	-.189	-.181	.723				
				p	.000	.000	.000	.000	.000	.000	.000				
9. Subjective social status (t1)	5.47	1.806		r	.513	.487	-.177	-.135	-.225	-.195	.278	.297			
				p	.000	.000	.000	.000	.000	.000	.000	.000			
10. Subjective social status (t2)	5.35	1.853		r	.480	.512	-.154	-.144	-.209	-.201	.257	.318	.713		
				p	.000	.000	.000	.000	.000	.000	.000	.000	.000		
11. Age				r	.084	.087	-.266	-.270	-.217	-.231	.147	.134	-.018	-.062	
				p	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	
12. Gender				r	.059	.041	.120	.119	.052	.056	-.092	-.070	-.044	-.027	-.113
				p	.000	.002	.000	.000	.000	.000	.000	.000	.001	.042	.000

Note. N = 5,901.

wave, as was expected. This pattern of results suggests that, at least in the bivariate correlations, we could observe the palliative function of system justification. In addition, subjective social status (t1) was significantly associated with the subjective well-being variables so that high-status people were more satisfied with their lives ($r = .487$), less anxious ($r = -.135$), less depressed ($r = -.195$) and justified the system more ($r = .297$) at time 2. Finally, being older and female is associated with higher scores on the measures of well-being.

Satisfaction with life

The multilevel regression models for satisfaction with life are presented in Table 4. Model 1, in which we only included the intercept, showed that 9.96% of the variance was due to the nested structure of the data. This means that there was considerable variance at the country level that could be potentially explained. In Model 2, we included the individual-level predictors, improving the goodness of fit with respect to Model 1 ($\Delta -2\text{Log} = 2660.91$, $\Delta\text{AIC} = 5311.83$, $\Delta\text{BIC} = 5278.42$), with a significant likelihood-ratio test, $\chi^2(5) = 5321.83$, $p < .001$. After controlling for satisfaction with life in the first wave, system justification and subjective social status were significantly and positively related to the dependent variable. Neither age nor gender were significant predictors in this model.

In Model 3, we included Gini as a group-level predictor, improving the goodness of fit according to -2Log ($\Delta = 1.74$) and AIC ($\Delta = 1.47$), although both BIC ($\Delta = -5.21$) and likelihood-ratio test, $\chi^2(1) = 3.48$, $p = .062$, indicated a worse fit. The results were similar to the Model 2 so that system justification and subjective social status were positively related to satisfaction with life, but the Gini did not approach conventional levels of significance.

In Model 4, we included the interaction terms, but the goodness of fit was worse than in Model 3, according to the likelihood-ratio test, $\chi^2(2) = 2.38$, $p = .305$, AIC ($\Delta = -1.62$) and BIC ($\Delta = -14.99$). The individual-level predictors maintained their significance, but neither Gini nor the interaction terms were significantly associated with satisfaction with life.

In Model 5, we included the individual-level predictors and the HDI as a national-level variable, but we did not obtain a better goodness of fit, $\chi^2(1) = 0.04$, $p = .8416$, $\Delta\text{AIC} = -1.96$, $\Delta\text{BIC} = -8.65$. The pattern of results was similar to the previous models so that the only significant predictors were system justification and subjective social status, after accounting for satisfaction with life in the first wave.

Finally, in Model 6, we included the interaction terms, obtaining a worse goodness of fit in comparison to Model 5, $\chi^2(2) = 1.65$, $p = .437$, $\Delta\text{AIC} = -2.35$, $\Delta\text{BIC} = -15.71$. The results indicated that neither HDI nor the interaction terms significantly predicted satisfaction with life in our sample.

Anxiety

The second dependent variable is anxiety, for which results are shown in Table 5. The results for Model 1 allow us to compute an intraclass correlation, which suggests that 6.95% of the variance is due to the hierarchical structure of the data. This means, there was less country-level variability in anxiety compared with life satisfaction. In Model 2, we included the individual-level predictors, improving the goodness of fit according to -2Log

Table 4. Multilevel-linear regressions: satisfaction with life scale

	Model 1			Model 2			Model 3			Model 4			Model 5			Model 6		
	b	SE	p	b	SE	p	b	SE	p	b	SE	p	b	SE	p	b	SE	p
Constant	4.83	0.087	.000	4.82	0.088	.000	4.82	0.080	.000	4.82	0.080	.000	4.82	0.088	.000	4.82	0.088	.000
SWL (t1)				0.68	0.010	.000	0.68	0.010	.000	0.68	0.010	.000	0.68	0.010	.000	0.68	0.010	.000
SJ (t1)				0.02	0.008	.001	0.02	0.008	.001	0.02	0.008	.001	0.02	0.008	.001	0.02	0.008	.001
Subjective social status (t1)				0.08	0.006	.000	0.08	0.006	.000	0.08	0.006	.000	0.08	0.006	.000	0.08	0.006	.000
Age				0.00	0.001	.161	0.00	0.001	.161	0.00	0.001	.160	0.00	0.001	.171	0.00	0.001	.142
Gender				0.02	0.019	.106	0.02	0.019	.108	0.02	0.019	.108	0.02	0.019	.106	0.02	0.019	.104
Gini							0.02	0.012	.195	0.02	0.012	.195	0.02	0.012	.051			
HDI													-0.22	1.086	.020	-0.21	1.086	.020
SJ by Subjective social status										0.00	0.004	-.079	.427			0.00	0.004	-.089
SJ by Gini										0.00	0.001	-1.28	.199			-0.09	0.098	-0.96
SJ by HDI										.595			.595			.595		
Intragroup R ²										.150			.149			-.028		
Intergroup R ²																		
-2 Log likelihood				-8926.7			-6265.786			-6264.05			-6262.86			-6264.94		
AIC				17859.4			12546.10			12546.10			12547.72			12549.53		
BIC				17879.45			12606.24			12606.24			12621.23			12609.68		

Note. In some models, we obtained negative intergroup R². According to the literature (e.g., Recchia, 2010), it could be due to random chance or misspecification. Most likely, within multilevel models, misspecification may be originated in different direction at individual and group level. Nevertheless, we think this is not a relevant issue in our analyses, given that we obtained negative intergroup R² in models 5 and 6 for satisfaction with life scale and 3 and 4 for depression, which are coincident with the inclusion of a level-two predictor that does not approach conventional levels of significance. In the case of models 2 for all the dependent variables (when including only individual-level predictors), we also obtained negative intergroup R², but this is reversed when including a level-two significant (or marginally significant) predictor.

($\Delta = 2016.09$), the likelihood-ratio test, $\chi^2(5) = 3946.77$, $p < .001$, AIC ($\Delta = 4022.18$), and BIC ($\Delta = 3988.77$). After controlling for anxiety in the first wave, system justification, age, and gender were significantly related to anxiety (t2). Thus, endorsing system-justifying beliefs, and being older and male were related to less anxiety.

In Model 3, we included Gini as a country-level predictor, improving the goodness of fit according to AIC ($\Delta = 3.03$) and AIC ($\Delta = .28$), but not according to the likelihood-ratio test, $\chi^2(1) = 2.40$, $p = .122$. The results were similar to Model 2 so that system justification and age were negatively related to anxiety, and gender was positively associated with this variable. Nevertheless, the Gini index was not significantly related to anxiety.

In Model 4, we included the interaction terms and found the goodness of fit was worse than in Model 3, $\chi^2(2) = 0.89$, $p = .639$, $\Delta\text{AIC} = -3.03$, $\Delta\text{BIC} = 16.40$. We obtained a similar pattern of results to previous models so that the individual-level predictors were the same, but neither subjective social status nor Gini moderated the effect of system justification on anxiety.

In the Model 5, we included HDI as a country-level predictor, obtaining a better fit than in Model 2 ($\Delta-2\text{Log} = 2.11$, $\Delta\text{AIC} = 2.23$), but not according to the likelihood-ratio test, $\chi^2(1) = 3.39$, $p = .066$. System justification and age were negatively and gender positively related to anxiety. In addition, HDI did approach significance at $p < .05$ so that the more developed a country, the less anxiety reported by its citizens.

Finally, in Model 6, we included the interaction terms. The goodness of fit, however, was worse than in the previous model, $\chi^2(2) = .95$, $p = .621$, $\Delta\text{AIC} = -2.83$, $\Delta\text{BIC} = -16.20$, and neither subjective social status nor HDI moderated the effect of system justification on anxiety in the second wave.

Depression

The results for the depression scale are presented in Table 6. The Model 1 indicated that the 5.37% of the variance was due to the hierarchical structure of the data. In Model 2, we included the individual-level predictors, improving the goodness of fit, $\Delta-2\text{Log} = 1320.45$, $\chi^2(5) = 2894.36$, $p < .001$, $\Delta\text{AIC} = 2630.91$, $\Delta\text{BIC} = 2597.49$. The results indicated that, after accounting for depression in the first wave, system justification, subjective social status, and age were significantly and negatively associated with depression in the second wave.

In Model 3, we included Gini as a country-level predictor. However, the goodness of fit was worse than in Model 2, $\Delta-2\text{Log} = 1.11$, $\chi^2(1) = 1.50$, $p = .220$, and $\Delta\text{BIC} = -6.45$. The results were similar to previous models so that system justification, subjective social status, and age cross-lagged predicted less depression. However, the Gini index was not significantly associated with depression.

In Model 4, we tested the significance of the interaction terms, but the goodness of fit was not better than in Model 3, $\chi^2(2) = 3.80$, $p = .150$, $\Delta\text{AIC} = -1.38$, $\Delta\text{BIC} = -14.75$. The results were similar to those obtained in models 2 and 3, but neither subjective social status nor Gini moderated the main effect of system justification on depression.

In Model 5, we included HDI as a country-level predictor, instead of Gini, obtaining a better fit than in Model 2, $\Delta-2\text{Log} = 2.43$, $\chi^2(1) = 7.42$, $p = .006$, $\Delta\text{AIC} = 2.86$. In addition to the individual-level predictors, after controlling for depression in the first wave, HDI was significant and negatively related to depression. Thus, higher levels of depression were observed in more highly developed countries.

Finally, in Model 6, we included the interaction terms, without obtaining a better fit ($\Delta AIC = 1.24$ and $\Delta BIC = 14.61$), but not according to the likelihood-ratio test, $\chi^2(2) = 4.61, p = .100$. The results were similar to previous models so that after accounting for depression in the first wave, system justification, subjective social status, gender, and HDI predicted less depression in the second wave. However, neither subjective social status nor HDI moderated the effect of system justification on depression.

Discussion

System Justification Theory proposes that endorsing system-justifying beliefs has psychological benefits, termed the *palliative function of ideology* (Jost & Hunyady, 2002). We tested this hypothesis using a longitudinal representative sample of data collected online from 18 countries, with a particular focus on the role of inequality, social status, and longitudinal associations. The results supported Hypothesis 1, in that system justification (collected at time 1) predicted positively life satisfaction, and negatively anxiety and depression in the second wave, after controlling for these variables in the first wave. The results regarding Hypothesis 1 suggest that a powerful reason behind the high stability of contemporary state systems is that perceiving social arrangements as fair, legitimate, and just is positively associated with general psychological well-being. Thus, in accord with Jost *et al.* (2015), across cultures people are actively motivated to justify their social, political, and economic systems. This is congruent with previous studies, which have found a main effect of system-justifying beliefs on psychological well-being (e.g., Napier & Jost, 2008; Osborne & Sibley, 2013; Sengupta *et al.*, 2017). Results fit well with a general positive effect of system justification beliefs on individual well-being, predicting satisfaction with life and positive affect balance (i.e., lower depression and anxiety).

Hypotheses 2 and 3 examined the influence of contextual factors on this relationship. Although we expected higher values in well-being measures within more developed and less equalitarian countries, we did not find this pattern of results. Indeed, all the regression coefficients for Gini index were non-significant, and HDI was not related to life satisfaction. However, we found a significant association between HDI and anxiety and depression, in the direction expected, so that in more developed countries, there was less depression and anxiety. The overall pattern of results is congruent with studies that did not find a direct effect of inequality on well-being. Previous studies have found that it is GNP or high national level of income that is associated with well-being – and not the Gini index (Berg & Veenhoven, 2010, but see Oishi, Kesebir, & Diener, 2011; Sengupta *et al.*, 2017 for direct effects of inequality on well-being within regions within a country). In general, high national income or GNP, educational level and high life expectancy, that compose HDI, are related to higher subjective well-being (Basabe & Ros, 2005; Diener, Diener, & Diener, 1995). In this vein, in our results HDI predicted significantly less depression, congruent with studies that found an association between national income and well-being (Basabe *et al.*, 2002).

Hypothesis 4 (that the main effect of system justification on psychological outcomes will be qualified by an interaction with subjective social status so that the effect will be positive for high-status people and negative or zero for low-status people) was not supported. According to SJT, among high-status people, the motivation to self- and group justification is coherent with system justification, but among low-status people, these motivations are contradictory (Jost & Hunyady, 2002). For that reason, SJT proposes that

the palliative function of system justification is likely to be more prevalent among high-status than among low-status people (Jost & Hunyady, 2002; Jost *et al.*, 2004). However, in our sample the expected interaction term between system justification and an individual's social status was not significant. This general pattern of results, in which the *palliative function of ideology* tends to be similarly distributed across social-status positions, is similar to findings from New Zealand (Sengupta *et al.*, 2017) and Chile (Vargas-Salfate, 2017), providing support for an alternative view of the hedonic consequences of system justification beliefs.

Hypothesis 5 explored the relationship between individual and country-level factors. We expected to find stronger relationships between system justification and psychological well-being among high-developed and less egalitarian countries, extending the arguments proposed by SJT from the individual level to the country level (Jost & Banaji, 1994) and taking into account results from previous studies (Sengupta *et al.*, 2017). However, this hypothesis was not confirmed.

Taken together, these results confirmed the main effect prediction from SJT that endorsing system-justifying beliefs is associated with better general psychological well-being (Jost & Hunyady, 2002). However, we did not find a significant impact for moderators of this effect at the country level. Rather, we found that at the country level, inequality does not play a significant role in the palliative function of ideology, contradicting a recent study analysing regional data from New Zealand (Sengupta *et al.*, 2017). In addition, our results suggest that the palliative function of system justification is less unequally distributed than the theory posits (e.g., Jost & Hunyady, 2002). Instead of robust interactions with status measures, both at individual and at collective level, we found a homogeneous pattern of results with few significant interactions. Agreement with the dominant ideology, high false consciousness or sharing system justification beliefs increases well-being in general and not only among the ruling or dominant groups. Finally, these results were tested in a longitudinal sample, so both cross-sectionally, and after 6-month system-justifying beliefs predicted enhanced subjective well-being, contradicting previous studies with longitudinal samples showing differences between cross-sectional and cross-lagged effects (e.g., Godfrey *et al.*, 2017; Osborne & Sibley, 2013).

There are four alternative explanations to those provided for SJT for these findings. First, according to McCoy, Wellman, Cosley, Saslow, and Epel (2013), the perception of control is a possible mechanism involved in the observed palliative function of ideology among low-status individuals. The authors proposed that endorsing system-justifying ideologies would carry a perception of personal control over life outcomes, in a similar vein to the original statement of SJT (Hennes *et al.*, 2012). This perception of control, although illusory, would overcome the potential conflicts between ego and group identity, on the one hand, and system justification, on the other hand, among disadvantaged individuals.

A second potential explanation for our results involves the role of group identification (O'Brien & Major, 2005). In order to experience a conflict between justification motives, low-status people must identify with their social-status ingroup. Indirect evidence suggests this argument is not always valid: For example, when Bahamondes-Correa (2016) studied the relationship between system-justifying beliefs and anxiety and depression symptoms among gay men and lesbian women, he found that homo-negativity, which would be interpreted as an opposite measure of pride, mediated that association. In other words, feelings of pride for sexual orientation identity would be a protective factor against anxiety and depression. Several studies have shown that most people self-identify as middle-class (Castillo, Miranda, & Madero-Cabib, 2013; Evans & Kelley, 2004) regardless of

their objective social standing, so we may infer that the self-reported low-status individuals in our study do not necessarily identify with this state as a group identity. This would lead to an absence of conflict between justification motivations.

Third, a different proposal was argued by Owuamalam, Paolini, and Rubin (2017), which posited a social identity approach to the studied phenomenon. According to these authors, individuals with a non-concealable central stigma may be involved in socially creative appraisals to maintain their positive ingroup identity, despite being discriminated against. Specifically, those individuals may embrace positive elements of their identity and/or may *accommodate* their low-status position within society, attributing discrimination as a behaviour against their ingroup, but not versus themselves personally. We suspect that our findings could be attributable to this last approach, paralleling the mechanism observed among ethnic populations.

Finally, as an anonymous reviewer suggested, the divergent results within the *palliative function of ideology* may be due to different measures of social status. For example, status has been treated as ethnicity (e.g., O'Brien & Major, 2005; Sengupta *et al.*, 2017), body weight (e.g., Quinn & Crocker, 1999, study 2), income (e.g., Godfrey *et al.*, 2017), gender (Vargas-Salfate, 2017), among others. In this article, we treated status as subjective social-economic status, because we were using a cross-cultural sample. Future research must address this issue, searching for boundary conditions within this literature.

Limitations

In this article, we focused on a theoretical hypothesis proposed by SJT, namely the palliative function of ideology (Jost & Hunyady, 2002). Nevertheless, the rationale behind this idea is not completely coherent with other statements proposed by the same theoretical approach. According to SJT, ego and group justification motivations are in contradiction to system justification among low-status individuals. For the specific case of the palliative function of ideology, SJT proposes that endorsing system-justifying beliefs should be negatively associated with psychological well-being among low-status individuals, because they would then blame themselves for their position within society (Jost & Hunyady, 2002; Jost *et al.*, 2004). On the other hand, SJT proposed that low-status individuals would be more motivated to justify social arrangements when the contradiction between ego/group justification motivation and system justification motivation are highly salient (Jost, Pelham, *et al.*, 2003). This last hypothesis is one of the most controversial within SJT, receiving both theoretical and empirical criticism (e.g., Brandt, 2013; Caricati, 2016; Caricati & Lorenzi-Cioldi, 2012; Owuamalam *et al.*, 2016; Owuamalam, Rubin, & Issmer, 2016; Owuamalam, Rubin, Spears, & Weerabangsa, 2017). This rationale is completely different from the palliative function of ideology.

Although cross-cultural design was a major strength of the present study, we need to consider several limitations as well. One important weakness of our research is the lack of invariance in our measures. Future research should include scales more cross-culturally comparable, in order to confirm our results. In addition, a major caveat was the number of countries in our overall sample. We used 5,901 from 18 countries, but ideally we should have had more countries in order to obtain more robust results for the multilevel-linear regressions (Gelman & Hill, 2007). The small number of countries in our sample might explain the absence of significant cross-level interactions in our multilevel-linear regression models. In addition, our country sample is skewed, so that we lacked more unequal and less developed countries, which could be also a reason for the non-significant

cross-level interactions.⁴ Finally, we obtained limited sample sizes within countries, which may explain several discrepancies between our data and international reports on well-being or life satisfaction (e.g., Helliwell, Layard, & Sachs, 2017).

The second main limitation of the study is the short lag between the two waves. Previous longitudinal studies testing the palliative function of ideology have measured individuals with an 8-month lag (Godfrey *et al.*, 2017), or the second wave was conducted a year later the first (Harding & Sibley, 2013). This is particularly relevant to note, given that we used chronic measures of anxiety, depression, and life satisfaction, instead of state indexes, which may be less variable over a 6-month period, and in turn may explain our pattern of results. In addition, to our knowledge only those studies have addressed the longitudinal effect of system justification on psychological well-being. For these reasons, we think it would be valuable to conduct new research focused on this topic, using more precise measures and a longer temporal scope.

The third main methodological limitation is that we did not account for social identification, perception of control, and social creative appraisals. As explained previously, both theoretical statements and empirical findings suggest that these variables could moderate or mediate the palliative function of ideology by group status.

Nevertheless, our research extended knowledge about SJT, because we tested longitudinally across cultures and with representative samples several hypotheses that have been studied in student samples (e.g., McCoy *et al.*, 2013; O'Brien & Major, 2005) or samples from only one country (e.g., Napier & Jost, 2008; Osborne & Sibley, 2013). The overall pattern of results is clear: Palliative effects for system-justifying beliefs were found across 18 cultures, and these were not moderated by social status or country level inequality. The palliative effects of system-justifying beliefs appear to be a stabilizing factor for societies, even those with high inequality and lower levels of human development.

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⁴ The main reason for this is that it is almost impossible to use the Internet to collect representative samples in low development countries.

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