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The Construct of Subjective Economic Inequality

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Abstract

Economic inequality has been associated with a host of social ills, but most research has focused on objective measures of inequality. We argue that economic inequality also has a subjective component, and understanding the effects of economic inequality will be deepened by considering the ways that people perceive inequality. In an American sample ($N = 1{,}014$), we find that some of the key variables that past research has found to correlate with objective inequality also correlate with a subjective measure of inequality. Across six countries ($N = 683$), we find that the relationship between subjective inequality and different psychological variables varies by country. Subjective inequality shows only modest correlations with objective inequality and varies by sociodemographic background.

Keywords

economic inequality, subjective inequality, culture, well-being

Recently, economic inequality has increased worldwide (e.g., Brandolini & Smeeding, 2011; Piketty, 2014) along with research on the topic. This increasing interest appears well founded, as inequality has been associated with a host of social ills such as lower well-being and trust and higher status anxiety (e.g., Delhey & Dragolov, 2014; Wilkinson & Pickett, 2010). However, much of this research has focused on objective, aggregate-level measures of inequality.

We propose that inequality impacts people through two ways: first, as much past research has focused on, inequality has an *objective* component. This objective component is a macrolevel factor that describes the distribution of income or wealth in a geographic area and is commonly measured with the Gini coefficient (in addition to other measures). Objective inequality highlights the ways that people are impacted by having different levels of income or wealth than others. However, people struggle to understand distributions accurately (e.g., Kahneman & Tversky, 1973), and the actual degree of objective inequality may not always be evident to individuals (e.g., Norton & Ariely, 2011). Understanding the full psychological impact of inequality also requires considerations of its *subjective* component. Subjective inequality is an individual-level factor that captures how individuals perceive inequality within their environment. The main goals of this article were to look at the relationship between subjective inequality and some of the key psychological constructs that previous research has associated with objective inequality and to test whether subjective inequality is a meaningful construct. We see subjective inequality as an additional tool that can address some of the shortcomings of objective measures.

The idea that economic phenomena can have both objective and subjective components is not new. For example, socioeconomic status (SES) has long been recognized to have both an objective and a subjective component. An individual's objective position in the social hierarchy can be determined by assessing their income and/or education status. In contrast, subjective SES is often measured with the MacArthur Scale (Adler et al., 2000), which assesses people's relative status compared with others. Subjective SES does not just replicate the results obtained by objective indices but is often a stronger and more consistent predictor of various outcomes (e.g., Adler et al., 2000; Singh-Manoux et al., 2003).

Similarly, considering subjective inequality will improve our understanding of the effects of inequality in that: (1) Unlike objective inequality, subjective inequality exists at the individual level and can thus assess whether inequality and other psychological variables correlate. (2) Objective measures of inequality are limited because they assume that people from the same geographic area with the same Gini coefficient have similar experiences, while it is likely that people may still be exposed to rather different amounts of inequality in the neighborhoods they live or in their jobs. (3) People's perceptions of inequality may be affected by their political attitudes,

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personality traits, and social networks, which cannot be assessed when solely considering objective inequality. Moreover, correlations that are observed in aggregate data can differ from those observed at the individual level, and ignoring this can result in the ecological fallacy (e.g., Robinson, 2011). In addition, studying inequality at the individual level allows us to compare the relationship of subjective inequality and different psychological variables between countries. Perhaps some relationships occur in some cultural contexts but not in others.

Much past research on economic inequality has investigated how accurately people perceive inequality, and how these perceptions predict sociopolitical attitudes related to inequality (Arsenio, 2018; Hauser & Norton, 2017). For example, when presented with differing pie charts that indicate wealth inequality, Americans underestimate the extent of existing wealth inequality and state they would prefer more equal distributions (Norton & Ariely, 2011). Likewise, people who perceive more wealth inequality (as indicated by choosing from an array of distributions) judge their society to be less fair (e.g., Barreiro et al., 2019; Flanagan & Kornbluh, 2019). When inequality perceptions are assessed by asking people to estimate the ratio of the salaries of the chairman compared with an unskilled factory worker, higher perceptions of inequality were associated with higher preferences for inequality, especially among those who held meritocratic beliefs (García-Sánchez et al., 2019). Perceptions of inequality at the local level may be more accurate than those at a national level, especially among people with lower incomes (Newman et al., 2018).

In contrast to past research, we are conceptualizing perceptions of inequality as an individual difference variable that assesses how people interpret and evaluate the level of inequality around them—that is, their global assessments of how unequal their society feels. By global assessments, we mean a person's gestalt sense of how much inequality they perceive in their environment. This global assessment may not be directly translatable into more precise objective measures of inequality such as the Gini coefficient. We expect that people's subjective inequality will be influenced by objective inequality, as well as their temperament, and any of their recent experiences. An assessment of people's global feelings of subjective inequality will afford the exploration of how people who perceive much inequality differ from those who perceive little.

While some previous research has studied the effects of inequality both with an objective and a subjective measure (Sánchez-Rodríguez et al., 2017; Sprong et al., 2019), to our knowledge, no effort has been made to systematically test whether subjective inequality predicts some of the same psychological outcomes that past research has found with measures of objective, aggregate-level inequality. To do so, we first test how subjective inequality relates to various psychological variables that have been commonly studied in research on objective inequality. We start with the broadest definition of economic inequality (encompassing inequality of wealth, income, and opportunity) and with people's subjective experience of inequality at the state (Study 1) and country level (Study 2; the scale we constructed can be adapted to any geographic reference point).

We also wish to distinguish people's subjective perceptions of inequality from their general unfairness beliefs about inequality. Many people find high levels of inequality to be unfair (e.g., Dawes et al., 2007); indeed, much research suggests that people have an inequality aversion and favor more equal distributions of resources (e.g., Norton & Ariely, 2011). However, some have proposed that people are not so much opposed to inequality per se, but they are opposed to *unfair* inequality (Starmans et al., 2017). But while general unfairness beliefs about inequality may affect policy preferences such as support for redistribution (e.g., Starmans et al., 2017), it is unclear whether unfairness beliefs can account for some of the relations between subjective inequality and various psychological constructs (e.g., well-being). Therefore, we created a scale that can distinguish people's unfairness beliefs about inequality from subjective inequality. Finally, we explored whether sociodemographic factors such as SES, income, and conservatism are associated with subjective inequality. Some recent research has found, for example, that income (Newman et al., 2018), media coverage (Diermeier et al., 2017), and acceptance of hierarchy (Kteily et al., 2017) affect perceptions of inequality.

The goal of the present research is to test (1) whether a measure of subjective inequality can replicate some of the key findings from past research on objective inequality (viz., well-being, depression, anxiety, stress, status anxiety, and trust), (2) how the relationship between subjective inequality and some of these findings compares across six culturally distinct countries, (3) whether these relationships hold over and above general unfairness beliefs of inequality, (4) to what extent sociodemographic differences (e.g., SES and political orientation) correlate with differences in subjective inequality, and 5) whether subjective inequality is correlated with objective inequality.

Psychometric Analyses of the Subjective Inequality Scale

We created the two-factor Subjective Inequality Scale (SIS) to capture people's subjective inequality and general unfairness beliefs about inequality. In two separate studies, we first assessed the psychometric properties of the SIS (see supplemental online material [SOM] S1 and S2 for details about the samples and methods). In the first study (Study S1 in the SOM), we conducted an exploratory factor analysis (EFA) on an original pool of 24 items, an EFA on the final eight-item scale (see Table 1 for items and factor loadings), and we assessed convergent validity by correlating the SIS with various other psychological constructs (see SOM Table S2). In the second study (Study S2 in the SOM), we conducted a confirmatory factor analysis on the final eight-item scale. Across these analyses, the SIS demonstrated good psychometric properties.

Table 1. Results From a Factor Analysis of the Eight-Item Subjective Inequality Scale (SIS).

SIS Items	Factor	
	1	2
Factor 1 (subjective inequality)		
Almost all the money that is earned goes to only a few people.	**.67**	.14
Besides those at the very top, no one else has much money at all.	**.88**	−.04
Real opportunities to succeed in life are only available to the wealthy.	**.69**	.07
Only those at the top own any wealth at all.	**.85**	−.03
Factor 2 (unfairness beliefs)		
It is extremely unfair if the overall amount of economic inequality is very high.	.01	**.81**
It is not fair at all if there are large differences in income between the rich and the poor.	.05	**.77**
It is immoral if your income is dependent on where you grew up.	−.09	**.69**
It is extremely unjust if children of affluent parents get a better education.	.04	**.67**

Note. Factor loadings above.6 are bolded.

Study 1

We tested whether a measure of subjective inequality can predict some of the same social and health outcomes that objective measures have found in the past. We turned to some of the key findings from past research on inequality such as subjective well-being (e.g., Wilkinson & Pickett, 2010). Objective measures of economic inequality correlate with decreased happiness (Oishi et al., 2011), and longitudinal analyses across 84 countries reveal a negative association between life satisfaction and inequality (Verme, 2007; although we note that there is an ongoing debate about the existence of these associations, cf. Berg & Veenhoven, 2010; Kelley & Evans, 2017). Furthermore, objective inequality has been found to be associated with an increased risk for depression (e.g., Fan et al., 2011; Muramatsu, 2003). There is also evidence that objective measures of economic inequality predict an increase in anxiety disorders (e.g., Wilkinson & Pickett, 2010). A key reason why objective inequality has these harmful correlates could be that inequality leads to heightened stress (e.g., Pickett & Wilkinson, 2015) and status anxiety—extensive worry about one's place in the hierarchy (e.g., Delhey & Dragolov, 2014; Layte & Whelan, 2014). Finally, objective inequality also predicts lower trust (e.g., Alesina & LaFerrera, 2000; Delhey & Dragolov, 2014).

We also sought to assess whether subjective inequality would correlate with an objective inequality measure, namely, the Gini coefficient for each U.S. state. We chose to focus on the Gini because it has been the most commonly used measure in research of objective inequality (Allison, 1978). Last, we tested how sociodemographic differences are related to perceptions of inequality.

Methods

Participants

We aimed to recruit over 1,000 participants to ensure sufficient power in this first study. A total of 1,064 American participants were recruited from MTurk, and those who indicated on a binary question that they had taken the survey seriously were retained for further analyses. This resulted in a final sample of 1,014 participants ($M_{age} = 39.19$, $SD = 13.27$; 62% female).

Materials

Subjective inequality and unfairness beliefs. Participants completed the SIS that asked how much inequality they perceive in their state of residence ($M = 4.06$, $SD = 1.49$, Cronbach's $\alpha = .89$) and how unfair they find high inequality in general ($M = 4.68$, $SD = 1.47$, $\alpha = .85$) on a 7-point scale from *strongly disagree* to *strongly agree*.

Subjective well-being. Participants completed the following two items adapted from the World Values Survey (Inglehart et al., 1998): (1) "Taking all things together, how happy would you say you are these days?" and (2) "All things considered, how satisfied would you say you are with your life these days?" Participants responded on a 10-item scale from *very unhappy*/*very dissatisfied* to *very happy*/*very satisfied* ($M = 6.37$, $SD = 2.26$, $r = .87$, $p < .001$).

Depression, anxiety, and stress. Participants completed the 21-item Depression, Anxiety, and Stress Scale (Henry & Crawford, 2005) on a 4-point scale that asked how much each statement had applied to them over the past week from *never* to *almost always* (depressive symptoms: $M = 1.72$, $SD = .71$, $\alpha = .93$; anxious symptoms: $M = 1.54$, $SD = .56$, $\alpha = .87$; and stress: $M = 1.85$, $SD = .62$, $\alpha = .88$).

Status anxiety. Participants completed two items taken from the European Quality of Life Survey (Boehnke, 2005), which have been used in previous research on status anxiety and inequality (e.g., Delhey & Dragolov, 2014): (1) "I don't feel the value of what I do is recognized by others" and (2) "Some people look down on me because of my job situation or income." Participants responded on a 5-point scale from *strongly disagree* to *strongly agree* ($M = 2.93$, $SD = 1.04$, $r = .53$, $p < .001$).

Trust. Participants responded to one item from the World Values Survey (Inglehart et al., 1998): "Generally speaking, would you say that most people can be trusted, or that you can't be too careful in dealing with people?" Participants responded on an 11-point scale from "can't be too careful" to "most people can be trusted" ($M = 5.60$, $SD = 2.64$).

Subjective SES. Participants chose their subjective SES on a ladder with 10 rungs, where each rung represents one's relative standing in society ($M = 5.01$, $SD = 1.77$; Adler et al., 2000).

Income. Participants indicated their annual household income on a scale from 1 (*less than $10,000*) to 13 (*over 120,000*) in $10,000 increments ($M = 6.04$, $SD = 3.42$).

Conservatism. Participants indicated their political orientation separately for social ($M = 3.37$, $SD = 1.75$) and economic issues ($M = 3.81$, $SD = 1.76$) on a 7-point scale from *very liberal* to *very conservative*. As these were highly correlated ($r = .79$, $p < .001$), we combined them to a single measure of conservatism ($M = 3.59$, $SD = 1.66$).

Gini. The Gini coefficient from 2016 was assigned to each state (data from the U.S. Census Bureau).

We also explored how a number of other psychological constructs that, to the best of our knowledge, have not yet been investigated with objective measures, relate to subjective inequality. The results are provided in Table S3 in the SOM. All materials, data, and analysis code for all studies are publicly available on the Open Science Framework and can be accessed at https://osf.io/vpqgb/.

Results

To test how subjective inequality is associated with the psychological constructs previous research has studied with objective measures, we conducted zero-order correlations. Replicating previous research looking at objective measures of economic inequality, participants who perceived more inequality reported less well-being, $r = -.24$, $p < .001$, 95% CI = [−.30, −.18] and trust, $r = -.10$, $p = .003$, 95% CI = [−.16, −.04], more depression, $r = .29$, $p < .001$, 95% CI = [.23, .35], anxiety, $r = .22$, $p < .001$, 95% CI = [.16, .28], stress, $r = .22$, $p < .001$, 95% CI = [.16, .28], and status anxiety, $r = .27$, $p < .001$, 95% CI = [.21, .33]. To test whether these relations hold after controlling for unfairness beliefs about inequality (which was correlated with subjective inequality, $r = .58$, $p < .001$), we reran the analyses with unfairness beliefs as a covariate. We also added political orientation and SES as covariates as attitudes toward inequality may be politically charged and affected by people's SES. The results hold for each construct after including these covariates (see Table 2 and Table S4 in the SOM for zero-order correlations between all variables).

To assess whether subjective inequality relates to objective inequality, we correlated subjective inequality with the state-level Gini coefficients in two different ways. First, we calculated a correlation using each individual data point: Each person's score of subjective inequality is correlated with the Gini of the state the person lives in. Second, we calculated the mean level of subjective inequality weighted by sample size for each state using the responses from all individuals living in the same state and then correlated these mean state scores with the state Gini coefficients. The correlation between subjective inequality and state-level Gini when using all individual data points was $r(1,012) = .06$, $p = .045$. When calculating the correlation from the mean level of subjective inequality per state, the correlation was $r(49) = .26$, $p = .067$

Table 2. Regression Predicting Psychological Constructs From Subjective Inequality and Different Covariates.

	Subjective Well-Being			Depression			Anxiety			Stress			Status Anxiety			Trust		
Predictors	Estimates	CI	*p*	Estimates	CI	*p*	Estimates	CI	*p*	Estimates	CI	*p*	Estimates	CI	*p*	Estimates	CI	*p*
(Intercept)	6.37	[6.24, 6.50]	**<.001**	1.71	[1.67, 1.75]	**<.001**	1.53	[1.49, 1.56]	**<.001**	1.84	[1.80, 1.87]	**<.001**	2.93	[2.87, 2.99]	**<.001**	5.54	[5.37, 5.70]	**<.001**
Subjective inequality	−0.34	[−0.50, −0.17]	**<.001**	0.16	[0.11, 0.21]	**<.001**	0.11	[0.06, 0.15]	**<.001**	0.11	[0.06, 0.16]	**<.001**	0.20	[0.13, 0.28]	**<.001**	−0.29	[−0.49, −0.08]	**.007**
Unfairness beliefs	−0.06	[−0.23, 0.11]	.513	0.00	[−0.05, 0.06]	.872	0.00	[−0.04, 0.05]	.864	0.03	[−0.02, 0.08]	.260	0.08	[0.00, 0.16]	**.047**	−0.13	[−0.35, 0.08]	.221
Subjective SES	0.85	[0.71, 0.98]	**<.001**	−0.15	[−0.20, −0.11]	**<.001**	−0.07	[−0.10, −0.03]	**<.001**	−0.06	[−0.10, −0.02]	**.001**	−0.30	[−0.36, −0.24]	**<.001**	0.32	[0.15, 0.49]	**<.001**
Conservatism	0.07	[−0.08, 0.22]	.364	−0.03	[−0.08, 0.02]	.271	−0.00	[−0.04, 0.04]	.834	0.00	[−0.04, 0.05]	.838	0.08	[0.01, 0.16]	**.022**	−0.35	[−0.54, −0.15]	**.001**
Observations		945			945			945			945			945			945	
R^2/adjusted R^2		.203/.199			.135/.131			.066/.062			.063/.059			.160/.156			.038/.034	

Note. Conservatism: higher scores indicate more conservative political orientation. All predictors are standardized. *p*-values below .05 are bolded.

(see Table S5 in the SOM for the zero-order correlations between the Gini and the different psychological constructs).

Finally, we tested how sociodemographic differences relate to subjective inequality. People of lower SES, $r = -.24$, $p < .001$, 95% CI = [−.30, −.18] and with lower income, $r = -.21$, $p < .001$, 95% CI = [−.27, −.15] perceived more inequality, as did people who were politically more liberal, $r = -.40$, $p < .001$, 95% CI = [−.45, −.35], and who were less religious, $r = -.21$, $p < .001$, 95% CI = [−.27, −.15]. Age was not associated with subjective inequality, $r = -.05$, $p = .140$, 95% CI = [−.11, .01], but men perceived slightly more inequality than women, $r = -.06$, $p = .043$, 95% CI = [−.13, −.01].

Discussion

Subjective inequality was associated with more depression, anxiety, stress, status anxiety, and less subjective well-being and trust. These relations replicate much of the research between objective inequality and these variables from past research (e.g., Delhey & Dragolov, 2014; Fan et al., 2011; Wilkinson & Pickett, 2010) and suggest that they also hold at the individual level. Subjective inequality also showed small correlations with state-level Gini coefficients. These small effects suggest that subjective inequality is only weakly influenced by objective inequality, indicating that it is largely distinct. Furthermore, people who are economically worse of (Newman et al., 2018), more liberal, and less religious perceived higher levels of inequality.

Study 1 was conducted with participants from the United States who share a somewhat similar economic context. Therefore, in Study 2, we compared some of the relationships found in Study 1 among six countries.

Study 2

We tested how the associations between subjective inequality, subjective well-being, and status anxiety compare among six different countries. Due to the costs of collecting culturally diverse samples, we reduced the number of variables and focused on well-being and status anxiety because they have been studied most extensively with measures of objective inequality. We selected high- and low-inequality countries, respectively, from within North America (United States and Canada), Western Europe (England and Sweden), and from countries outside of the West (South Africa and Japan). We again tested how subjective inequality correlates with the Gini.

Methods

Participants

Based on the magnitude of the correlation coefficients for well-being and status anxiety from Study 1 (rs = −.24, .27, respectively, with lower CI bounds of −.18 and .21), we aimed to collect data from at least 104 participants per country, which would allow us to reliably detect a true correlation of .20 80% of the time with only a small deviation from sample to sample (Schönbrodt & Perugini, 2013). A total of 842 participants participated in this survey. After excluding participants who failed an attention check question (where they were asked to choose a specific response option),[1] the final sample consisted of 106 American participants ($M_{age} = 50.26$, $SD = 16.95$; 52% female), 111 Canadian participants ($M_{age} = 49.39$, $SD = 15.09$; 50% female), 120 English participants ($M_{age} = 48.27$, $SD = 15.21$; 46% female), 110 Swedish participants ($M_{age} = 33.96$, $SD = 12.44$; 48% female), 116 South African participants ($M_{age} = 31.65$, $SD = 10.89$; 43% female), and 120 Japanese participants ($M_{age} = 33.37$, $SD = 10.98$; 46% female; see SOM Table S5 for more descriptive statistics of sociodemographic factors for each country). Participants from Sweden were recruited through the online survey provider Clickworker, and participants from all other countries were recruited through TurkPrime Panels.

Materials

Subjective inequality and unfairness beliefs. Participants responded to the same measure of subjective inequality as in Study 1, although the instructions asked them how high the level of inequality/how unfair high inequality was in their *country* (rather than state; subjective inequality: $M = 3.94$, $SD = 1.49$, $\alpha = .86$; unfairness beliefs: $M = 5.03$, $SD = 1.34$, $\alpha = .81$), since previous cross-national research on the association between objective inequality and psychological outcomes has also focused on the level of inequality at the country level.

Subjective well-being and status anxiety. Participants responded to the same measures of these constructs as in Study 1 (subjective well-being $M = 6.43$, $SD = 2.18$, $r = .87$, $p < .001$; status anxiety $M = 3.03$, $SD = 1.04$, $r = .55$, $p < .001$).

Income. Participants indicated their annual household income on the same measure as in Study 1 ($M = 4.92$, $SD = 3.21$; the currency and increments were adjusted for each country).

Subjective SES. Participants indicated their subjective SES on the same ladder as in Study 1 ($M = 5.40$, $SD = 1.85$).

Conservatism. Participants indicated their political orientation on a 7-point scale from *very liberal* to *very conservative* ($M = 3.79$, $SD = 1.48$).[2]

Gini. The Gini coefficient for the most recent year that was available (varying from 2015 to 2017) was assigned to each country (data from the Organisation for Economic Co-operation and Development Data, 2018).

All materials were translated and independently back translated by professional translators for the Swedish and Japanese samples (see SOM Translations). In all other countries, the survey was administered in English.

Results

First, we assessed whether the scale demonstrated measurement invariance using a multigroup confirmatory factor analysis. Measurement invariance testing assesses whether the measurement properties of a scale are the same across different subgroups (Fischer & Karl, 2019). The analyses demonstrated that the SIS had configural and metric invariance, but not scalar invariance across all six countries (see SOM Table S6). Thus, while correlations within countries can be compared, mean differences in subjective inequality could be due to either differences in the amount of subjective inequality or differences in the relationship between the latent construct of subjective inequality and how participants responded to the items across the different countries. Hence, the correlations between country-level SIS scores and other country-level variables should be interpreted cautiously.

To test how the relationship between subjective inequality with status anxiety and well-being compares across countries, we first calculated correlations separately for each country. For status anxiety, there was a positive association in all six countries. Replicating Study 1, the more inequality participants in the United States perceived, the more status anxiety they reported, $r = .68$, $p < .001$, 95% CI = [.56, .77]. There was also a positive association between subjective inequality and status anxiety in Canada, $r = .48$, $p < .001$, 95% CI = [.32, .61]; England, $r = .36$, $p < .001$, 95% CI = [.19, .51]; Sweden, $r = .30$, $p = .001$, 95% CI = [.12, .46]; Japan, $r = .46$, $p < .001$, 95% CI = [.31, .59], and in South Africa, the association was marginally significant, $r = .18$, $p = .057$, 95% CI = [−.002, .35]. For well-being, the results varied by country. Replicating Study 1, the more inequality participants in the United States perceived, the less well-being they reported, $r = -.48$, $p < .001$, 95% CI = [−.61, −.32]. There was also a negative association in Canada, $r = -.39$, $p < .001$, 95% CI = [−.54, −.22]. However, in England, $r = -.04$, $p = .663$, 95% CI = [−.22, .14]; Sweden, $r = -.09$, $p = .34$, 95% CI = [−.27, .10]; Japan, $r = .06$, $p = .508$, 95% CI = [−.12, .24]; and South Africa, $r = -.10$, $p = .295$, 95% CI = [−.28, .08], there was no association between subjective inequality and well-being.

Next, we combined the data and used effect codes for the six countries to compare the magnitude of the associations. To test whether the relationship between subjective inequality and the two outcome variables varies by country, we included an interaction between subjective inequality and effect codes for the different countries. We again included unfairness beliefs, political orientation, and SES as covariates, and we added age because the mean age varied by country (see Table 3).

For status anxiety, there was a main effect of subjective inequality across all six countries. The strength of the relationship was significantly weaker in South Africa compared with the overall effect across all countries. For subjective well-being, there was a main effect of subjective inequality across all six countries. However, more subjective inequality was associated with significantly less well-being in the United States and with marginally less well-being in Canada, compared with the overall effect. Furthermore, subjective inequality was associated with significantly more well-being in England and with marginally more well-being in Japan, compared with the overall effect.

We again assessed whether subjective inequality was correlated with the Gini (both at the individual and country level); we present the mean scores below in Table 4. The correlation between subjective inequality and the country-level Gini coefficient when using all individual data points separately was $r(684) = .17$, $p < .001$. When calculating the correlation from the mean level of subjective inequality per country, it was $r(4) = .66$, $p = .15$ (see Table S7 in the SOM for the zero-order correlations between the Gini and the different psychological constructs). However, this latter correlation is based on only six countries and is compromised by scalar variance, so firm conclusions about the magnitude of the correlations with national means cannot be drawn.

Discussion

We found that the positive relationship between subjective inequality and status anxiety occurred in all six countries. On the other hand, the negative relationship between subjective inequality and well-being occurred in the United States and Canada but not in the other countries. Perhaps these different results in these countries are not so surprising when considering that the association between *objective* inequality and well-being also does not reliably occur (e.g., Berg & Veenhoven, 2010). This cultural variation shows that relations with subjective inequality are not unequivocally the same across all cultures and point to the importance of cross-cultural research. We again found that subjective inequality converged with the Gini coefficient. The correlations between subjective inequality and the Gini across different countries are larger than the ones across the U.S. states presumably because there is greater variability in economic inequality across the different countries than there is across the U.S. states.

General Discussion

Despite the growing interest in the psychological effects of economic inequality, little is known about whether the subjective experience of inequality is associated with the same social and health problems as objective inequality. In this article, we argued that economic inequality consists of two constructs: objective and subjective inequality. Unlike objective inequality, subjective inequality exists at the individual level, which means that it is a construct that is well suited for investigations of its underlying psychology.

We tested whether subjective inequality predicts some of the same psychological outcomes as have been found with objective inequality. To do so, we created and validated the SIS that captures people's global experience of economic inequality and their general unfairness beliefs about inequality. In an American sample, people who perceived more inequality

Table 3. Regression Predicting Status Anxiety and Subjective Well-Being From Subjective Inequality and Different Covariates.

	Status Anxiety Model 1			Status Anxiety Model 2			Subjective Well-Being Model 1			Subjective Well-Being Model 2		
Predictors	Estimates	CI	*p*	Estimates	CI	*p*	Estimates	CI	*p*	Estimates	CI	*p*
(Intercept)	3.04	[2.97, 3.12]	**<.001**		[2.97, 3.12]	**<.001**	6.39	[6.25, 6.54]	**<.001**	6.39	[6.25, 6.54]	**<.001**
Subjective inequality	0.30	[0.22, 0.39]	**<.001**	0.30	[0.22, 0.39]	**<.001**	−0.24	[−0.41, −0.07]	**.006**	−0.24	[−0.41, −0.07]	**.006**
Unfairness beliefs	0.11	[0.03, 0.19]	**.010**	0.11	[0.03, 0.19]	**.010**	0.14	[−0.03, 0.31]	.098	0.14	[−0.03, 0.31]	.098
Subjective SES	−0.24	[−0.32, −0.17]	**<.001**	−0.24	[−0.32, −0.17]	**<.001**	0.94	[0.80, 1.09]	**<.001**	0.94	[0.80, 1.09]	**<.001**
Age	−0.20	[−0.28, −0.12]	**<.001**	−0.20	[−0.28, −0.12]	**<.001**	0.28	[0.12, 0.44]	**.001**	0.28	[0.12, 0.44]	**.001**
Conservatism	0.06	[−0.01, 0.14]	.101	0.06	[−0.01, 0.14]	.101	0.07	[−0.08, 0.22]	.363	0.07	[−0.08, 0.22]	.363
Canada	0.05	[−0.11, 0.21]	.542				−0.06	[−0.38, 0.27]	.734			
England	−0.09	[−0.25, 0.07]	.249	−0.09	[−0.25, 0.07]	.249	0.51	[0.19, 0.83]	**.002**	0.51	[0.19, 0.83]	**.002**
Sweden	−0.05	[−0.24, 0.13]	.588	−0.05	[−0.24, 0.13]	.588	−0.31	[−0.68, 0.06]	.097	−0.31	[−0.68, 0.06]	.097
Japan	0.07	[−0.09 t0.23]	.375	0.07	[−0.09, 0.23	.375	−0.38	[−0.70, −0.05]	**.023**	−0.38	[−0.70, −0.05]	**.023**
South Africa	0.03	[−0.14, 0.20]	.732	0.03	[−0.14, 0.20]	.732	−0.19	[−0.53, 0.15]	.276	−0.19	[−0.53, 0.15]	.276
United States				−0.01	[−0.18, 0.16]	.921				0.42	[0.08, 0.77]	**.015**
Subjective Inequality × Canada	0.09	[−0.07, 0.26]	.273				−0.29	[−0.63, 0.05]	.090			
Subjective Inequality × England	−0.01	[−0.16, 0.15]	.947	−0.01	[−0.16, 0.15]	.947	0.34	[0.03, 0.66]	**.035**	0.34	[0.03, 0.66]	**.035**
Subjective Inequality × Sweden	−0.03	[−0.22, 0.17]	.786	−0.03	[−0.22, 0.17]	.786	0.12	[−0.26, 0.50]	.543	0.12	[−0.26, 0.50]	.543
Subjective Inequality × Japan	0.09	[−0.06, 0.24]	.233	0.09	[−0.06, 0.24]	.233	0.28	[−0.02, 0.57]	.068	0.28	[−0.02, 0.57]	.068
Subjective Inequality × South Africa	−0.19	[−0.36, −0.02]	**.030**	−0.19	−0.36, −0.02]	**.030**	0.01	[−0.33, 0.34]	.976	0.01	[−0.33, 0.34]	.976
Subjective Inequality × United States				0.03	[−0.13, 0.19]	.679				−0.45	[−0.77, −0.13]	**.006**
Observations		671			671			671			671	
R^2/adjusted R^2		.250/.233			.250/.233			.305/.290			.305/.290	

Note. Conservatism: Higher scores indicate more conservative political orientation. Model 1: Effect codes for different countries with the United States as reference group; Model 2: effect codes for different countries with Canada as reference group; the intercept represents the unweighted grand mean, the betas for the different countries represent the mean difference in subjective well-being/status anxiety from the grand mean, and the interaction terms represent the difference in the slope for subjective inequality for each of the countries from the slope across all countries. Subjective inequality, unfairness beliefs, SES, age, and conservatism are standardized. p-values below .05 are bolded.

Table 4. Subjective Inequality, Unfairness Beliefs, and Gini Coefficients by Country.

Country	Gini	Subjective Inequality	Unfairness Beliefs
United States	.391	3.61	4.38
Canada	.307	3.92	4.99
England	.351	4.24	5.18
Sweden	.282	3.27	5.18
South Africa	.620	4.45	5.34
Japan	.339	4.04	5.03

reported less well-being, more depression, anxiety, stress, status anxiety, and less trust, replicating much past research that has used objective inequality (e.g., Delhey & Dragolov, 2014; Fan et al., 2011; Wilkinson & Pickett, 2010). We further tested whether we could replicate the findings of status anxiety and well-being across six countries. While subjective inequality was associated with more status anxiety in all countries, the relationship with well-being was more mixed. The negative association between subjective inequality and well-being only occurred in the United States and in Canada, but not in England, Sweden, Japan, and South Africa. These results suggest that culture may influence the psychological response to subjective inequality. Some research on the relationship between objective inequality and well-being has also found mixed results (e.g., Berg & Veenhoven, 2010). These inconsistent results could potentially be explained by the influence of cultural factors. Subjective inequality provides a means through which the moderating force of culture on the effects of inequality can be better understood.

Inequality is often conflated with unfairness beliefs (Starmans et al., 2017), and in both studies, subjective inequality was positively associated with the judgment of inequality as being generally unfair (rs = .58, .47, respectively). However, the relationship between subjective inequality and the various psychological variables held after controlling for the unfairness beliefs about inequality. This suggests that subjective inequality may have unique psychological effects over and above unfairness beliefs. However, our investigations were limited to predicting well-being and status anxiety, and it remains an open question whether unfairness beliefs matter for the relationship between subjective inequality and other psychological constructs.

Across both the United States and international sample, we found small correlations between subjective inequality and the Gini. These correlations suggest that subjective inequality could, at least in part, be influenced by the actual distribution of resources. However, they also suggest that these perceptions are largely independent of the objective level of inequality in one's state or country. This then raises the question of where do perceptions of inequality come from?

A beginning of an answer to this question comes from other correlates of subjective inequality. People who perceived more inequality tended to be of lower income and SES and were more liberal and less religious. This raises the question of whether these individual differences lead people to construe the world they live in differently or whether they literally live in different worlds. For example, people of lower income may live in poorer neighborhoods, have longer commutes, and have different jobs. However, it could also be that people of lower SES are motivated to perceive more inequality than their higher SES counterparts. There is still much that we do not know about what underlies subjective inequality, and the topic is ripe for future research.

We have focused on the broadest level of economic inequality (encompassing income and wealth inequality and inequality of opportunity), and we assessed subjective inequality in people's state and country of residence. Future research may benefit from distinguishing between these different facets of economic inequality to assess whether they independently relate to different outcomes. Furthermore, although we replicate the main effects at both the state and country level (for some countries), it would be useful to explore whether the geographic area that subjective inequality captures affects the relationship with different psychological constructs.

While we targeted theoretically fundamental correlates of objective inequality, future research should widen the scope to investigate other variables that have been associated with objective inequality such as health outcomes, obesity, and violent behavior (e.g., Wilkinson & Pickett, 2010). In addition, it would be useful to test which relationships hold across different cultures and which are specific to certain cultures. A key limitation of our findings is that they do not allow us to confidently speak about causality. While it is implausible that higher levels of depression, for example, lead to an increase in the Gini coefficient, it is certainly possible that higher levels of self-reported depression cause people to perceive more inequality because their outlook on the world is bleaker. Here is an example where objective and subjective components need to be considered in tandem in order to draw firmer conclusions.

Our studies are limited in their reliance on online samples which have various idiosyncratic characteristics (e.g., Arditte et al., 2016), and we cannot confidently generalize to other kinds of samples. It will be informative to see how subjective inequality relates to various psychological variables in other kinds of populations. While our results point to the moderating effects of culture, these data cannot speak to what cultural factors are driving these effects. Cultural differences in upward and downward comparisons, what counts as status, and the possibility of social mobility are a few examples of cultural variables that may moderate the effects of subjective inequality. The modest correlations between subjective inequality and the Gini indicate that our measure is tapping into something largely distinct from objective inequality; it is possible that other conceptualizations of subjective inequality may relate differently to objective inequality. With these limitations in mind, this article has attempted to begin a new line of research that focuses on the subjective component of economic inequality.

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Supplemental Material

The supplemental material is available in the online version of the article.

Notes

1. Note that participants from Japan and Sweden were not given an attention check question.
2. Note that we included a few more demographic variables that are not reported here.

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