Check for updates

Testing the status-legitimacy hypothesis: Predicting system justification using objective and subjective socioeconomic status in China and the United States

Evan A. Valdes*, (iD) James H. Liu, (iD) and Matt Williams
Massey University, Palmerston North, New Zealand

The status-legitimacy hypothesis proposes that those who are most disadvantaged by unequal social systems are even more likely than members of more advantaged groups to provide ideological support for the very social system that is responsible for their disadvantages. Li, Yang, Wu, and Kou (2020, *Personality and Social Psychology Bulletin*) sought to expand the generalizability of this hypothesis by testing it in China, addressing inconsistencies surrounding the empirical support for this hypothesis by postulating that the construct of status should be separated into an objective and subjective status marker. They reported that objective socioeconomic status (SES; income and education) negatively predicted system justification, while subjective SES positively predicted system justification. In the present study we attempt to replicate and extend the work of Li et al. in a cross-cultural comparison of demographic stratified quota online samples in China and the United States. We test the status-legitimacy hypothesis using objective and subjective SES to predict system justification using cross-sectional and cross-lagged regression analyses. We received partial support for Li et al.'s findings. Specifically, subjective SES positively predicted system justification for both societies during cross-sectional and cross-lagged longitudinal analyses. However, we failed to replicate Li et al.'s findings surrounding objective SES in China during cross-sectional and cross-lagged analyses.

Keywords: cross-cultural psychology, liberal choice producing dissonance model, self-interest acquiescence model, social psychology, status-legitimacy hypothesis, system justification.

System justification

System justification theory (SJT) proposes that individuals are motivated to see the systems that they live in as legitimate, fair, and just (Jost & Banaji, 1994). This is in part because of their dependence on these systems (Kay et al., 2009; van der Toorn et al., 2010; Jost, 2020) to fulfil various needs—from abstract needs such as providing order and structure in their world, to simple needs like providing a welfare check to pay one's rent (Valdes, 2022). According to SJT, the degree to which a person is dependent on a given social system inadvertently induces system-justifying motives. Both high- and low-status individuals justify the status quo for systems they depend on—but for different reasons.

High-status individuals depend on the system and the status quo to maintain their high-status position; accepting the social system as legitimate coincides with ego and group justification motives (Li, Wu, & Kou, 2020). Low-

status individuals rely on the system for specific system-based survival benefits (like affordable health care or unemployment insurance). If they regard the social system as fair, then they should blame themselves and/or their ingroup for their disadvantaged situation; if they consider themselves and their ingroup as worthy, then they ought to believe there is an illegitimate system that causes their disadvantageous situation (Jost et al., 2001). Low-status individuals' ability to accede to the system goes against motives for self-enhancement and ingroup favouritism. Such a dilemma between the self, the ingroup, and system justification motives induces low-status individuals to experience psychological conflict.

To resolve these conflicts, low-status individuals may hold even greater beliefs that the social system is fair when compared to individuals with high status (Jost et al., 2003). According to Jost et al. (2003), those who are most disadvantaged by unequal social systems are even more likely than members of higher advantaged groups to provide ideological support for the same social system that is responsible for their disadvantages under certain circumstances. They further postulated that societies that have high levels of inequality, value meritocracy, and possess a democratic social and political system with high civil liberties would make low-status individuals feel more responsible for their disadvantaged positions (Jost et al., 2003); Brandt (2013)

Correspondence: Evan A. Valdes, School of Psychology, Massey University, Auckland, New Zealand. E-mail: valdespsychology@gmail.com

termed this the *status-legitimacy hypothesis* (see also Jost, 2011, 2019, 2020, for criticisms and exceptions to the status-legitimacy hypothesis), that low-status individuals are more likely to system justify when compared to high-status individuals.

These claims made by the status-legitimacy hypothesis differentiate SJT from related competing theories like social dominance theory (SDT; Sidanius & Pratto, 2001) and social identity theory (SIT; Tajfel & Turner, 1979). SDT and SIT propose that (low-status) individuals/groups would not justify a system that places them at a disadvantage to higher-status individuals/groups (Brandt, 2013; Jost, 2011). Historically, the status-legitimacy hypothesis has simply referred to an empirical correlation between system justification and status; however, it has proven to be controversial due to mixed empirical support (see Buchel et al., 2020; Vargas-Salfate et al., 2018). Several researchers have demonstrated that low socioeconomic status (SES) individuals are more likely to justify the status quo as fair and legitimate than high SES individuals (Henry & Saul, 2006; Jost et al., 2003; Kim et al., 2022; Sengupta et al., 2015; Whyte & Maocan, 2010; Zhang et al., 2022). Other work has challenged the validity of the status-legitimacy hypothesis by revealing a positive or no relationship between SES and system justification (Brandt, 2013; Brandt et al., 2020; Caricati, 2017; Davidai, 2018).

Similarly to Li, Wu, and Kou (2020) and Li, Yang, et al. (2020), we believe that the mixed empirical support vis-à-vis the status-legitimacy hypothesis is due to a lack of differentiation between a subjective (perceived social status) and objective (income and education) SES. By separating them, we can refine our understanding of how different types of SES relate to system justification and the status-legitimacy hypothesis. The most salient finding contradicting the status-legitimacy hypothesis is that higher subjective SES is consistently associated with greater system justification (Brandt, 2013; Brandt et al., 2020; Davidai, 2018; Vargas-Salfate et al., 2018; Yang & Guo, 2016; Zimmerman & Reyna, 2013). Such consistent findings surrounding subjective SES suggest that its positive relationship to system justification is due to the psychological processes of self/ingroup interest and social comparison that can be generalized cross-culturally (i.e., self-interest hypothesis). Perhaps the exercise of placing oneself on a subjective status hierarchy highlights awareness of social comparisons with others. This activates an individual's status-maintenance motivation, leading to justification of the status quo if it serves one's own interests or group interests, which is exactly what SDT predicts (Sidanius & Pratto, 2001) and what is found relatively consistently when the relationship between subjective SES and system justification is examined (see also Owuamalam et al., 2018).

When it comes to the presence of status-legitimacy effects (i.e., the negative relationship between SES and system justification) in previous research (Brandt, 2013; Henry & Saul, 2006; Jost et al., 2003; Jost, 2019, 2020; Li, Wu, & Kou, 2020; Li, Yang, et al., 2020; Sengupta et al., 2015; Whyte & Maocan, 2010), it has almost exclusively been observed within democratic societies when an objective measure of SES was used. This is in part because objective SES has consistently led to more variability when investigating status-legitimacy effects, especially during cross-cultural research. For instance, Brandt (2013) and Vargas-Salfate et al. (2018), who both conducted large cross-cultural tests of the status-legitimacy hypothesis, had access to participants' subjective and objective SES—but it was only objective SES that provided slight, qualified support for the status-legitimacy hypothesis. Furthermore, both these research programs found contextual social factors such as inequality and civil liberties as explanations for these findings cross-culturally (Brandt, 2013; Vargas-Salfate et al., 2018).

The status-legitimacy hypothesis, or what we will call the *liberal choice producing dissonance model (LCDM)*, theorizes that three specific characteristics of a social system predispose a low objective SES individual to system justify more than a high objective SES individual due to psychological conflict (Jost et al., 2003). The first characteristic is the presence of civil liberty; nations that provide their citizens with greater freedom to voice their (dis) agreement with its current societal structure may inadvertently be putting individuals on the lower end of the status hierarchy in a conundrum (Brandt, 2013). In this case, low-status individuals face an uncomfortable choice of whether to protest (or struggle) against the system—or to accept it and be complicit in their own oppression. The second characteristic Jost et al. (2003) theorizes as enhancing a state of conflict between self/group interests and system justification is the level of inequality in a given society (Brandt, 2013; Jost et al., 2003). Brandt et al. (2020) postulated that inequality creates a reality for low-status individuals that their place in society is not within their control. In order to combat this reality for those of low-status, Jost (2020, p. 141) claims that "when people feel extremely dependent on a given social system – and therefore experience their world as unpredictable and uncontrollable – they should be more strongly motivated to defend and justify it." The third societal characteristic is the belief in meritocracy, a type of culture that provides an easily accessible system-justifying motive for why a group is low-status and hope that the individual may rise through their meritocratic efforts above low group status (Jost et al., 2003).

Contrary to this model, SDT (Sidanius & Pratto, 2001) and SIT (Owuamalam et al., 2018) argue that societal characteristics of meritocracy, high civil liberty, and individualism first proposed by Jost et al. (2003) and tested by

Brandt ([2013](#)) are insufficient to provide enough motive to system justify for objectively low-status Americans, because this would go against their objective self-interests. At the root of this counter-claim lies the facade of meritocracy in the USA—a belief that ignores the objective reality that economic success and future wealth in the USA can be attributed to familial status (Chetty et al., [2018](#)). In an unequal society like the USA, which has had relatively little economic growth compared to China in recent decades,[1] believing in meritocracy shrouds the reality that the top 1% has accrued far more wealth than the bottom 90% in recent decades.[2] According to Newman et al. ([2015](#)), the awareness of such social inequalities in the USA has led low objective SES individuals to reject the ideology of meritocracy; hence, these low-status Americans see less legitimacy in the status quo.

Furthermore, while status-legitimacy effects have been found in China (Li, Wu, & Kou, [2020](#); Li, Yang, et al., [2020](#); Whyte & Maocan, [2010](#)), we do not believe they result from the macro-level societal characteristics theorized by the LCDM. China has fewer civil liberties, does not subscribe to a capitalist discourse on meritocracy, and is authoritarian, socialistic, and collectivistic (Hofstede Insights, [2021](#); Li & Hu, [2021](#); Walder, [1996](#); World Bank, [2019](#); Wu & Li, [2017](#); Zhou & Xie, [2016](#)).[3] In order to address this shortcoming, we propose a novel socio-contextual macro-level model that explains the relationship between objective SES and system justification in authoritarian countries, which we will call the *self-interest acquiescence model* (SIAM). An alternative perspective to understanding status-legitimacy effects, the SIAM postulates that (low objective SES) individuals will submit to/accept a powerful system that has a history of benefitting its citizens and has no apparent cognitive alternatives (Tajfel & Turner, [1979](#)).

Zhou and Xie ([2016](#)) found that for low-status individuals in China, the two most important factors that affected citizens' personal and economic well-being were the central and local government—in other words, "the system." In a rising economy like China (where there was 10% per annum growth from 1979 to 2018[4]), there are objectively more opportunities to improve one's socioeconomic status, so there should also be more ego-based reasons for a person with objectively lower status to system-justify over time (Liu et al., [2010](#)). China also possesses an authoritarian government that has tight controls over the state bureaucracy, mass media, online speech, businesses, universities, and civil society associations that attempt to undermine its authority (Hyun & Kim, [2015](#)). This has led to some discontent among Chinese elites within and outside the Chinese Communist Party (Kennedy, [2009](#); Li, Wu, & Kou, [2020](#); Li, Yang, et al., [2020](#)). Lower status people, with less access and experiences of conditions outside China, may see fewer cognitive alternatives to the current

system. For those in China without social and financial capital, it is within their self-interest to system justify. As an example, the Chinese government delivered on its promises to lift people out of poverty (765 million people, or three-fourths of all human beings lifted out of extreme poverty in the last 4 decades, see Ana Lugo et al., [2022](#)) and made further poverty alleviation a centrepiece of their latest 5 year plan. The motivation for low-status Chinese to system justify could be regarded as an economically rational decision: to acquiesce and submit to a higher power that aligns with personal/group interests—what we term the SIAM. Conversely, in a mature economy like the USA (where 1–2% growth is typical), there would be fewer ego-based benefits for an objectively low-status person to system justify (Van Ark et al., [2008](#)), so status-legitimizing for low objective status persons depends on the societal characteristics that are most likely to produce dissonance as postulated by the status-legitimacy hypothesis (Brandt, [2013](#))—what we term the LCDM.

Empirical study to be replicated

Since empirical evidence on the status-legitimacy hypothesis has been inconsistent, an important recent study from a group led by Li (reported in Li, Wu, & Kou, [2020](#), and Li, Yang, et al., [2020](#)) theorized that a reason for the inconsistencies surrounding the relationship between SES and system justification is that the construct of SES has been simplified in many of the previous studies. Li and colleagues postulated that researchers should separate an individual's status into an objective and subjective experience. They theorized that objective and subjective SES may relate to system justification differently; they highlighted that educational level, income, and vocational stature are all potential measures of objective SES (Kraus et al., [2009](#)) and also that subjective SES is measured by an individual's self-perceived status when compared to others (Anderson et al., [2012](#)). For example, a person who makes the equivalent of $25,000 US annually and has only completed a few college courses may be on the lower end of the objective SES spectrum in the USA; however, they may perceive their subjective SES to be higher if their social circle is filled with people who have lesser prospects than themselves. Li's group performed a total of five studies using both adult and adolescent Chinese samples to explore how objective and subjective SES relate to system justification differently. Our focus here is on Studies 1a and 1b that used correlational and regression analysis to test the divergent effects of objective and subjective SES on system justification.

Li, Wu, and Kou ([2020](#)), and Li, Yang, et al. ([2020](#)) used nationally representative data from the 2012 and 2013 Chinese General Social Survey[5] of 10,585

participants in Study 1a and 10,189 participants in Study 1b. They examined how objective and subjective SES are separately related to system justification in China. Objective SES was operationalized as the responses to questions surrounding ones' educational level (1 = *lower than elementary school* to 7 = *master's degree or higher*) and total income in the previous year (in Chinese Yuan, CN¥1 = US$0.15 when the survey was conducted). Subjective SES was measured using the MacArthur Scale of subjective SES (Adler et al., 2000). Participants were shown a visual of a 10-rung ladder representing social status and were asked to indicate their position on the ladder (1 = *the lowest*, 10 = *the highest*). Lastly, system justification was assessed using one item ("Generally speaking, do you think Chinese society is fair?") on a 5-point scale (1 = *completely unfair* to 5 = *completely fair*).

Li, Wu, and Kou (2020) and Li, Yang, et al. (2020) found in correlational analyses for both studies (1a and 1b) that system justification was negatively correlated with participants' education level and income, while being positively correlated with subjective SES. They then ran multiple linear regressions on system justification with participants' educational attainment, income, and subjective SES as predictors, while controlling for gender and age. They found during these analyses that educational attainment and income negatively predicted system justification, while subjective SES positively predicted system justification (Study 1a: R^2 = .06, p < .001, and Study 1b: R^2 = .05, p < .001).

While they did not explicitly refer to it as such, these results are in accord with our proposed SIAM. Furthermore, their study has provided a novel approach to testing the status-legitimacy hypothesis; many researchers (Brandt et al., 2020; Jost, 2020) have sought to explore the complexities of system justification—but not using these different SES markers in China or the USA. Though the authors' findings surrounding subjective SES are consistent with many previous studies, it is the relationship between objective SES and system justification that needs further verification. Because of the empirical inconsistencies associated with the status-legitimacy hypothesis, we look to replicate and extend the results of Li's group by retesting their hypotheses using longitudinal data from both China and the USA. We can further test different macro-level explanations for why the status-legitimacy hypothesis does or does not occur for objective SES in the USA (using the LCDM) and China (using the SIAM).

Present study

In this study, we aimed to conceptually replicate the cross-sectional findings of Studies 1 and 2 reported by

Li's group in Li, Wu, and Kou (2020) and Li, Yang, et al. (2020). We further aimed to extended their work by conducting a longitudinal analysis of the divergent effects of objective and subjective SES on system justification over time. Data were similarly collected online, but we had access to two longitudinal samples from China and the USA. Our reasoning behind analysing data from China was to replicate the findings of Li's group surrounding objective and subjective SES in relation to system justification with a demographically representative stratified quota sample. Analysing data collected from the USA allowed us to test whether their finding that the positive relationship between subjective SES and system justification is generalizable cross-culturally, while simultaneously testing whether objective SES holds a different relationship with system justification in these countries.

In contrast to the cross-sectional approach used by Li's group, we decided to use longitudinal data to establish a richer perspective on how objective and subjective SES relate to system justification and the status-legitimacy hypothesis over time. The literature on system justification and the divergent effects of subjective and objective SES have implied the effect of SES on system justification is causal, but this perspective lacks longitudinal exploration and therefore has relied heavily on cross-sectional correlational studies. Blasi and Jost (2006) theorize that system justification motives are constantly competing against other self/group motives that can take precedence—indicating possible changes over time—making cross-sectional studies insufficient. They should be augmented by longitudinal analysis.

The status-legitimacy hypothesis (Brandt, 2013) claims that there is a causal effect of SES on system justification. However, correlational studies provide only tentative evidence of such causal effects (Maxwell, et al., 2011). Longitudinal studies on the other hand can provide more reliable evidence of causal effects between objective and subjective status and system justification by allowing us to measure system justification at two distinct points in time. We can observe whether objective or subjective SES predict system justification cross-sectionally during Wave 1.

During Wave 2 analyses, we can control for Wave 1 system justification scores, allowing us to invoke a chronological precedence between our status variables and Wave 2 system justification scores. This process would also help rule out other stable individual difference variables as confounds since their effects would be absorbed during Wave 1 and eliminated when controlling for system justification at Wave 1 during longitudinal analysis. We opted for the use of a 6-month time interval between Waves 1 and 2, because research on memory for life events (see Jenkins et al., 1979; Monroe, 1982) reports

that a 4 to 6 month interval is the longest time period over which individuals can accurately recall life events. The literature on system justifying effects has yet to uncover over what time period an individual may shift ideological allegiances, but logically, it would be safe to assume that a 2-wave study should encompass the longest time period over which individuals can accurately remember life events that might be responsible for their allegiance shifts. Secondly, longitudinal designs implicitly rely on the presence of variance over time for effects to be detectable, and using a relatively long time period increases the chances of such variance being observed.

Aims and hypotheses

In this study, we aim to conceptually replicate the findings by Li's group (Li, Wu, & Kou, 2020, and Li, Yang, et al., 2020) for Studies 1a and 1b cross-sectionally and extend their work by using longitudinal data to compare how objective and subjective SES predict levels of system justification differently among American citizens versus Chinese citizens. Comparing two nations that are fundamentally different socially, economically, and politically is a critical extension of both the system justification literature and the status-legitimacy hypothesis. Given the presented theoretical and empirical antecedents in this paper, and in accord with the SIAM, we hypothesize that in the sample from China, greater levels of education and income (higher objective SES) will negatively predict system justification. Within the sample of participants from the USA, we test the status-legitimacy hypothesis and its LCDM, noting a high degree of controversy around its predictions and hypothesize that greater levels of education and income (higher objective SES) will positively predict system justification. However, we anticipate that a positive relationship between subjective SES and system justification will be generalizable across the two cultures, because we believe the psychological process of attending to self-interests through social comparisons will generalize cross-culturally (see Brandt et al., 2020; Davidai, 2018; Li, Wu, & Kou, 2020; Li, Yang, et al., 2020; Vargas-Salfate et al., 2018), These hypotheses are tested cross-sectionally and longitudinally.

Method

Participants and procedures

An a priori power analysis was conducted using the pwr package in r statistical software which revealed a required sample of 640 participants from both countries to have adequate power $(1 - \beta = .80)$ to detect a small effect of $f^2 = .02$ for our regression analyses during both waves (Champely et al., 2018). Participants were recruited through online samples curated by Nielsen, an international polling firm tasked with stratifying samples according to age, gender, and region, from September 2015 to March 2016. Wave 1 was a stratified quota sample in both the USA and China that was designed to be demographically representative in regards to age, gender, and region and was collected in September 2015 as part of a large 19 nation international project (for details, Gil de Zúñiga & Liu, 2017).[6] The same participants were invited to Wave 2 6 months later. We reanalysed Chinese and American participant data presented by Vargas-Salfate et al. (2018), albeit with missing data multiply imputed. In contrast to Vargas-Salfate et al.'s analysis of China and the USA as part of a larger multi-country study, in the present study these two nations were selected for theoretical purposes following Li, Wu, and Kou (2020) and Li, Yang, et al. (2020). Furthermore, whereas Vargas-Salfate et al. (2018) controlled for objective SES (income) and explored the role subjective SES played in relation to social dominance and system justification, we directly test status-legitimacy effects using both objective (education and income) and subjective SES. The final samples for China and the USA were 1,004 (M_{age} = 38.7 years, SD = 12; 55.2% female, M_{region} = 0.91, SD = 0.29) and 1,161 participants (M_{age} = 49.7 years, SD = 16.4; 58.9% male, M_{region} = 0.37, SD = 0.48), respectively, during Waves 1 and 2. We compared our samples to available census data in each country, regarding profiles for the average age, gender, and living region (urban vs. rural) for the adult population in China (38.4 years, 51% male, 64% urban) and in the USA (38.5 years, 52% female, 80% urban). Our sample in China falls within this average range for age and region but has slightly more female representation. Our sample from the USA's living region falls within the average range, however our sample's average age is 11 years above the national average, with slightly more male representation.

Missing data analysis

The combined percentages of missing values across the ten variables of interest within the analyses for both Waves 1 and 2 varied from 0 to 59%. During Waves 1 and 2 a total of 999 and 1,290 out of 2,165 total cases were considered incomplete, respectively. Education (46%), Wave 2 system justification scores (59%), and income (8%) were the only variables with data missing at greater than .8 percent. The percentage of total missing data for all variables during both waves was 11%, which is quite normal for longitudinal designs (Wang et al., 2017). Since many participants during data collection failed to report their education level or failed to re-enter the study during the second wave of data collection (i.e.,

attrition rate = 59%), we used multiple imputation to create and analyse 40 multiple imputed datasets. Methodologists currently regard multiple imputation as a state-of-the-art technique because it improves accuracy and statistical power relative to other missing data techniques (Manly & Wells, 2015). Incomplete variables were multiply imputed under fully conditional specification, using the linear regression with bootstrap method of the mice 3.13 package (van Buuren & Groothuis-Oudshoorn, 2011). Results for both cross-sectional and longitudinal analyses were then pooled across the multiply imputed datasets. The same design and materials were used for measuring objective and subjective SES. However, the entire brief version of the system justification scale was administered as opposed to the decision by Li's group to only use the first item.

Ethics consent

The present study was approved by the Human Ethics Committee at Massey University (Protocol MUHECN 15/053) and was conducted with informed consent from all participants.

Instruments

System justification scale. A brief version of the System Justification Scale (Kay & Jost, 2003) was used. This included the four items of "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," where each country name was inserted into the parentheses. Responses were given on a range of 1 (*Disagree completely*) to 7 (*Agree completely*). A mean system justification score was calculated for each participant by collapsing across the four items, which formed a highly reliable scale (α = .85) that ranged from 1 (*low system justification*) to 7 (*high system justification*). We chose this over the single item measure used by Li's group, because we believed these four items more holistically captured system justifying beliefs.

Objective and subjective SES. Similarly to Li, Wu, and Kou (2020) and Li, Yang, et al. (2020), subjective SES was assessed with the following: "On a scale of 1 to 10, with 10 being people who are the most well off in society, and 1 being the people who are the least well off, where would you describe your position?" Objective SES was assessed with the following two questions: "What is the highest level of education you have completed?" where responses ranged from 1 (*Elementary school*) to 6 (*Graduate school or higher*), and "Last year, what was your

family's total household income, before taxes?" We then transformed household income into percentile ranks from 0 to 100% to address severe univariate outliers (e.g., incomes over a million, Skewness = −.01, kurtosis = −.1.2).

Control variables. Similarly to Li, Wu, and Kou (2020) and Li, Yang, et al. (2020), we controlled for the effects of age and gender (1 = *male*, 0 = *female*) in order to isolate the associations between objective and subjective SES and system justification.

Results

Measurement invariance

For this study, a series of multigroup imputed confirmatory factor analyses were used to detect measurement invariance across 40 multiply imputed datasets for three factors that make up the measurement model: system justification, objective, and subjective SES. The first was the configural model, where we simply fit a three-factor model in both groups, without constraining parameters to equality across countries. This model displayed equivocal fit, with a comparative fit index (CFI) of .96 (above the .95 cut-off for good-fit in Hu & Bentler, 1999), a standardized root mean residual (SRMR) of .03 (well below Hu and Bentler's .08 cut-off), a root mean square error of approximation (RMSEA) of .07 (just above Hu and Bentler's cut-off of .06), and a significant chi-square, $\chi^2(24) = 162.87$, $p < .001$. This indicated that a three-factor model fit reasonably well (but not perfectly) across both groups. We then tested a metric invariance model where factor loadings were constrained to equality. This resulted in a small but significant deterioration in absolute fit, $\chi^2_{diff}(4) = 65.91, p < .001$, albeit without deterioration to the approximate fit statistics (CFI = .96; SRMR = .04; RMSEA = .07).

For exploratory purposes, we also tested a strong invariance model where intercepts and measurement error terms were also held to equality across groups. This model displayed a large reduction in fit relative to the metric invariance model, $\chi^2_{diff}(4) = 1,121.48$, $p < .001$. However, strong (or scalar) invariance was not crucial for the current study, given that our substantive analyses do not focus on comparing mean levels of system justification across countries but rather on relationships between system justification and other variables. Overall, these tests of measurement invariance provide some evidence against metric invariance, and therefore raise the possibility that differences in estimated parameters between groups in our substantive analyses might be biased due to this lack of invariance. However, the relatively small difference in fit between the configural invariance and metric invariance models suggests that if such bias exists, it is unlikely to be large.

Descriptive analysis

Descriptive statistics and bivariate correlations are provided in Tables 1 and 2. Correlational analysis for China and the USA revealed that system justification was positively correlated in consistent and significant fashion with participants' subjective SES for both countries across Waves 1 and 2. This coincides with the correlational findings of Li's group for subjective SES in China. However, our findings with respect to objective SES (income and education) contradicted Li's group's correlational findings in China. Education was significantly positively correlated with system justification during both waves, while income was only significantly positively correlated during Wave 2. In the USA, system justification was significantly positively correlated with objective SES (income and education) across Waves 1 and 2, therefore providing no support for the status-legitimacy hypothesis (i.e., LCDM).

Cross-sectional analysis

We then moved to regression analysis, similarly to Li, Wu, and Kou (2020) and Li, Yang, et al. (2020), and opted to first conduct a cross-sectional regression to attempt to more closely replicate their cross-sectional findings before subjecting them to a more severe longitudinal test. Our cross-sectional and cross-lagged multiple regression models do not assume that the independent or dependent variables are normally distributed, just the errors (Williams et al., 2013). We centred our continuous interaction terms (system justification, age, education, and subjective SES during Waves 1 and 2) to make the main effects for these coefficients more interpretable in the presence of interaction terms. In addition, we chose to plot our interactions in accordance with Rosnow and Rosenthal (1989) to observe the marginal (simple) effects of objective and subjective SES by country on system justification (see Figures 1 and 2). While there is no real evidence for many of the interactions across countries in either of our cross-sectional or longitudinal models, these figures provide a tentative and exploratory approach to visualize differences between the countries that should not go unreported.

A cross-sectional multiple linear regression was run to predict system justification using participants' objective and subjective SES, age, and gender as predictors in Wave 1. Interaction terms were included within this model to test the invariance of the scales across cultural contexts. A significant regression equation was seen within this model (see Table 3). In line with our hypothesis and Li's group's findings, this analysis indicated that for both the USA and China, the main effect of subjective SES positively and significantly predicted system

Table 1
Descriptive Statistics and Bivariate Correlations of Key Variables in the China Sample

Variable	Mean	SD	Median	Range	1	2	3	4	5	6
1. System justification	4.23	1.29	4.25	6.00						
2. System justification (Wave 2)	4.20	1.31	4.25	8.51	.76 [.73, .79]**					
3. Subjective SES	5.05	1.77	5.00	9.00	.31 [.25, .36]**	.34 [.28, .39]**				
4. Education	3.38	0.79	3.54	7.81	.11 [.05, .17]**	.15 [.09, .21]**	.10 [.04, .17]**			
5. Household income	59.71	24.85	61.96	92.56	.06 [−.00, .12]	.13 [.06, .19]**	.37 [.32, .43]**	.10 [.04, .17]**		
6. Age	38.69	12.02	37.00	56.00	−.02 [−.08, .04]	−.04 [−.10, .02]	−.07 [−.13, −.01]*	−.01 [−.07, .06]	−.08 [−.14, −.02]*	
7. Gender	0.44	0.50	0.00	1.92	.10 [.04, .16]**	.13 [.07, .19]**	.07 [.01, .13]*	.07 [.01, .14]*	.08 [.01, .14]*	−.16 [−.22, −.10]**

Note. $N = 1,004$. Values in square brackets indicate the 95% confidence interval for each correlation. The confidence interval is a plausible range of population correlations that could have caused the sample correlation (Cumming, 2014). SES = socioeconomic status.
$*p < .05$; $**p < .01$.

Table 2
Descriptive Statistics and Bivariate Correlations of Key Variables in US Sample

Variable	Mean	SD	Median	Range	1	2	3	4	5	6
1. System justification	3.43	1.29	3.50	6.00						
2. System justification (Wave 2)	3.53	1.24	3.50	7.56	.76 [.74, .78]**					
3. Subjective SES	5.46	1.93	6.00	9.00	.30**	.32**				
4. Education	4.22	0.56	4.00	5.14	.10 [.04, .16]**	.11 [.05, .17]**	.25 [.19, .30]**			
5. Household income	41.65	29.48	35.57	99.63	.08 [.02, .14]**	.13 [.07, .18]**	.31 [.26, .36]**	.17 [.11, .22]**		
6. Age	49.84	16.43	51.00	71.00	.09 [.03, .14]**	.08 [.03, .14]**	.01 [−.05, .07]	.07 [.01, .12]*	−.07 [−.13, −.01]*	
7. Gender	0.60	0.49	1.00	2.56	−.13 [−.19, −.07]**	−.05 [−.10, .01]	−.13 [−.19, −.07]**	−.13 [−.18, −.07]**	−.03 [−.09, .02]	−.16 [−.22, −.11]**

Note. N = 1,161. Values in square brackets indicate the 95% confidence interval for each correlation. The confidence interval is a plausible range of population correlations that could have caused the sample correlation (Cumming, 2014). SES = socioeconomic status.
*p < .05; **p < .01.

justification while not being moderated by country. Further support was seen when we plotted the marginal effects of subjective SES by country on system justification (see Figure 1). For China, income negatively and significantly predicted system justification, while education was seen to have a nonsignificant positive relationship with system justification (see Table 3 and Figure 1). On the other hand, in the USA, both education and income (objective SES) were found to have inconsistent nonsignificant relationships with system justification (see Table 3 and Figure 1). While we found partial support for both the findings of Li's group and our SIAM hypotheses surrounding objective SES (income only) in China, the findings for objective SES in the USA do not support the status-legitimacy hypothesis (i.e., LCDM).

Longitudinal analysis

For the Wave 2 analyses, we opted for a cross-lagged multiple regression analysis to predict system justification (Wave 2) using participants' objective and subjective SES, age, and gender as predictors in Wave 2. Each of the predictors during these analyses were from Wave 1 to help establish temporal precedence of cause before effect. We further controlled for participants' system justification scores during Wave 1. Once again, interaction terms were included within the model to test for equivalence of the scales across cultural contexts. A significant regression equation was seen within this model (see Table 3). This cross-lagged analysis supported both Li's group's and our previous cross-sectional findings for China and the USA: Subjective SES was a positively significant predictor of system justification over time (see Figure 2 for marginal effects).

For objective SES, education and income as predictors were seen to have nonsignificant cross-lagged relationships with system justification in both societies (see Table 3). We plotted the interaction (marginal) effects of objective SES (education and income) between the two societies on system justification. For China, we found that education but not income positively predicted system justification (see Figure 2). These results go against the findings of Li's group and what we hypothesized about the SIAM for objective SES in China. For the USA, we found that income but not education positively predicted system justification. That said, the interactions between country and objective SES (education and income) were not significant. This means that there is no strong evidence of differences in the effects of education and income across the two countries.

To check whether our nonsignificant results were due to a lack of statistical power after multiple imputation, we conducted a sensitivity power analyses using the pwr

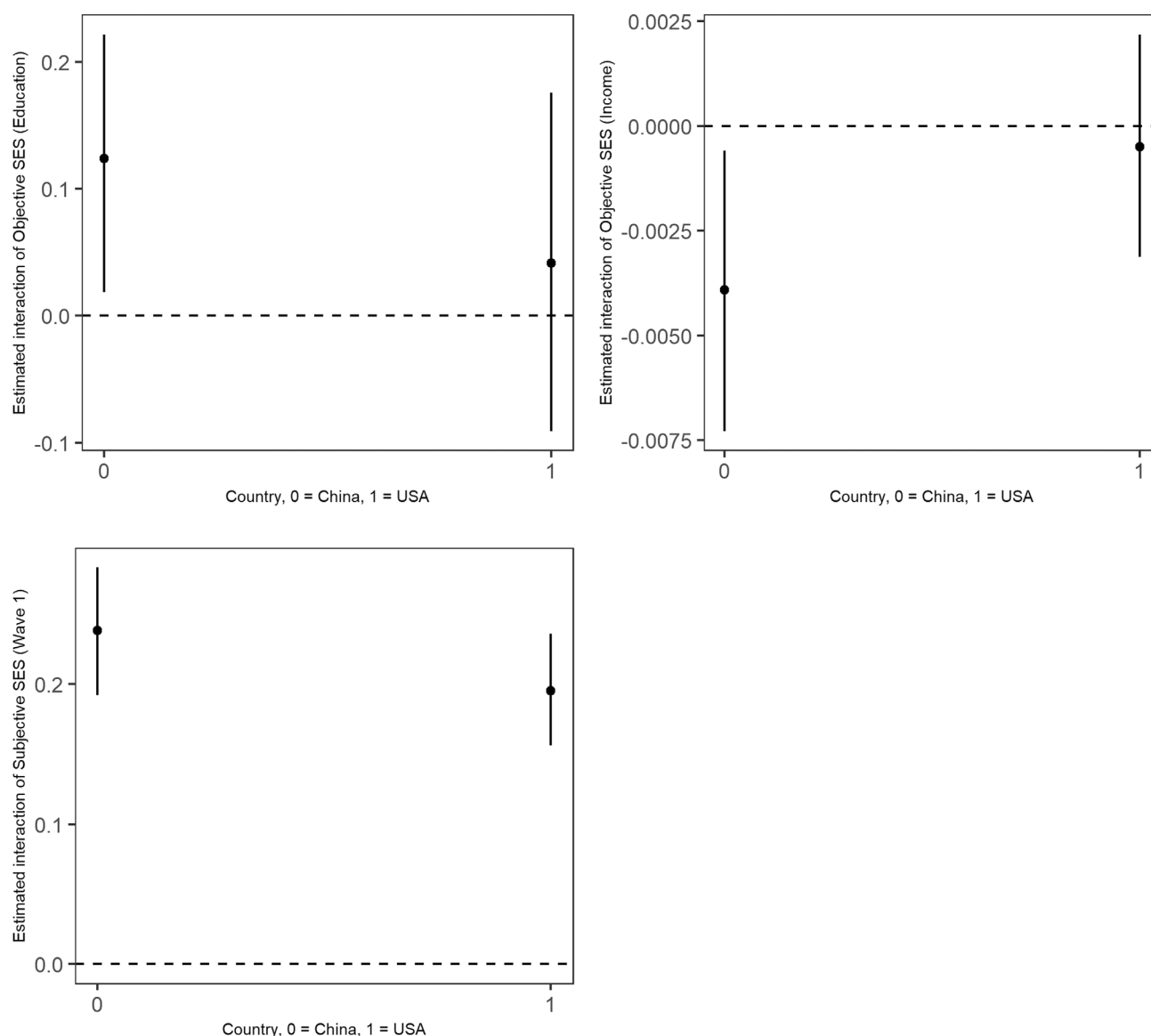# Conditional Coefficient of Subjective and Objective SES on SJ by Country

Figure 1 Estimated effect of subjective and objective SES on system justification by country (cross-sectionally). Whiskers on either side of points capture the 95% confidence intervals of effect. The dotted line at 0 indicates the null hypothesis. Whiskers crossing 0 indicate $p > .05$. Conditional coefficients are unstandardized.

package in r statistical software (Champely et al., 2018) on participants who completed all measures of interest. Power $(1 - \beta)$ set at 0.8 and $\alpha = .05$ showed us that our samples in China (Waves 1 and 2, $n = 336$) prior to imputation were adequate to have 80% power to detect true effect sizes of $f^2 = .023$. In the USA, our samples (Wave 1, $n = 830$, and Wave 2, $n = 489$) prior to imputation were adequate to have 80% power to detect true effect sizes of $f^2 = .009$ and $f^2 = .016$, respectively. Many participants ($n = 999$) failed to report one of our

objective SES indicators (education), leading to an overall smaller sample size prior to imputation. This could have contributed to biased estimates during imputation and overall null findings surrounding education for both countries.

General Discussion

The purpose of this study was to provide a replication of Studies 1a and 1b of Li, Wu, and Kou (2020) and Li,

Conditional Coefficient of Subjective and Objective SES on SJ by Country
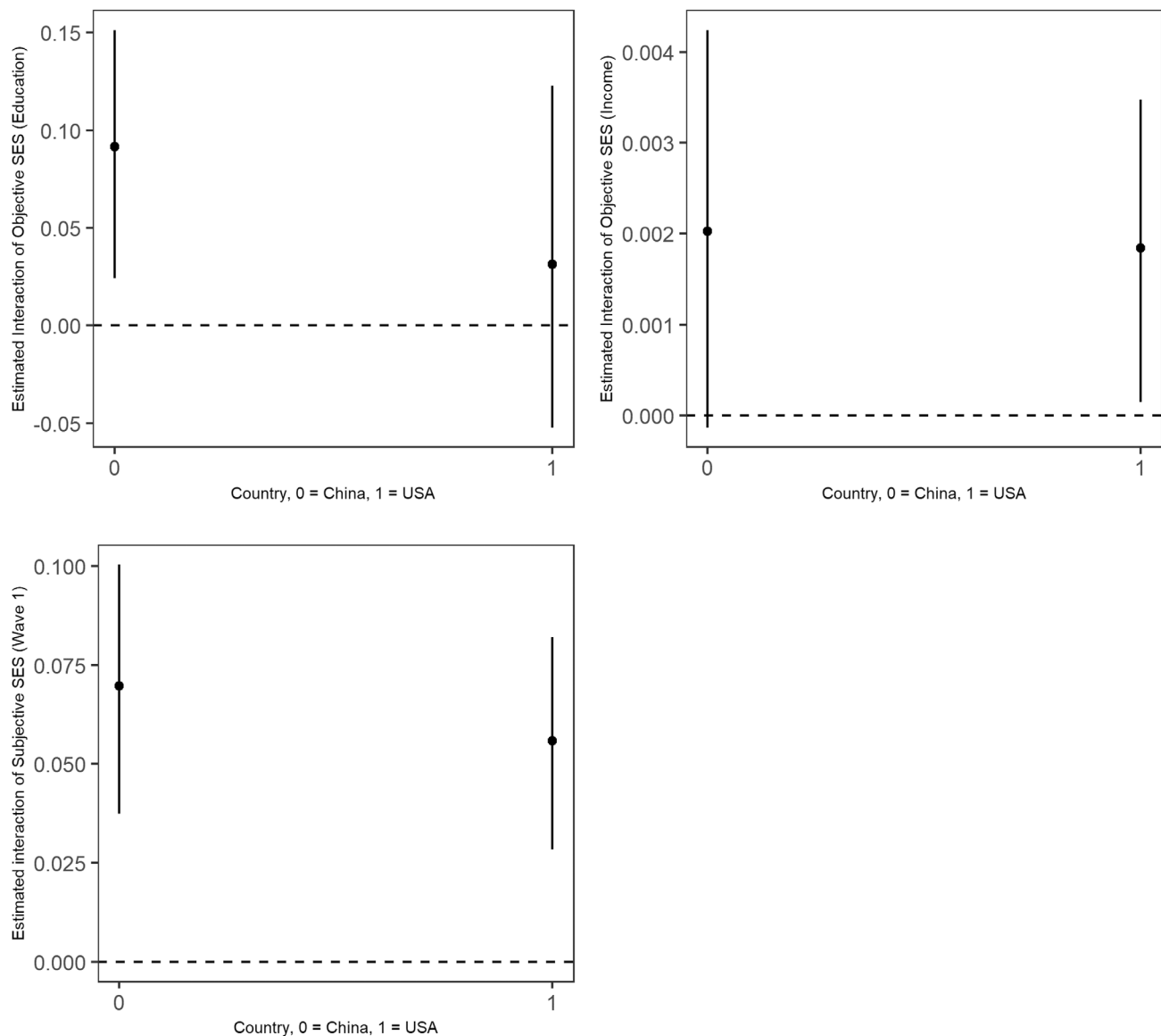

Figure 2 Estimated effect of subjective and objective SES on system justification by country (longitudinally). Whiskers on either side of points capture the 95% confidence intervals of effect. The dotted line at 0 indicates the null hypothesis. Whiskers crossing 0 indicate $p > .05$. Conditional coefficients are unstandardized.

Yang, et al. (2020), and an extension via longitudinal data to test how status-legitimacy effects vary over time. SJT and its status-legitimacy hypothesis propose that under certain circumstances, lower-status individuals are more likely to justify the social system than high status persons (Brandt, 2013; Jost et al., 2012). We failed to replicate the correlational finding of Li's group of a negative relationship between objective SES (income and education) and system justification; these instead showed significant small positive correlations with system justification during Waves 1 and 2 in China. Similarly in the USA, objective SES (income and education) was seen to have small positive significant correlations with system justification during Waves 1 and 2 but no support for the status-legitimacy hypothesis.

The most robust relationship we found across cross-sectional and cross-lagged multiple regression and correlational analyses was that higher subjective SES was associated with greater system justification in China and the USA (see Table 3 and Figures 1 and 2), which

Table 3

Multiple Regression Analysis with Interaction Effects of System Justification

	Dependent variable	
	System justification Wave 1 (Cross-Sectional)	System Justification Wave 2 (Longitudinal)
Age	0.001 (−0.01, 0.01)	0.001 (−0.01, 0.01)
Gender	0.22 (0.05, 0.36)***	0.14 (−0.004, 0.20)
Country	−0.69 (−1.28, −0.71)***	0.35 (−0.02, 0.54)
Education	−0.004 (−0.003, 0.09)	0.11 (−0.03, 0.16)
Household income	−0.004 (−0.005, −0.001)**	0.002 (−0.0002, 0.004)
Subjective SES	0.24 (0.19, 0.28)***	0.09 (0.05, 0.13)***
System justification (Wave 1)		0.68 (0.64, 0.73)***
Country × Age	0.004 (−0.003, 0.01)	0.003 (−0.002, 0.01)
Country × Gender	−0.44 (−0.63, −0.20)***	−0.001 (−0.002, 0.06)
Country × Education	−0.04 (−0.24, 0.08)	−0.06 (−0.17, 0.05)
Country × Household income	0.003 (−0.001, 0.01)	−0.0002 (−0.003, 0.003)
Country × Subjective SES	−0.04 (−0.10, 0.02)	−0.01 (−0.06, 0.03)
Country × System justification (Wave 1)		−0.02 (−0.08, 0.04)
Constant	0.69 (0.45, 0.92)***	0.07 (0.02, 0.27)***
Observations	2,165	2,165
R^2	0.19	0.58
Adjusted R^2	0.18	0.56
Residual Std. Error	1.22 (*df* = 2,153)	0.81 (*df* = 2,151)
F Statistic	44.68 (*df* = 11; 2,153)***	273.18 (*df* = 13; 2,151)***

Note. Wave 1: R^2 = .19; $F(11, 2,153)$ = 44.98, $p < .001$; Wave 2: R^2 = .58; $F(15, 2,149)$ = 210.83, $p < .001$. Country is coded as China = 0 and USA = 1. Main unstandardized effects within the table estimated effects for participants, while interactions represent the difference between the estimated effects for Chinese participants and those for US participants. Regression coefficients can be seen in the table. Values for 95% confidence intervals are in parentheses. SES = socioeconomic status.

coincides with the results seen by Li's group in China and supports what we had hypothesized for the USA. The psychological process of attending to self-interests via social comparisons necessary for judging subjective status generalizes cross-culturally in both societies when it comes to system justification. In accord with Owuamalam et al. (2018) and Sidanius and Pratto (2001), an individual's subjective advantaged experience compared to their social circle provides them with a greater tendency to defend and legitimize the system. Evidence for this can be seen in both the present study and worldwide research that found a consistent positive relationship between subjective SES and system justification (Brandt, 2013; Brandt et al., 2020, Davidai, 2018; Vargas-Salfate et al., 2018; Yang et al., 2016; Zimmerman & Reyna, 2013). We did not find empirical support for the status-legitimacy hypothesis (LCDM) where subjective SES was concerned. However, this does not imply that individuals with low subjective SES do not system justify; according to Brandt et al. (2020), group identification, self-esteem, and perceived social mobility are associated with a system-justifying motive for those with low subjective SES—all

potential underlying mechanisms that future researchers could use to better understand the relationship between subjective SES and system justification.

The results are more complicated for objective SES. Cross-sectional regression analyses revealed objective SES (education and income) was found to have a non-significant relationship with system justification in the USA. This finding provides no support for the postulates of the LCDM nor what we had hypothesized in the USA cross-sectionally. In China, though, we found a negative significant relationship for income but not for education on system justification, which provides partial support for Li's group's cross-sectional findings of a negative relationship between objective SES and system justification (the SIAM). This unexpected divergent cross-sectional finding for objective (income) and subjective SES is theoretically intriguing for researchers interested in further testing status-legitimacy effects. It provides evidence that measuring a construct like status in either objective or subjective terms can convolute the interpretation of the validity of status-legitimacy effects. Researchers who

have defined status in subjective terms rarely find support for status-legitimacy effects, while others who have used objective SES have found support (Brandt, 2013; Brandt et al., 2020, Davidai, 2018; Henry & Saul, 2006; Jost et al., 2003; Jost & Hunyady, 2005; Li, Wu, & Kou, 2020; Li, Yang, et al., 2020; Sengupta et al., 2015; Vargas-Salfate et al., 2018; Whyte & Maocan, 2010; Yang et al., 2016; Zimmerman & Reyna, 2013). Three recent studies found evidence of status-legitimacy effects when differentiating objective and subjective SES in both large cross-cultural and single country tests (Kim et al. 2022; Owuamalam et al., in press; Zhang et al., 2022). Consistent with our SIAM postulates, Owuamalam et al. (in press) argue that cultural group norms surrounding social identity, such as the harmony creed, help to explain the relationship between objective SES and system justification. In China, cultural norms create a sense of obligation (for low objective status individuals) to accept the hierarchical authority and the system—it is prudent to accept their disadvantaged position and acquiesce to the status quo.

In longitudinal cross-lagged analyses, objective SES (education and income) at Wave 1 had no significant relationship with system justification at Wave 2 after we controlled for Wave 1 social justification in China and the USA. These cross-lagged findings largely go against what Li's group had found in their study and contradicts our SIAM hypothesis about objective SES (income and education) and its relationship to system justification in China. Once again, this finding provides no support for LCDM postulates in the USA for education during cross-lagged analyses, as no longitudinal relationship with system justification was revealed. It is possible the null findings during our longitudinal cross-lagged analysis may be attributed to the 6 month time lag between waves, but as 6 months is the longest period over which most participants have accurate memory for life events (Jenkins et al., 1979), it was a good starting point for a longitudinal test. Future research could use multiple waves or other time intervals to extend the initial findings reported here (see Orth et al., 2021).

Social, economic, and political differences

Interestingly, when comparing the level of system justification between the USA and China cross-sectionally, we found that system justifying beliefs were much greater in the Chinese sample than in the USA sample (see Table 3).[7] This coincides with our theorizing about the SIAM: In a rising economy such as China, Chinese citizens may be more likely to perceive that there are more opportunities to improve one's socioeconomic status; therefore, there should also be more ego-based reasons for an individual to system-justify over time regardless of the socioeconomic status position. It also aligns with

Brandt's findings (2013) that individuals from countries with low levels of civil liberties system-justified to a greater extent than those with more civil liberties. Another possible explanation is many Chinese citizens feel a sense of dependence on the Chinese Communist Party to continue improving societal circumstances, hence allowing them to translate their dependence into a justified legitimacy of the status quo in China.

The USA, a nominally meritocratic culture with a great deal of civility liberties yet high inequality and low or no economic growth for the middle and lower classes, is the ideal society according to Jost et al. (2003) and the LCDM to test for status-legitimacy effects. A country with all of these qualities should possess a stronger system-justifying motive; however, the present research shows otherwise for both subjective and objective measures of status. Deciding to system justify as an American is a complex decision, because, unlike in China, the USA is a democratic society where the idea of individual, pluralistic beliefs are encouraged—debate and disagreement is looked upon more favourably over justifying the status quo. We found no support for the status-legitimacy hypothesis (i.e., LCDM). Perhaps the fact that the data used here were collected during and after the 2016 USA presidential election, a time when trust in the American political system hit a low (Dyck et al., 2018), contributed to the null findings.

Longitudinal failure to replicate cross-sectional results

There are several potential explanations for why we failed to find support for our hypotheses surrounding objective SES in the USA, as well as for the findings in Li, Wu, and Kou (2020) and Li, Yang, et al. (2020) of a negative relationship between objective SES and system justification in China. We used a cross-lagged panel model (CLPM) during our longitudinal analysis, which has been shown to have some limitations on temporal indications surrounding within-person and between-person variance and stability (Hamaker et al., 2015). Additionally, we used a time lag of 6 months between waves, which was a consequence of using secondary data. When using a CLPM, time lags can have severe implications for hypothesis testing of longitudinal data (Orth et al., 2021).

We see the fluidity of status-legitimacy effects over time as a theoretical explanation for why we failed to find support for our hypotheses and replicate the findings of Li's group longitudinally. This fluidity may be an implicit contributing factor to the long-standing debate about the validity of the status-legitimacy hypothesis (Brandt, 2013). Blasi and Jost (2006) postulate that an individual's want or need to system justify continuously competes with other individual/group motivations that

may take precedence over system justification. Because these motivations are constantly competing, a person may legitimize or justify a system at one point in time but be less inclined to do so at a different point in time; this was supported in our findings of variation between the cross-sectional and longitudinal analyses in both the USA and China (see Figures 1 and 2) regarding the relationship between objective SES (income) and system justification. Longitudinal designs provide a more critical test of the underlying mechanisms of status on system justification. They also directly test the fluidity in system justifying motives postulated by Blasi and Jost (2006), which benefits the system justification literature by incorporating how status-legitimacy effects vary over time—how people change over time.

Li, Wu, and Kou (2020) and Li, Yang, et al. (2020) chose to use a single item ("Generally speaking, do you think Chinese society is fair?") to measure system justification, which may have oversimplified system-justifying motivations within their sample. We tested this hypothesis cross-sectionally using the same single item to measure system justification for both societies.[8] Similarly to our cross-sectional and cross-lagged longitudinal analyses, this single-item system justification analysis failed to replicate Li's group's findings.

With respect to one of our indicators of objective SES, a large number of participants failed to report their education level (46%) during data collection, which could have caused inaccurate approximations of this parameter during multiple imputation. It might have introduced error into the measurements of education, leading to biased estimates of its effect (Westfall & Yarkoni, 2016).

Strengths, limitations, and directions for future research

We extended previous research on system justification by exploring this phenomenon with Chinese participants—who are an understudied population in psychological research on status-related issues—compared to a Western society that differs economically, socially, and politically (Li, Wu, & Kou, 2020; Li, Yang, et al., 2020). As a replication and extension, our study had some small differences from the original. We used participants from an additional country (the USA) rather than just China, and our sample sizes for each country were small in comparison to those in the studies by Li's group. However, our study was able to secure sufficient statistical power to detect small effects by using a relatively large multiply imputed adult demographic stratified quota sample for both countries during cross-sectional and cross-lagged analyses ($f^2 = .02$). Regarding the relation between objective SES and system

justification, Studies 3–5 in Li, Wu, and Kou (2020) and Li, Yang, et al. (2020) revealed that the indirect effect of objective SES and system justification through the mediating role of conservatism was more robust. As the present study did not measure political ideology, the hypothesis of whether the indirect effect holds could not be tested. Our study was not preregistered and hypotheses were formed during the process of data analysis. However, our hypotheses were not designed to accommodate the final results (see Rubin, 2017), and indeed were contradicted by several aspects of our findings. Nevertheless, future preregistered tests of the SIAM and status-legitimacy hypotheses would be useful.

This research attempted to highlight the divergent roles of objective and subjective SES in predicting system justification cross-culturally. Previous research has implied system justification motives are produced by objective and subjective SES (Jost et al., 2003); however, the fact that we get consistent findings in relation to subjective SES and system legitimacy and completely inconsistent findings between objective SES and system justification suggests that these relationships could easily be bidirectional instead of unidirectional. Therefore, we believe the palliative effects of system justification (Blasi and Jost, 2006) could feed into an individual's social comparison process to compute subjective status. We argue that perceiving oneself (subjective SES) as higher (than others) on a social hierarchy could act as a rationalization for why an individual views a system as legitimate, fair, and just. It is important to note that cross-lagged panel designs that are based on only two time points, such as the present study, do not establish causality unequivocally (Hamaker et al., 2015). We suggest more extensive use of longitudinal data to test this theoretical reconceptualization of the directionality of the relationship between SES and system justification, with multiple observation points.

The brief system justification scale in the current research has been used in a variety of studies to capture general perceptions of social fairness and justice (Jost, 2019). It is possible, though, that this measure may not always capture the psychological motivation to legitimize the status quo. Future research may wish to use experimental and implicit methods to more fully detail the extent to which the measure predicts support for the status quo, rather than just being an index by which society is perceived as fair (Jost, 2020). Contextual factors should also be addressed in future research to help explain the impact of group identification (Brandt et al., 2020) and political orientation as it relates to status and system justification. Cross-cultural research exploring the association between status and system justification could investigate how a country's level of (in)equality or freedom moderates the

relationship between objective and subjective SES and system justification.

Conflict of Interest

The authors declare there are no potential conflicts of interests with respect to the research, authorship, and/or publication of this article.

Author Contributions

Evan A Valdes: Conceptualization; formal analysis; writing – original draft; writing – review and editing. **James H. Liu:** Conceptualization; formal analysis; funding acquisition; project administration; supervision; writing – original draft; writing – review and editing. **Matt Williams:** Formal analysis; methodology; supervision; writing – review and editing.

Open Research Badges

This article has earned Open Data and Open Materials badges. Data and materials are available at https://osf.io/sngpm/?view_only=646c993fd0704c1c92171e1fa19945f8.

Data Availability Statement

The data that support the findings of this study are available from the corresponding author upon request or can be located at https://osf.io/sngpm/?view_only=646c993fd0704c1c92171e1fa19945f8

Research Materials Statement

The research materials that support the findings of this study are available from the corresponding author upon request or can be located at https://osf.io/sngpm/?view_only=646c993fd0704c1c92171e1fa19945f8

Pre-Registration Statement

This study was not pre-registered.

End notes

[1] https://data.worldbank.org/indicator/NY.GDP.MKTP.KD.ZG?locations=US

[2] https://www.federalreserve.gov/releases/z1/dataviz/dfa/distribute/table/

[3] According to Hofstede's cultural dimension indices (2021), which show the effects of a society's culture on the values of its citizens, and how these values contribute to behaviour, using factor analysis. China's individualism score was 20 during time of data collection, implying that it is considered to still be a highly collectivist culture. On the other hand, the US individualism score was 91 during the time of data collection, indicating that the US is one of the most individualist societies. Furthermore, according to The World Bank's (2019) meritocracy index where higher rankings indicate less meritocracy in a given society, we find that China (ranked 76th out of 141 countries) which places them above the country wide median for meritocratic opportunities and beliefs. Just for comparison, the US (ranked 1st) during the time of data collection exemplifies this cultural difference in meritocracy.

[4] See https://www.everycrsreport.com/reports/RL33534.html

[5] http://cgss.ruc.edu.cn/

[6] For a list of publications from this dataset, see https://www.dropbox.com/s/oko40j9uzzh1i8j/Digital%20Influence%20World%20Project%20Research%20Output.docx?dl=0

[7] It should be noted that in the absence of scalar invariance, differences in measurement properties of the scales across the two samples could partially or fully explain the mean difference between samples.

[8] Subjective SES significantly positively predicted the single item of system justification for both countries. Further support was seen when we plotted the marginal effects of subjective SES between the two countries on the single item of system justification. Objective SES was found to have no relationship with system justification as a single item in the USA, while in China, income but not education had a slight negative relationship with the single item of system justification. When we plotted the marginal effects of objective SES (income and education) on the single item of system justification between the two countries, education had a slight positive interaction, while income had a slight negative interaction with system justification as a single item in China only.[9]

[9] For a list of publications from this dataset, see https://www.dropbox.com/s/oko40j9uzzh1i8j/Digital%20Influence%20World%20Project%20Research%20Output.docx?dl=0

References

Adler, N. E., Epel, E. S., Castellazzo, G., & Ickovics, J. R. (2000). Relationship of subjective and objective social status with psychological and physiological functioning: Preliminary data in healthy, White women. *Health Psychology*, *19*(6), 586–592. https://doi.org/10.1037/0278-6133.19.6.586

Ana Lugo, M., Raiser, M., Yemtsov, R. (2022). *China's economic transformation and poverty reduction over the years: An overview*, KCG Policy Paper, No. 8, Kiel Centre for Globalization (KCG), Kiel.

Anderson, C., Kraus, M. W., Galinsky, A. D., & Keltner, D. (2012). The local-ladder effect: Social status and subjective well-being. *Psychological Science*, *23*(7), 764–771. https://doi.org/10.1177/0956797611434537

Blasi, G., & Jost, J. T. (2006). System justification theory and research: Implications for law, legal advocacy, and social justice. *California Law Review*, *94*(4), 1119–1168. https://doi.org/10.2307/20439060

Brandt, M. J. (2013). Do the disadvantaged legitimize the social system? A large-scale test of the status–legitimacy hypothesis. *Journal of Personality and Social Psychology*, *104*(5), 765–785. https://doi.org/10.1037/a0031751

Brandt, M. J., Kuppens, T., Spears, R., Andrighetto, L., Autin, F., Babincak, P., ... Zimmerman, J. L. (2020). Subjective status and perceived legitimacy across countries. *European Journal of Social Psychology*, *50*(5), 921–942. https://doi.org/10.1002/ejsp.2694

Buchel, O., Luijkx, R., & Achterberg, P. (2020). Objective and subjective socioeconomic status as sources of status-legitimacy effect and legitimation of income inequality. *Political Psychology*, *42*, 463–481. https://doi.org/10.1111/pops.12707

Caricati, L. (2017). Testing the status-legitimacy hypothesis: A multilevel modeling approach to the perception of legitimacy in income distribution in 36 nations. *The Journal of Social Psychology*, *157*(5), 532–540. https://doi.org/10.1080/00224545.2016.1242472

Champely, S., Ekstrom, C., Dalgaard, P., Gill, J., Weibelzahl, S., Anandkumar, A., & De Rosario, M. H. (2018). *Package 'pwr'. R package version*, *1*(2). https://cran.r-project.org/web/packages/pwr/

Chetty, R., Friedman, J. N., Hendren, N., Jones, M. R., & Porter, S. R. (2018). The opportunity atlas: Mapping the childhood roots of social mobility. *National Bureau of Economic Research*, w25147. https://doi.org/10.3386/w25147

Cumming, G. (2014). The new statistics: Why and how. *Psychological science*, *25*(1), 7–29. https://doi.org/10.1177/0956797613504966

Davidai, S. (2018). Why do Americans believe in economic mobility? Economic inequality, external attributions of wealth and poverty, and the belief in economic mobility. *Journal of Experimental Social Psychology*, *79*, 138–148. https://doi.org/10.1016/j.jesp.2018.07.012

Dyck, J. J., Pearson-Merkowitz, S., & Coates, M. (2018). Primary distrust: Political distrust and support for the insurgent candidacies of Donald Trump and Bernie Sanders in the 2016 primary. *PS: Political Science and Politics*, *51*(2), 351–357. https://doi.org/10.1017/S1049096517002505

Gil de Zúñiga, H., & Liu, J. H. (2017). Second screening politics in the social media sphere: Advancing research on dual screen use in political communication with evidence from 20 countries. *Journal of broadcasting & electronic media*, *61*(2), 193–219. https://doi.org/10.1080/08838151.2017.1309420

Hamaker, E. L., Kuiper, R. M., & Grasman, R. P. (2015). A critique of the cross-lagged panel model. *Psychological Methods*, *20*(1), 102–116. https://doi.org/10.1037/a0038889

Henry, P. J., & Saul, A. (2006). The development of system justification in the developing world. *Social Justice Research*, *19*(3), 365–378. https://doi.org/10.1007/s11211-006-0012-x

Hofstede Insights. (2021). *Country comparison*. https://www.hofstede-insights.com/country-comparison/china,the-usa/

Hu, L. T., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural equation modeling: a multidisciplinary journal*, *6*(1), 1–55. https://doi.org/10.1080/10705519909540118

Hyun, K. D., & Kim, J. (2015). The role of new media in sustaining the status quo: Online political expression, nationalism, and system support in China. *Information, Communication and Society*, *18*(7), 766–781. https://doi.org/10.1080/1369118X.2014.994543

Jenkins, C. D., Hurst, M. W., & Rose, R. M. (1979). Life changes: Do people really remember? *Archives of General Psychiatry*, *36*(4), 379–384. https://doi.org/10.1001/archpsyc.1979.01780040021001

Jost, J. T. (2011). System justification theory as compliment, complement, and corrective to theories of social identification and social dominance. In *Annual scientific meeting of the International Society for Political Psychology, 23rd, Seattle, WA, US; A very early version of which was presented at the aforementioned meeting*. Psychology Press.

Jost, J. T. (2019). A quarter century of system justification theory: Questions, answers, criticisms, and societal applications. *British Journal of Social Psychology*, *58*(2), 263–314. https://doi.org/10.1111/bjso.12297

Jost, J. T. (2020). *A theory of system justification*. Harvard University Press.

Jost, J. T., & Banaji, M. R. (1994). The role of stereotyping in system-justification and the production of false consciousness. *British Journal of Social Psychology*, *33*(1), 1–27. https://doi.org/10.1111/j.2044-8309.1994.tb01008.x

Jost, J. T., Burgess, D., & Mosso, C. O. (2001). The integrative potential of system justification theory. In *The psychology of legitimacy: Emerging perspectives on ideology, justice, and intergroup relations* (pp. 363–390). Cambridge University Press.

Jost, J. T., Chaikalis-Petritsis, V., Abrams, D., Sidanius, J., Van Der Toorn, J., & Bratt, C. (2012). Why men (and women) do and don't rebel: Effects of system justification on willingness to protest. *Personality and social psychology Bulletin*, *38*(2), 197–208. https://doi.org/10.1177/0146167211422544.

Jost, J. T., & Hunyady, O. (2005). Antecedents and consequences of system-justifying ideologies. *Current Directions in Psychological Science*, *14*(5), 260–265. https://doi.org/10.1111/j.0963-7214.2005.00377.x

Jost, J. T., Pelham, B. W., Sheldon, O., & Ni Sullivan, B. (2003). Social inequality and the reduction of ideological dissonance on behalf of the system: Evidence of enhanced system justification among the disadvantaged. *European Journal of Social Psychology*, *33*(1), 13–36. https://doi.org/10.1002/ejsp.127

Kay, A. C., Gaucher, D., Peach, J. M., Laurin, K., Friesen, J., Zanna, M. P., & Spencer, S. J. (2009). Inequality, discrimination, and the power of the status quo: Direct evidence for a motivation to see the way things are as the way things should be. *Journal of Personality and Social Psychology*, *97*(3), 421–434. https://doi.org/10.1037/a0015997

Kay, A. C., & Jost, J. T. (2003). Complementary justice: Effects of" poor but happy" and" poor but honest" stereotype exemplars on system justification and implicit activation of the justice motive. *Journal of Personality and Social Psychology*, *85*(5), 823–837. https://doi.org/10.1037/0022-3514.85.5.823

Kennedy, J. J. (2009). Maintaining popular support for the Chinese Communist Party: The influence of education and the state-controlled media. *Political Studies*, *57*(3), 517–536. https://doi.org/10.1111/j.1467-9248.2008.00740.x

Kim, Y., Sommet, N., Na, J., & Spini, D. (2022). Social class—Not income inequality—Predicts social and institutional trust. *Social Psychological and Personality Science*, *13*(1), 186–198. https://doi.org/10.1177/1948550621999272

Kraus, M. W., Piff, P. K., & Keltner, D. (2009). Social class, sense of control, and social explanation. *Journal of Personality and Social Psychology*, *97*(6), 992–1004. https://doi.org/10.1037/a0016357

Li, A., & Hu, A. (2021). Community contexts, socioeconomic status, and meritocratic beliefs and perceptions in China. *Chinese Journal of Sociology*, *7*(3), 470–493. https://doi.org/10.1177/2057150X211023235

Li, W., Wu, J., & Kou, Y. (2020). System justification enhances life satisfaction of high-and low-status people in China. *Social Psychological and Personality Science*, *11*(5), 588–596. https://doi.org/10.1177/1948550619866182

Li, W., Yang, Y., Wu, J., & Kou, Y. (2020). Testing the status-legitimacy hypothesis in China: Objective and subjective socioeconomic status divergently predict system justification. *Personality and Social Psychology Bulletin*, *46*, 1044–1058. https://doi.org/10.1177/0146167219893997

Liu, J. H., Li, M. C., & Yue, X. D. (2010). Chinese social identity and intergroup relations: The influence of benevolent authority. In M. H. Bond (Ed.), *Oxford handbook of Chinese psychology* (2nd ed., pp. 579–597). Oxford University Press.

Manly, C. A., & Wells, R. S. (2015). Reporting the use of multiple imputation for missing data in higher education research. *Research in Higher Education*, *56*(4), 397–409. https://doi.org/10.1007/s11162-014-9344-9

Maxwell, S. E., Cole, D. A., & Mitchell, M. A. (2011). Bias in cross-sectional analyses of longitudinal mediation: Partial and complete mediation under an autoregressive model. *Multivariate Behavioral Research*, *46*(5), 816–841. https://doi.org/10.1080/00273171.2011.606716

Monroe, S. M. (1982). Assessment of life events: Retrospective vs concurrent strategies. *Archives of General Psychiatry*, *39*(5), 606–610. https://doi.org/10.1001/archpsyc.1982.04290050074014

Newman, B. J., Johnston, C. D., & Lown, P. L. (2015). False consciousness or class awareness? Local income inequality, personal economic position, and belief in American meritocracy. *American Journal of Political Science*, *59*(2), 326–340. https://doi.org/10.1111/ajps.12153

Orth, U., Clark, D. A., Donnellan, M. B., & Robins, R. W. (2021). Testing prospective effects in longitudinal research: Comparing seven competing cross-lagged models. *Journal of Personality and Social Psychology*, *120*(4), 1013–1034. https://doi.org/10.1037/pspp0000358

Owuamalam, C. K., Rubin, M., & Spears, R. (2018). Addressing evidential and theoretical inconsistencies in system-justification theory with a social identity model of system attitudes. *Current Directions in Psychological Science*, *27*(2), 91–96. https://doi.org/10.1177/0963721417737136

Owuamalam, C. K., Tan, C. M., Caricati, L., Rubin, M., & Spears, R. (in press). Cultural group norms for harmony explain the puzzling negative association between objective status and system justification in Asia. *European Journal of Social Psychology*.

Rosnow, R. L., & Rosenthal, R. (1989). Definition and interpretation of interaction effects. *Psychological Bulletin*, *105*(1), 143–146. https://doi.org/10.1037/0033-2909.105.1.143

Rubin, M. (2017). When does HARKing hurt? Identifying when different types of undisclosed post hoc hypothesizing harm scientific progress. *Review of General Psychology*, *21*(4), 308–320. https://doi.org/10.1037/gpr0000128

Sengupta, N. K., Osborne, D., & Sibley, C. G. (2015). The status-legitimacy hypothesis revisited: Ethnic-group differences in general and dimension-specific legitimacy. *British Journal of Social Psychology*, *54*(2), 324–340. https://doi.org/10.1111/bjso.12080

Sidanius, J., & Pratto, F. (2001). *Social dominance: An intergroup theory of social hierarchy and oppression*. Cambridge University Press.

Tajfel, H., & Turner, J. C. (1979). The social identity theory of intergroup behaviour. In S. Worchel & W. Austin (Eds.), *Psychology of intergroup relations* (pp. 33–48). Nelson-Hall.

Valdes, E. A. (2022). Looking through the lens of system justification. *Journal of Constructivist Psychology*, *35*(2), 836–840. https://doi.org/10.1080/10720537.2021.1872459

Van Ark, B., O'Mahoney, M., & Timmer, M. P. (2008). The productivity gap between Europe and the United States: Trends and

causes. *Journal of Economic Perspectives*, *22*(1), 25–44. https://doi.org/10.1257/jep.22.1.25

van Buuren, S., & Groothuis-Oudshoorn, K. (2011). Mice: Multivariate imputation by chained equations in R. *Journal of Statistical Software*, *45*(3), 1–67. https://doi.org/10.18637/jss.v045.i03

van der Toorn, J., Berkics, M., & Jost, J. T. (2010). System justification, satisfaction, and perceptions of fairness and typicality at work: A cross-system comparison involving the US and Hungary. *Social Justice Research*, *23*(2–3), 189–210. https://doi.org/10.1007/s11211-010-0116-1

Vargas-Salfate, S., Paez, D., Liu, J. H., Pratto, F., & Gil de Zúñiga, H. (2018). A comparison of social dominance theory and system justification: The role of social status in 19 nations. *Personality and Social Psychology Bulletin*, *44*(7), 1060–1076. https://doi.org/10.1177/0146167218757455

Walder, A. G. (1996). Markets and inequality in transitional economies: Toward testable theories. *American Journal of Sociology*, *101*(4), 1060–1073. https://doi.org/10.1086/230789

Wang, M., Beal, D. J., Chan, D., Newman, D. A., Vancouver, J. B., & Vandenberg, R. J. (2017). Longitudinal research: A panel discussion on conceptual issues, research design, and statistical techniques. *Work, Aging and Retirement*, *3*(1), 1–24. https://doi.org/10.1093/workar/waw033

Westfall, J., & Yarkoni, T. (2016). Statistically controlling for confounding constructs is harder than you think. *PLoS One*, *11*(3), e0152719. https://doi.org/10.1371/journal.pone.0152719

Whyte, M. K., & Maocan, G. (2010). How angry are Chinese citizens about current inequalities? Evidence from a national survey. In *Social stratification in Chinese societies* (pp. 17–54). Brill. https://doi.org/10.1163/ej.9789004181922.i-270.11

Williams, M. N., Grajales, C. A. G., & Kurkiewicz, D. (2013). Assumptions of multiple regression: Correcting two misconceptions. *Practical Assessment, Research, and Evaluation*, *18*(1), 11. https://doi.org/10.7275/55hn-wk47

World Bank. (2019, April). *TCdata360: GCI 4.0: 8.B meritocracy and incentivization*. TCdata360 World Bank. https://tcdata360.worldbank.org/indicators/h0b16d216?country=CHN&indicator=43064&countries=USA&viz=line_chart&years=2017,2019

Wu, X., & Li, J. (2017). Income inequality, economic growth, and subjective well-being: Evidence from China. *Research in Social Stratification and Mobility*, *52*, 49–58. https://doi.org/10.1016/j.rssm.2017.10.003

Yang, S., Guo, Y., Hu, X., Shu, S., & Li, J. (2016). Do lower class individuals possess higher levels of system justification? An examination from the social cognitive perspectives. *Acta Psychologica Sinica*, *48*(11), 1467–1478. https://doi.org/10.3724/SP.J.1041.2016.01467

Zhang, Y., Ding, Y., Xie, X., Guo, Y., & van Lange, P. A. (2022). Lower class people suffered more (but perceived fewer risk disadvantages) during the COVID-19 pandemic. *Asian Journal of Social Psychology*. https://doi.org/10.1111/ajsp.12543 [Epub ahead of print].

Zhou, J., & Xie, Y. (2016). Does economic development affect life satisfaction? A spatial–temporal contextual analysis in China. *Journal of Happiness Studies*, *17*(2), 643–658. https://doi.org/10.1007/s10902-015-9612-1

Zimmerman, J. L., & Reyna, C. (2013). The meaning and role of ideology in system justification and resistance for high-and low-status people. *Journal of Personality and Social Psychology*, *105*(1), 1–23. https://doi.org/10.1037/a0032967