

Social Class, Sense of Control, and Social Explanation

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Lower social class is associated with diminished resources and perceived subordinate rank. On the basis of this analysis, the authors predicted that social class would be closely associated with a reduced sense of personal control and that this association would explain why lower class individuals favor contextual over dispositional explanations of social events. Across 4 studies, lower social class individuals, as measured by subjective socioeconomic status (SES), endorsed contextual explanations of economic trends, broad social outcomes, and emotion. Across studies, the sense of control mediated the relation between subjective SES and contextual explanations, and this association was independent of objective SES, ethnicity, political ideology, and self-serving biases. Finally, experimentally inducing a higher sense of control attenuated the tendency for lower subjective SES individuals to make more contextual explanations (Study 4). Implications for future research on social class as well as theoretical distinctions between objective SES and subjective SES are discussed.

Keywords: social class, power, sense of control, attribution, emotion

Social class comprises both an individual's material resources and an individual's perceived rank within the social hierarchy. Social class determines many aspects of material life, from the social activities individuals engage in (Bourdieu, 1985) to vulnerabilities for health- and mood-related problems (Adler et al., 1994). Given these influences of social class on many domains of social life, in the present research, we investigate how class influences explanations of personal and social outcomes.

Here, guided by conceptualizations within cultural psychology research (Cohen, 2007) and recent advances in the measurement of social class (Adler, Epel, Castellazo, & Ickovics, 2000; Goodman et al., 2001; Singh-Manoux, Adler, & Marmot, 2003), we examine how social class influences explanations of social outcomes ranging from economic trends to the emotions of others. From work suggesting that lower social class is associated with a lower sense of personal control, we hypothesized that lower class individuals would offer contextual (over dispositional) explanations of various social outcomes and that class-related differences in personal control would account for the influence of social class on contextual explanation.

Measuring Social Class: Objective and Subjective Approaches

Like many identity-related measures, social class comprises multiple, complex components. Traditionally, researchers mea-

sure social class with objective indicators of socioeconomic status (SES). Objective SES refers to the material conditions of life that an individual enjoys. Typical examples of objective SES include an individual's financial resources, access to educational opportunities, and participation in social institutions (Oakes & Rossi, 2003). However, recent reviews of the social class literature have highlighted inherent problems in measuring class in terms of these objective indicators. For example, it is uncertain how measures of objective SES (e.g., education, family wealth) combine to yield a single measure of social class. In addition, it has proven difficult to determine class differences between people who have relatively equal objective SES levels. Finally, measures of objective SES often depend on outdated population estimates of objective SES indicators (Brown, Fukumaga, Umamoto, & Wicker, 1996; Liu et al., 2004; Oakes & Rossi, 2003). These problems have led many researchers to question the validity of objective measures of SES in capturing the complexity of class and to turn to new, more subjective measures of SES.

Recent research on the influences of social class on health outcomes suggests that class includes rank vis-à-vis others in the social hierarchy. This feature of social class is unaccounted for by objective measures of SES (Adler et al., 2000; Singh-Manoux et al., 2003). The theoretical foundations of this rank-based approach to social class are studies of nonhuman species showing that lower status individuals tend to show poorer health (Blanchard, Sakai, McEwen, Weiss, & Blanchard, 1993; Kaplan & Manuck, 1999; Sapolsky, 1982). Guided by these discoveries, a consortium of researchers developed the MacArthur Scale of subjective SES (Goodman et al., 2001). In this measure, participants mark an X next to one of 10 rungs on a ladder to indicate their own social class rank relative to comparison individuals (e.g., Goodman et al., 2001). Unlike objective SES measures, subjective SES assesses social class rank relative to other members of the same university, commu-

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nity, or country. As such, subjective SES captures the individual's perceived place within a resource-based hierarchy.

Several lines of evidence attest to the validity of this rank-based measure of social class. It is important to note that this measure of subjective SES is only moderately correlated with objective indices of SES across several studies, suggesting that this rank-based dimension of social class is likely to independently predict class-related outcomes (Adler et al., 2000; Goodman et al., 2001).

Previous research has shown that this measure of subjective SES is independent of other constructs that are thought to be the proximal processes by which social class, an identity-based variable, influences cognitive tendencies and life outcomes. Most important for the present investigation, this measure of subjective SES is distinct from the sense of control. The sense of control is our proposed mediator between social class and social explanation and is defined as the belief individuals maintain about the extent to which they can shape the course of their own social outcomes (Lachman, 1986; Lachman & Weaver, 1998). In one investigation, the sense of control provided no additional explanatory power accounting for variation in subjective SES over and above objective indicators (Singh-Manoux et al., 2003). In addition, data from the first two studies of our current investigation suggest that subjective SES is conceptually distinct from the sense of control. For example, the sense of control was associated with an item related to social power ("I can get people to listen to what I say"; Study 1 $r(101) = .29, p < .01$; Study 2 $r(84) = .44, p < .01$), whereas subjective SES was not (Study 1 $r(101) = .12, ns$; Study 2 $r(84) = -.02, ns$).

Beyond conceptual distinctions, data from several studies demonstrate that the MacArthur Scale of subjective SES has clear predictive validity. For example, relative to objective SES indicators, this measure of subjective SES more strongly predicts physiological health outcomes related to susceptibility to a virus causing the common cold (Cohen et al., 2008), body fat distribution (Adler et al., 2000), resting heart rate (Adler et al., 2000), diabetes (Singh-Manoux et al., 2003), and respiratory illness (Singh-Manoux et al., 2003).

Guided by these measurement developments and our conceptual analysis, we assessed social class with both subjective and objective indicators. We expected that subjective SES would both be independent of objective SES and serve as a more consistent predictor of social explanation. Our specific predictions derive from an analysis of how social class influences the sense of control and contextualist explanations.

Social Class, Sense of Control, and Contextual Explanations of Social Outcomes

Explanations of social events can refer to causes external to the individual (contextual explanations) or within the individual (dispositional explanations; Gilbert & Malone, 1995; Heider, 1958; Kelley, 1973; Malle, 1999; Morris & Peng, 1994). The relative emphasis placed on contextual and dispositional causes of social behavior shifts according to personal motives (e.g., Malle, 1999; D. T. Miller & Ross, 1975; Sherman & Kim, 2005), societal norms (Jellison & Green, 1981), perspective taken by the individual as actor or perceiver (e.g., Jones & Nisbett, 1987), transient emotion (Forgas, 1998; Keltner, Ellsworth, & Edwards, 1993), and cultural background (J. G. Miller, 1984; Morris & Peng, 1994). In the

present research, we examine class-based shifts in explanations of social events.

When people report that they are of lower subjective SES, they are indicating that they have fewer resources and are of subordinate rank vis-à-vis others. As suggested in the literatures on power, status, and interdependence (e.g., Fiske, 1993; Keltner, Gruenfeld, & Anderson, 2003; Rusbult, Verette, Whitney, Slovick, & Lipkus, 1991), self-perceptions of reduced resources and subordinate rank are associated with a diminished sense of personal control (e.g., Gurin & Brim, 1984; Lachman, 1986; Lachman & Weaver, 1998; Levenson, 1981). Though research suggests that some forms of control, like those associated with Type A personality, may be harmful to an individual's health (Strickland, 1978; Thompson, Cheek, & Graham, 1988), a wealth of research suggests that the elevated sense of control over one's outcomes is beneficial because it protects against feelings of hopelessness or apathy (Langer, 1975; Seligman, 1975; 1991; Taylor, 1989). In fact, studies linking social class to control support this latter interpretation, as upper class individuals experience more positive health outcomes because of their increased sense of personal control (Johnson & Krueger, 2005; 2006).

On the basis of this research, we contend that lower class individuals, because of their lower rank vis-à-vis others, are disposed to feel little personal control. As a result of this reduced sense of personal control, lower class individuals will tend to downplay internal or dispositional causes of social behavior that imply control and influence (e.g., Basgall & Snyder, 1988; Sechrist, Swim, & Stangor, 2004). Instead, we reason that lower class individuals will prioritize those causes that are more salient to their own life experiences. More specifically, lower class individuals will explain social outcomes in terms of contextual factors that are, by implication, outside an individual's control (for similar claims on the relation between sense of control and external, contextual attributions, see Jones & Nisbett, 1987; Kelley, 1973; Malle & Knobe, 1997; Phares, Wilson, & Klyver, 1971; Pittman & Pittman, 1980).

This analysis sets the stage for the three central predictions that motivated the present research. First, we predicted that lower class individuals, measured by subjective SES, will indicate a chronically lower sense of personal control. Second, as a function of their lower sense of personal control, lower subjective SES individuals will explain social outcomes in terms of contextual causes rather than dispositional causes (our second hypothesis). Finally, we expected the lower sense of personal control to mediate the relation between subjective SES and social explanation.

With respect to our first prediction that lower subjective SES will be associated with a reduced sense of personal control, objective indices of SES (e.g., family wealth, educational background, occupational prestige) tend to have a small to moderate correlation with a greater sense of personal control ($r_s = .09$ to $.40$; Gallo, Bogart, Vranceneau, & Matthews, 2005; Johnson & Krueger, 2005, 2006; Lachman & Weaver, 1998). The present studies offer systematic examinations of the relation between subjective SES and personal control, independent of objective SES.

Select studies lend support to our second prediction that lower subjective SES individuals will explain social events in terms of contextual causes. For example, upper class executives were more likely than were lower class workers to endorse dispositional

explanations of everyday social behaviors and emotions (Beauvois & Dubois, 1988; Beauvois & Le Poulter, 1986). Survey research has also shown that when asked why there are rich (poor) people in the United States, lower income participants rely more on contextual explanations, such as education, prejudice, and the economic structure of society (Kluegel & Smith, 1986).

The present research builds on these preliminary findings in essential ways. Whereas the work of Kluegel and Smith (1986) has focused almost exclusively on explanations of social stereotypes for why people are rich or poor in society, the present studies extend the class and contextualism hypothesis to several new domains: perceptions of inequality, broad social outcomes, and emotion. Several of these domains are unrelated to the economic categories that are the focus of Kluegel & Smith.

The present research is also the first to document the sense of control as a mechanism underlying the relation between social class and contextual, versus dispositional, social explanation. Using mediational and moderator methods developed in cultural psychology, we propose a causal model wherein a social identity variable (e.g., subjective SES, cultural identification) gives rise to a cultural trait variable (e.g., the sense of control, dialecticism) that then explains a specific outcome associated with the cultural identity (e.g., social explanation, self-esteem; cf., Choi, Nisbett, & Smith, 1997; Cohen, 2007; Spencer-Rodgers, Peng, Wang, & Hou, 2004). In support of our formulation, studies have shown that the sense of control mediates the relations between occupation level and self-reports of elevated positive affect (Gallo et al., 2005), between income and genetic determinants of health outcomes (Johnson & Krueger, 2005), and between income and life satisfaction (Johnson & Krueger, 2006).

The Present Research

Guided by the preceding analysis, we examined the relations among social class, sense of control, and contextual explanations for economic injustice (Studies 1 and 2), several social outcomes (Study 3), and perceptions of others' emotions (Study 4). Across studies, we tested our three predictions and assessed whether subjective SES would, as expected, predict social explanation independent of objective SES. For purposes of generalizability, we tested our hypotheses with university and national samples. We also sought to rule out alternative explanations of our findings (and of the findings from previous studies), by demonstrating that the relation between lower social class and contextual explanations held independently of self-serving biases, ethnicity, and political ideology.

Studies 1 and 2: Explanations of Economic Inequality

In Studies 1 and 2, we explored whether social class is associated with explanations of economic wealth. Participants in both studies viewed a graph displaying trends in economic disparity in the United States over time and then rated the importance of different dispositional and contextual factors that could explain such economic disparity. In Study 1, the graph displayed increasing economic inequality, reflecting the actual trend in society at the time of the study. In Study 2, the graph displayed gradually decreasing economic inequality. This graph allowed us to account

for possible self-serving motives in explanation. That is, Study 2 helped account for the possibility that lower class people protect the self by endorsing contextual explanations for their own negative life outcomes, such as increasing economic inequality (Malle, 1999; D. T. Miller & Ross, 1975).

In addition to testing our three hypotheses, we determined whether subjective SES would be associated with contextual explanations of inequality, independent of objective SES. We also examined whether social class influenced economic explanations independent of ethnic identity. Asian Americans and Latinos tend to have a more collective and contextual definition of the self (e.g., Markus & Kitayama, 1991; Triandis, 1989) and thus might have a tendency to explain social outcomes in terms of contextual factors (Morris & Peng, 1994). Finally, in Study 2, we also assessed participants' political ideology (liberal or conservative). Liberal political orientation is associated with placing a greater emphasis on equality and contextual economic factors when compared with conservative political orientation (Mitchell, Tetlock, Newman, & Lerner, 2003; Sidanius, Ekehhammer, & Lukowsky, 1983) and might account for the relation between social class and contextual explanations.

Method

Participants

Participants were 106 undergraduates in Study 1 and 94 in Study 2. All participants were from a large public university, were enrolled in an introductory psychology course, and participated for course credit. The majority of the samples were female (60.9% female, 39.1% male). The samples were diverse ethnically: 52.3% of the participants were Asian American, 26.4% were European American, and 21.3% of participants self-identified as African American, Latino or Latina, Native American, or other. One participant did not respond to the ethnicity question. Table 1 displays demographic information for participant SES across our four studies (information for Studies 1 and 2 is displayed in Table 1).

Procedure

Participants completed the measures in groups of six or fewer. An experimenter instructed participants that they would provide their beliefs about the economic structure of society. Participants were first given a questionnaire assessing perceptions of the causes of economic inequality. Reproduced on every page of this questionnaire was a graph displaying economic trends in society from 1967 to 1997. The Study 1 graph displayed increasing disparity between the richest and the poorest sectors of United States society. The Study 2 graph displayed gradually decreasing disparity. Both graphs are displayed in Figure 1. After offering explanations of economic inequality, participants completed measures of SES and demographic information. In Study 2, these ratings were followed by two open-ended suspicion probes used to determine whether participants were suspicious of the Study 2 graph ("Was anything strange or unusual during the experiment?" and "What

Table 1
Demographic Information of Participant SES Across All Studies

Variable	Study 1			Study 2			Study 3			Study 4		
	%	<i>M</i>	<i>SD</i>	%	<i>M</i>	<i>SD</i>	%	<i>M</i>	<i>SD</i>	%	<i>M</i>	<i>SD</i>
Income												
<\$15,000	4.9			8.1			9.2			7.2 ^b		
\$15,001–\$25,000	6.8			8.1			3.6			19.2 ^b		
\$25,001–\$35,000	7.8			5.8			11.5					
\$35,001–\$50,000	8.7			5.8			17.1			12.8 ^b		
\$50,001–\$75,000	12.6			19.8			22.7					
\$75,001–\$100,000	12.6			11.7			15.5			12.8 ^b		
>\$100,000	45.6			34.9			12.6			48.0 ^b		
Not reported	0.9			3.5			7.7			0		
Paternal education												
<High school graduate	13.6			14.0						9.6		
High school graduate	16.5			27.9						18.4		
College graduate	68.9			58.1						72.0		
Not reported	0.9			0						0		
Maternal education												
<High school graduate	14.6			15.1						9.6		
High school graduate	20.4			31.4						22.4		
College graduate	65.0			53.5						68.0		
Not reported	0			0						0		
Participant education												
<High school graduate							0.5					
High school graduate							44.6					
College graduate							52.3					
Not reported							2.7%					
Subjective SES		5.67 ^a	2.11		5.34 ^a	2.38		5.56 ^a	1.76		6.35 ^a	1.83

Note. For Study 1, $n = 103$. For Study 2, $n = 86$. For Study 3, $n = 444$. For Study 4, $n = 125$. SES = socioeconomic status.

^a Responses were made using a 10-rung ladder (1 = lowest rung, 10 = highest rung). ^b Income ratings were based on 6 categories: (a) <\$15,000, (b) \$15,000–\$35,000, (c) \$35,000–\$75,000, (d) \$75,000–\$100,000, (e) \$100,000–\$150,000, and (f) >\$150,000.

are the hypotheses of the current study?"). Following these probes, participants were debriefed, thanked, and excused.¹

Measures

Explanations of economic inequality. After viewing the graph, participants were asked to "Please indicate how important you think the contribution of each of the following factors is to growing (decreasing) economic disparity." Participants rated the 12 items on a 5-point Likert scale (1 = not important, 5 = very important). Participants rated 7 contextual explanations and 5 dispositional explanations of economic inequality. The 7 contextual items were inheritance, political influence, economic structure of society, personal background, educational opportunity, wages, and prejudice and discrimination. The 5 dispositional items were ambition, ability and talent, hard work, effort, and money management skills. In general, participants were more likely to endorse contextual explanations (Study 1 $M = 3.94$, $SD = 0.61$; Study 2 $M = 3.54$, $SD = 0.64$) of economic inequality than dispositional explanations (Study 1 $M = 3.68$, $SD = 0.85$; Study 2 $M = 3.44$, $SD = 0.79$). To create a measure of contextual explanations, we reverse scored the dispositional items and summed them with the contextual items to create the composite contextual explanations variable (Study 1 $\alpha = .80$; Study 2 $\alpha = .76$).²

Subjective SES. Participants were given the MacArthur Scale of subjective SES (e.g., Adler et al., 2000). The measure consists of a drawing of a ladder with 10 rungs representing

¹ To determine whether the graph of decreasing economic disparity reflected favorably on lower class people, indicating self-serving motives had no impact on their judgments of this economic trend, a separate sample of 64 participants judged the graphs in Studies 1 and 2. Participants answered two questions ("How favorable is the trend in this graph towards poorer [wealthier] people in the United States?" and "How good do you think a poorer [wealthier] person would feel about themselves after viewing this graph?") on a 7-point Likert scale (1 = not at all, 7 = very; poor $\alpha = .88$; wealthy $\alpha = .94$). The 2 (graph) \times 2 (wealth) analysis of variance yielded a significant interaction, $F(1, 62) = 100.23$, $p < .001$. Participants judged the graph displaying increasing economic inequality, used in Study 1, as being more favorable to wealthier people ($M = 6.36$) than to poorer people ($M = 1.75$). In contrast, Study 2's graph showed the reverse (wealthy $M = 2.77$; poor $M = 3.75$). A follow-up test also revealed that poorer people were judged more favorably in the Study 2 graph than in the Study 1 graph, $t(62) = -6.10$, $p < .001$, suggesting that the graph of decreasing economic inequality did reflect more favorably on lower class people.

² Principal components factor analysis with a varimax rotation was used to determine the underlying factor structure. Two factors were extracted representing dispositional (e.g., hard work, effort, ability and talent) and contextual explanations (e.g., economic structure of society, inheritance) for economic disparity. The eigenvalues for the dispositional (4.2) and contextual (2.3) factors were both above 1. All items had factor loadings on their respective factor of .50 or higher, whereas factor loadings for the opposing factor did not exceed .30.

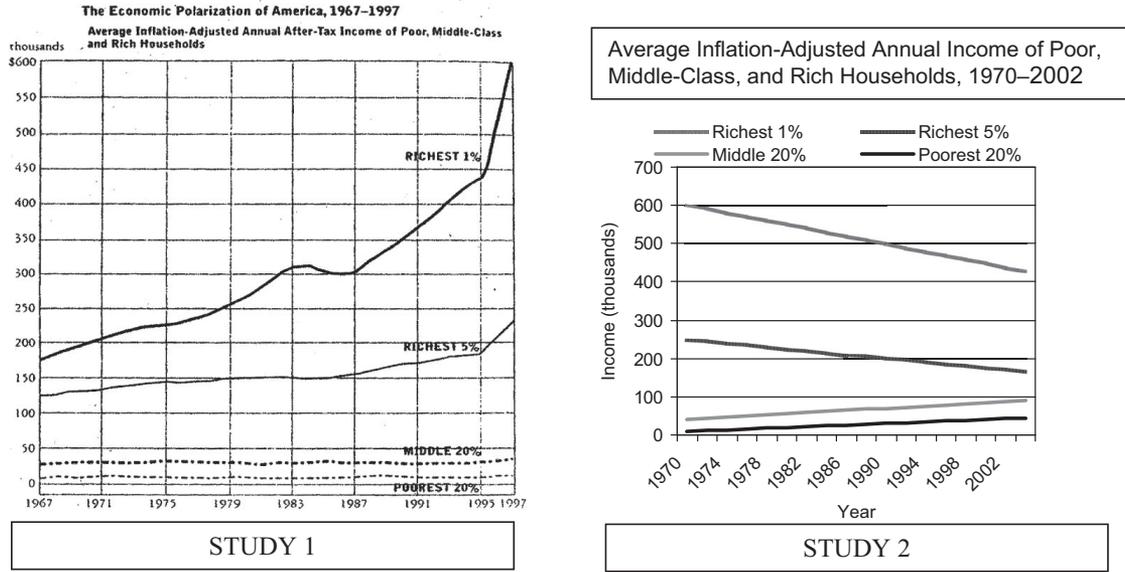


Figure 1. The left panel is from “The Nation Indicators,” D. Henwood, 1999, *The Nation*, 268, 10. Copyright 1999 by The Nation. Reprinted, with permission, from the March 29, 1999, issue of *The Nation* magazine. For subscription information, call 1-800-333-8536. Portions of each week’s *The Nation* magazine can be accessed at <http://www.thenation.com>. Stimulus graphs displaying rising (Study 1) and falling (Study 2) economic inequality in society.

people with different levels of education, income, and occupation status. Participants were instructed to place a large X on the rung where they feel they stand relative to the students at their university. Thus, this ladder assessed personal placement within the participant’s own local community. Each rung of the ladder was given a number between 1 and 10, with higher numbers indicating higher placement on the ladder. Means and standard deviations for subjective SES in Studies 1 and 2 are presented in Table 1.

Objective SES. Parental education was coded into three categories: (a) less than high school graduate, (b) high school graduate, general education diploma, or some college, and (c) college graduation or higher. Participants provided classifications of parental education for both parents. Following previous studies (Adler et al., 2000), yearly family household income was coded into seven categories: (a) under \$15,000, (b) \$15,001–\$25,000, (c) \$25,001–\$35,000, (d) \$35,001–\$50,000, (e) \$50,001–\$75,000, (f) \$75,001–\$100,000, and (g) over \$100,000. Parental education ratings for both parents were assigned a code number from 1 to 3, with higher numbers indicating greater educational attainment. The majority of respondents had mothers and fathers who attained an educational status of college graduation or higher. Family income was assigned a number 1 to 7, with higher numbers indicating greater household income. Family income and maternal and paternal education were standardized and then summed together to create a composite measure of overall objective SES (Study 1 $\alpha = .83$; Study 2 $\alpha = .84$).

The sense of control. To assess participants’ sense of control, we used Lachman and Weaver’s (1998) face-valid 12-item scale assessing personal mastery and perceived constraints. Example items include “I can do just about anything that I really set my

mind to” and “Whatever happens in the future mostly depends on me,” from the mastery scale, and “There is little I can do to change many of the important things in my life” and “I sometimes feel like I am being pushed around in my life,” from the constraints scale. Items were rated on a 7-point Likert scale (1 = *strongly disagree*, 7 = *strongly agree*). The totals for personal mastery and perceived constraints were summed to create composites for each measure. To create a measure of control that equally accounts for both dimensions, the perceived constraints scale was reverse scored, and both scales were standardized and summed to yield a standardized measure of sense of control (Study 1 $\alpha = .85$; Study 2 $\alpha = .87$).

Ethnicity. Ethnicity was coded with dummy variables so that European Americans were given a score of 1, whereas all other non-European Americans were given a score of 0 (Lachman & Weaver, 1998).

Political ideology. Participants rated their political orientation, ranging from liberal to conservative, on a 7-point Likert scale (1 = *very liberal*, 7 = *very conservative*).

Results

In Study 1, no participants expressed knowledge of the link between the predictor variable and the outcome variable. Three participants were excluded from the analyses due to substantial missing data, yielding a final sample of 103. In Study 2, though participants failed to express knowledge of our hypotheses, we excluded data from 6 participants who stated in the suspicion probes that they did not believe that inequality in society was decreasing. Two additional participants were also excluded because of substantial missing data, yielding a remaining sam-

ple of 86. Across all studies, gender was unrelated to all variables; thus, results are reported collapsed across gender.

Social Class and Sense of Control

We first computed correlations between subjective SES, objective SES, and our measure of the personal sense of control. As predicted by our first hypothesis, in both studies, lower subjective SES was associated with lower sense of control. Lower objective SES was also associated with lower sense of control, replicating previous research (Lachman & Weaver, 1998; see Study 1 and Study 2 in Table 2).

Social Class and Contextualist Explanations of Economic Inequality

Next, we computed intercorrelations between subjective SES and objective SES and our composite of contextual explanations of economic inequality (correlations for Studies 1 and 2 are displayed in Table 2). As predicted, lower subjective SES individuals in our samples were more likely to attribute rises or decreases in economic inequality to such contextual factors as the economic structure of society, inheritance, or political influence (or lack thereof). In contrast, contextual explanations of economic inequality were unrelated to all measures of objective SES. Subjective SES was also moderately correlated with family income and parental education, a replication of previous research (Adler et al., 2000).

Model 1: Objective SES, ethnicity, and political ideology. Our next interest was to determine whether lower subjective SES was associated with contextual explanations of economic inequality independent of objective SES, ethnicity, and political ideology. To answer this question, we conducted a hierarchical linear regression analysis with contextual explanations as an outcome variable and with objective SES, ethnicity, and political ideology (Study 2) as predictor variables. In Study 1, the model was not significant, as ethnicity and objective SES were not associated with contextual explanations and explained only 1.1% of the variance in those explanations ($F_s < 1$). In Study 2, the model was significant, $F(3, 79) = 3.25, p < .05$, explaining 11.0% of the variance in contextual explanations. As expected, in Study 2, having a liberal political orientation was significantly associated with contextual expla-

nations of economic inequality ($\beta = -.30, p < .01$). Ethnic background was not significantly associated with contextual explanations ($\beta = -.19, p < .10$), although non-European American participants tended to endorse more contextual explanations. As in Study 1, objective SES was unrelated to contextual explanations.

Model 2: Subjective SES and contextual explanations. Subjective SES was added in Model 2. In Study 1, though the model was not significant, $F(3, 99) = 2.54, p = .06$, adding subjective SES explained 6.1% additional variance in contextual explanations above and beyond the variance explained by ethnicity and objective SES, $F(1, 99) = 6.48, p < .05, \beta = -.29$. In Study 2, the model was significant, $F(4, 78) = 3.98, p < .01$, and explained 6.0% additional variance in contextual explanations above and beyond the variance explained by Model 1, $F(1, 78) = 5.60, p < .05$. Subjective SES ($\beta = -.29, p < .05$) and liberal orientation ($\beta = -.25, p < .01$) were associated with contextual explanations. The results indicate that subjective SES is associated with endorsing contextual explanations for rises or decreases in economic inequality, independent of objective SES, even after controlling for the ethnic background and political orientation of participants.

The Sense of Control Mediates the Relation Between Subjective SES and Explanations of Economic Inequality

Finally, we predicted that the sense of control would mediate the relation between lower subjective SES and contextual explanations of economic inequality. To test this hypothesis, we conducted a mediational analysis with sense of control as a mediator of the relation between subjective SES and contextual explanations (Baron & Kenny, 1986). We controlled for ethnicity and political orientation (Study 2) in our mediational model to determine whether the sense of control mediates SES-based explanations independent of these factors. In both studies, the paths from subjective SES to the sense of control (Study 1 $\beta = .27$), $t(101) = 2.79, p < .01$; (Study 2 $\beta = .38$), $t(80) = 3.69, p < .01$, and from the sense of control to contextual explanations (Study 1 $\beta = -.39$), $t(101) = -4.03, p < .01$; (Study 2 $\beta = -.27$), $t(80) = -2.59, p < .05$, were significant. The significant relation between subjective SES and contextual explanations (Study 1 $\beta = -.27$), $t(101) = -2.72, p < .01$; (Study 2 $\beta = -.24$), $t(80) = -2.34$,

Table 2
Correlations Between Measures of Subjective SES, Objective SES, Sense of Control, and Contextual Explanations for Studies 1 Through 3

Variable	Study 1: Increasing inequality					Study 2: Decreasing inequality					Study 3: Social outcomes			
	CE	FI	PE	ME	SS	CE	FI	PE	ME	SS	CE	FI	E	SS
Contextual explanation	—					—					—			
Family income	-.06	—				-.12	—				-.18*	—		
Paternal education	-.12	.53*	—			.02	.56*	—						
Maternal education	-.07	.54*	.81*	—		-.08	.60*	.73*	—					
Participant education											.02	.27*	—	
Subjective SES	-.26*	.59*	.33*	.35*	—	-.27*	.59*	.56*	.60*	—	-.22*	.39*	.13*	—
Sense of control	-.42*	.25*	.22*	.19**	.32*	-.37*	.31*	.17	.18**	.40*	-.36*	.22*	.09	.28*

Note. SES = socioeconomic status; CE = contextual explanation; FI = family income; PE = paternal education; ME = maternal education; SS = subjective SES; E = participant education.

* $p < .05$. ** $p < .10$.

$p < .05$, was reduced when accounting for the mediator (Study 1 $\beta = -.17$), $t(100) = -1.73$, $p = .09$; (Study 2 $\beta = -.13$), $t(80) = -1.27$, *ns*. The indirect effect of lower subjective SES on contextual explanations through the sense of control was significant (Study 1 Sobel $z = 2.29$, $p < .05$; Study 2 Sobel $z = 2.12$, $p < .05$).

We also determined whether the sense of control explained the relation between subjective SES and contextual explanations independent of objective SES. The results of this model are displayed in Figure 2. The paths from subjective SES to the sense of control, Study 1 $t(101) = 2.34$, $p < .05$; Study 2 $t(80) = 2.90$, $p < .01$, and from the sense of control to contextual explanations, Study 1 $t(101) = -3.97$, $p < .01$; Study 2 $t(79) = -2.48$, $p < .05$, were significant. The significant relation between subjective SES and contextual explanations, Study 1 $t(101) = -2.55$, $p < .05$; Study 2 $t(80) = -2.70$, $p < .01$, was reduced when accounting for the mediator, Study 1 $t(100) = -1.75$, $p = .08$; Study 2 $t(79) = -1.89$, $p = .06$. The indirect effect was also significant (Study 1 Sobel $z = 2.02$, $p < .05$; Study 2 Sobel $z = 2.01$, $p < .05$). As predicted, the sense of control partially mediates the tendency of lower subjective SES individuals to explain economic inequality in society with contextual factors.

Discussion

In Studies 1 and 2, lower subjective SES participants reported lower levels of personal control and were more likely to endorse contextual explanations (e.g., political influence, discrimination) of increasing (Study 1) and decreasing (Study 2) economic inequality. Moreover, differences in the sense of control mediated the relation between subjective SES and contextual explanations of economic inequality. It is important to note that these results held when controlling for ethnic identity and political orientation and were consistent regardless of whether economic inequality was shown to be increasing or decreasing. Finally, in both studies, the relation between lower subjective SES and contextual explanations held after accounting for objective SES, replicating previous work (e.g., Adler et al., 2000; Cohen et al., 2008). This latter result suggests that subjective SES is associated with contextual explanations independent of objective SES.

Study 3: Explanations of Positive and Negative Social Outcomes in a Nationwide Sample

In Study 3, we surveyed participants in a nationwide sample to determine whether the relation between lower social class and contextual explanations would generalize to an array of positive and negative social outcomes.

Method

Participants

A nationwide sample of 481 participants was recruited from an e-mail list maintained by a private West Coast university. Participants completed an online questionnaire in which they provided their explanations for the causes of a variety of social outcomes. In exchange for completing the study, participants received credit toward a \$50 prize drawing. In this nationwide sample, 61% of participants were female and 39% were male. Ethnicity was divided into 76.8% European American, 15.6% Asian American, 7.1% African American, Latino, or Native American, and 0.5% other. Participants' ages ranged from 18 years to 74 years ($M = 33.53$; see Table 1 for demographic data).

Measures

Explanations of positive and negative social outcomes. To measure individuals' orientations toward contextual explanations, we created a multiple-item measure in which participants were asked to provide explanations for a series of positive and negative social outcomes. Items were selected to represent a range of social domains. The items were "Getting into medical school," "Having low income," "Receiving proper healthcare," "Contracting the HIV virus," "Publishing a book," "Failing a class at school," "Being obese," and "Being laid-off at work." Participants were asked to consider whether the people influenced by each of these events are "responsible for their own outcomes, or are the events caused by external forces outside of individual control?" Participants rated each of the eight items on a 7-point Likert scale (1 = *individual primarily responsible*, 7 = *outside forces primarily responsible*). Items varied in terms of how participants appraised their causes, with "Failing a class at school" judged as most

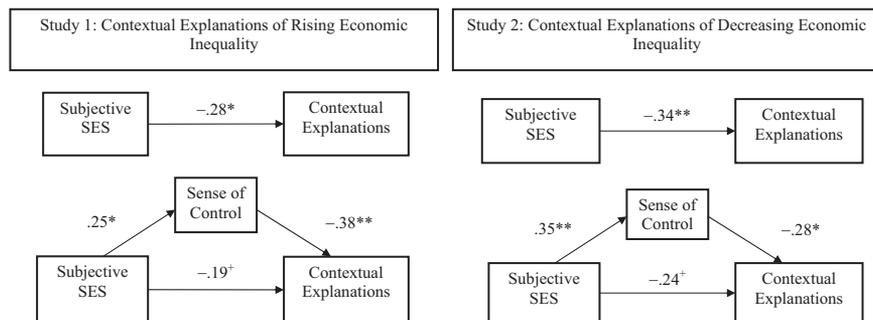


Figure 2. Model of the relation between subjective socioeconomic status (SES) and contextual explanations of increasing (Study 1) and decreasing (Study 2) economic inequality mediated by sense of control, with objective SES controlled. Significance of standardized regression coefficients is indicated; * $p < .05$; ** $p < .01$; † $p < .10$.

dispositionally caused ($M = 2.09$) and "Being laid off at work" judged as most contextually caused ($M = 4.55$). The items were summed to create a composite measure of contextual explanations ($M = 3.05$, $SD = 0.67$; $\alpha = .64$).

Social class, sense of control, and political orientation. To assess subjective SES in the nationwide sample, participants were asked to rate their standing on the 10-rung ladder relative to other people in the United States. Measures of sense of control ($\alpha = .89$) and political orientation were identical to those used in Study 2. Objective SES was assessed as in Studies 1 and 2, but in the present study, participants reported their own educational attainment and family income.

Results

Thirty-seven participants were excluded from the analyses because they failed to participate in the study beyond accessing the website on which the study is located or because they were under the age of 18 years. Analyses were conducted with the remaining sample ($n = 444$).

Social Class and Sense of Control

As in previous studies, the sense of control was associated with both subjective and objective SES (see Table 2).

Social Class and Contextualist Explanations of Social Outcomes

As in the previous studies, lower subjective SES was associated with endorsing contextual explanations for broad positive and negative social outcomes. Moreover, there were significant correlations between objective SES and contextual explanations. More specifically, income was significantly associated with endorsing contextual explanations, whereas educational attainment was not. Study 3 data listed in Table 2 displays these correlations. Analyses examining the relation between each individual social outcome and SES measures did not differ in direction from the composite measure.³

Model 1: Objective SES and political ideology. Once again, we ascertained whether the association between subjective SES and contextual explanations was independent of objective SES and political ideology. The first model with objective SES and political ideology as predictors was significant, $F(2, 416) = 5.51$, $p < .01$, and explained 2.6% of the variance in contextual explanations. Both lower objective SES ($\beta = -.10$, $p < .05$) and liberal political orientation ($\beta = -.13$, $p < .01$) were associated with contextual explanations.

Model 2: Subjective SES and contextual explanations. The model adding subjective SES was significant, $F(3, 415) = 10.36$, $p < .01$, and explained 4.4% additional variance over and above the variance explained in Model 1 $F(1, 415) = 19.57$, $p < .01$. Both lower subjective SES ($\beta = -.22$, $p < .01$) and liberal orientation ($\beta = -.12$, $p < .05$) were associated with contextual explanations, replicating our previous results. Furthermore, when subjective SES and objective SES were both added to the model, the relation between objective SES and contextual explanations was nonsignificant ($\beta = -.04$, *ns*), indicating that subjective SES accounts for the relation between objective SES and contextual

explanations. The results suggest that subjective SES is associated with contextual explanations for broad social outcomes independent of objective SES and political ideology.

The Sense of Control Mediates the Relation Between Subjective SES and Contextual Explanations

As shown in Figure 3, our mediational results, controlling for political orientation and objective SES, replicated those from Studies 1 and 2. The paths from subjective SES to the sense of control, $t(428) = 5.12$, $p < .01$, and from the sense of control to contextual explanations, $t(428) = -7.19$, $p < .01$, were both significant. The significant relation between subjective SES and contextual explanations, $t(428) = -4.26$, $p < .01$, was reduced but remained significant when accounting for the mediator, $t(427) = -2.63$, $p < .05$. The indirect effect through the sense of control was significant (Sobel $z = 4.17$, $p < .05$).

Discussion

Study 3 showed that in a diverse, nationwide sample, lower subjective SES was significantly associated with contextual explanations of a broad range of positive and negative social outcomes. Moreover, this class-based pattern of explanation held after controlling for political views and was once again partially mediated by the sense of control. Objective SES was significantly associated with contextual explanations, but objective SES added no additional explanatory power after accounting for the relation between subjective SES and contextual explanations (for similar results, see Adler et al., 2000; Singh-Manoux et al., 2003).

Study 4: The Sense of Control Moderates the Relation Between Subjective SES and Contextual Explanations of Emotions

In our final study, we extend our initial studies of social class and contextualist explanations to the domain of emotion perception. Here, participants judged the emotions of a focal individual who displayed facial expressions that were either the same as or different from the emotions expressed by four other individuals in the background (Masuda et al., 2008). Additionally, to further support the claim that the sense of control accounts for the influences of subjective SES on contextual explanations, in Study 4 we manipulated the sense of control (c.f., Anderson & Galinsky, 2006). We predicted that lower subjective SES participants in a state of low control would tend to be influenced by background emotions more than would upper subjective SES individuals in a state of low control and that this relation would be attenuated for participants in a high-control state.

³ Lower subjective SES was associated with contextual explanations for getting into medical school, $r(432) = -.13$, $p < .01$, receiving proper healthcare, $r(432) = -.16$, $p < .01$, being obese, $r(430) = -.12$, $p < .05$, being laid off at work, $r(431) = -.20$, $p < .01$, and having low income, $r(427) = -.13$, $p < .01$. Lower subjective SES was also associated with contextual explanations for contracting the HIV virus, $r(431) = -.08$, failing a class $r(430) = -.07$, and publishing a book, $r(432) = -.05$, though the relation of subjective SES to these variables was not significant ($ps > .10$).

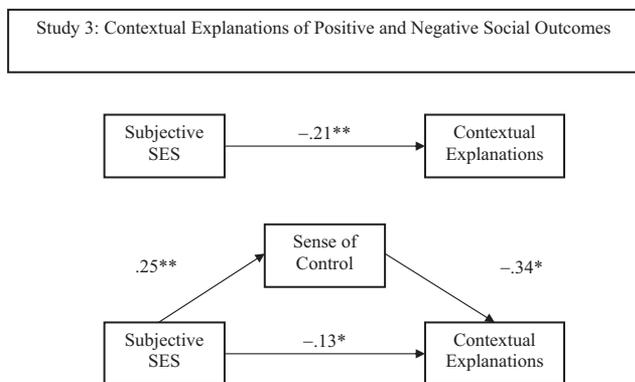


Figure 3. Model of the relation between subjective socioeconomic status (SES) and contextual explanations of positive and negative social outcomes mediated by sense of control, with objective SES and political orientation (Study 3) controlled. Significance of standardized regression coefficients is indicated; * $p < .05$; ** $p < .01$.

Method

Participants

125 undergraduates from a major public university participated in exchange for course credit. Demographic information for Study 4 is displayed in Table 1. The majority of the sample was Asian American (56.0%), followed by European American (27.2%), multiethnic (9.6%), and African American, Latino, or Native American (7.2%). The majority of participants were female (63.2% female and 36.8% male).

Procedure

Participants arrived in groups of 6 or fewer and were directed into one of six partitioned computer booths. Participants were then administered a personal sense of control manipulation in which they typed out their thoughts regarding a situation in which they either experienced little or no control or a great deal of control. Following this manipulation, participants were instructed that they would be making emotion ratings for people displaying different facial expressions. Upon completing these ratings, participants filled out several demographic measures, and they were thanked, debriefed, and excused.

Materials

The sense of control manipulation. Participants were asked to engage in a writing task in which they wrote about several topics. In the first topic, participants wrote about a building on campus for 4 min. Following this task, participants were randomly assigned to one of two personal sense of control conditions in which they were asked to write about a situation in which they either had “a great deal of control” or “very little control.” The instructions were as follows: “Please recall a particular incident in which you had a great deal of control (very little control). By control, we mean a situation in which you had complete control of what happened to you and other people around you. Please describe this situation in which you had a great deal of control (very little control), including what happened, how you felt, etc.” Participants wrote about

this situation for 4 min. In the analysis, the sense of control manipulation was dummy coded with 0, indicating the low-control condition.

Emotion ratings of people in context. Participants rated the emotions of a focal person while four other people in the background displayed either the same or different facial expressions. The procedure and stimuli were adapted from past work (Masuda et al., 2008). Participants were exposed to five cartoon individuals (four people in the background, one person in the foreground) displaying different facial expressions. The person in the foreground displayed one of three emotion expressions (angry, happy, or sad). Each person in the background displayed identical facial expressions (angry, happy, sad, or neutral) during each trial, but these expressions varied from the focal person’s expressions. All expressions were of moderate intensity. Participants judged the extent that the focal person was displaying anger, sadness, or happiness on a 10-point Likert scale (1 = *not at all*, 10 = *very much*). In total, the 12 stimuli (3 focal person facial expressions with 4 sets of background facial expressions) were rated for each of the focal emotions (angry, happy, or sad), for a total of 36 emotion ratings.

To create an index of contextual influence on emotion ratings, we computed the standard deviation of emotion ratings for all the trials in which participants rated the corresponding emotion expressed by the focal person ($M = 1.47$, $SD = 0.88$). Higher scores on this index indicated that participants shifted their emotion ratings based on changes in the expressions of the background people, whereas lower scores indicated that participants’ emotion ratings did not fluctuate with shifts in the expressions of background faces.

Social class, ethnicity, and sense of control. Subjective SES, ethnicity, and personal sense of control (used as a manipulation check) were assessed at the end of the experiment, as in the previous studies. Family income was assessed with the following categories: (a) <\$15,000, (b) \$15,000–\$35,000, (c) \$35,000–\$75,000, (d) \$75,000–\$100,000, (e) \$100,000–\$150,000, and (f) >\$150,000. As in the previous studies, objective SES was computed with education and income.

Results

Manipulation of the Personal Sense of Control

To determine whether the sense of control manipulation influenced participant ratings of their own personal sense of control, we subjected sense of control scores to a single factor analysis of covariance (ANCOVA) with the control manipulation as the between-subjects factor. In this analysis, we controlled for subjective, $r(124) = .26$, $p < .001$, and objective, $r(124) = .47$, $p < .001$, SES because both measures were related to self-reported sense of control. The analysis yielded a significant effect for control, as participants in the high-control condition ($M = 0.15$, $SD = 0.86$) reported a higher sense of control than did participants in the low-control condition ($M = -0.15$, $SD = 0.67$), $F(1, 121) = 4.55$, $p < .05$. Subjective SES was unchanged by the control manipulation, showing a nonsignificant higher mean in the low-control condition ($M = 6.63$), relative to the high-control ($M = 6.06$) condition, $t(123) = 1.76$, $p = .09$. In addition, subjective SES was moderately correlated with objective income, $r(123) = .39$, $p <$

.01, mother education, $r(123) = .36, p < .01$, and father education, $r(123) = .39, p < .01$.

Social Class, Sense of Control, and Contextual Judgments of Emotional Facial Expressions

For our analysis of the influence of contextual information on judgments of emotion, we expected that compared with upper subjective SES individuals, the emotion ratings of lower subjective SES individuals would fluctuate more according to shifts in the emotions expressed by the people in the background. We also expected this pattern to be moderated by the personal sense of control, such that low-control participants with lower subjective SES would show greater fluctuation in their emotion ratings in comparison with upper subjective SES participants, but that this pattern would be attenuated in the high-control condition. As in the previous studies, we controlled for ethnicity and objective SES in our analysis to determine whether the above pattern of results would emerge after accounting for these factors.

To test our predictions, we subjected our contextual influence on emotion index to a linear regression analysis. In this analysis, we first entered ethnicity and objective SES. We then entered subjective SES, the control manipulation, and the interaction between these two variables. The analysis yielded a significant subjective SES effect ($\beta = -.37, t(121) = -2.32, p < .05$), suggesting that the emotion ratings of lower subjective SES participants fluctuated more along with changes in the expressions of the background individuals. Objective SES, though not significantly associated with greater variability in emotion ratings ($\beta = -.20, t(121) = -1.90, p = .06$), showing a pattern suggesting that in the present study, lower objective SES covaries with greater fluctuations in emotion ratings based on the context. However, these results were qualified by a significant interaction between subjective SES and the sense of control manipulation ($\beta = .38, t(121) = 2.40, p < .05$). No other effects were significant.

As predicted, the observed relation between lower subjective SES and greater fluctuations in emotion ratings was robust in the low-control condition ($\beta = -.33, t(119) = -2.29, p < .05$), but was attenuated in the high-control condition ($\beta = .08, t(119) = 0.80, ns$). These results indicate that lower subjective SES individuals are influenced by contextual information when rating others' emotions in a low state of personal control but are more likely to ignore such contextual information in judging emotion in a high state of personal control.

Discussion

In Study 4, lower social class participants depended on contextual information to rate the emotions of a target individual, but only when feeling a low sense of control. When induced to feel an elevated sense of control, their emotion judgments resembled those of upper class individuals in being less swayed by contextual information. As in the previous three studies, subjective SES impacted contextual explanations independent of ethnicity and objective SES.

General Discussion

Social class is defined by both objective and subjective factors. Objectively, those in the upper class strata enjoy more resource-

and opportunity-rich environments, whereas those in lower class strata face more resource- and opportunity-impooverished environments. Subjectively, social class influences one's perceptions of rank vis-à-vis others, and as a result, impinges on personal freedoms and choice. Guided by the literatures on social class and the sense of control, we expected that lower class individuals would report a lower sense of personal control, that lower class individuals would explain social outcomes across various domains in terms of contextual factors, and that the sense of control would account for the relation between social class and explanation.

Across four studies, lower subjective SES individuals were more likely to explain a broad range of social events related to economic wealth, broad social outcomes, and emotions in terms of contextual factors. Moreover, across our studies with university and national samples, mediation (Studies 1–3) and moderation (Study 4) analyses confirmed that the sense of control explains this class-based pattern of explanation. Finally, ancillary analyses ruled out several alternative explanations. Lower class individuals' tendency to endorse contextual explanations was independent of three variables known to impact social explanations: self-serving motives, political ideology, and ethnicity.

The Independence of Objective and Subjective SES

Our results provide one of the most comprehensive studies to date of the independence of objective and subjective indices of SES. Across studies, lower subjective SES was more strongly and consistently related to contextual explanations in comparison with objective SES. This result mirrors previous research linking lower subjective SES to negative health outcomes (e.g., Adler et al., 2000; Cohen et al., 2008; Goodman et al., 2001). Moreover, the results suggest that the construal of one's rank in the social hierarchy, based on local comparison factors, accounts for the influence of social class on social explanation.

It is important to note that lower objective SES was unrelated to contextual explanations in two of the four studies. This pattern of results is consistent with research examining the effects of subjective and objective SES on negative health outcomes, such as self-rated health and susceptibility to a common cold virus (Adler et al., 2000; Cohen et al., 2008). Moreover, one of our studies suggests that subjective SES accounts for the relation between objective SES and contextual explanations (Study 3). This further supports the notion that subjective SES is a stronger and more consistent predictor of social explanation than is objective SES.

This pattern of results raises an important question: Why might subjective SES be a more potent predictor of social cognitive tendencies and health outcomes than objective SES? We suggest that the ladder measure of social class more clearly brings into focus individuals' construals of their hierarchical position vis-à-vis others and, by implication, their degree of control and dependence. The results of Study 4 provide evidence in favor of this interpretation: Manipulating the sense of control moderated lower subjective SES individuals' tendency to explain the emotions of others in terms of the context. When lower subjective SES individuals were manipulated to feel a lower sense of control, their emotion perceptions were more influenced by the surrounding context. However, when experiencing a higher sense of control, this tendency was attenuated. Building on the current findings, future

studies of social class should incorporate subjective measures of SES to further test their unique explanatory power.

Social Class and Contextualism

The results support our hypothesis that lower class individuals explain social and personal outcomes in terms of contextual influences and that the sense of control explains this relation. This class-related contextualism tendency is likely to extend to other domains of social cognition, and these possibilities are worthy of empirical investigation.

In terms of behaviors associated with social class, the current work aligns with recent work suggesting that lower class people display more engagement-related nonverbal behaviors (e.g., head nods, laughs) in interactions with strangers, relative to upper class people (Kraus & Keltner, 2009). Another important area of inquiry is the study of emotions. On the basis of these results, we would also expect lower class individuals to be more attentive to the emotions of others during social interactions, particularly if such emotions are threatening or hostile. The present study also illuminates why upper class individuals might prioritize individual rights as a realm of moral judgment to the exclusion of other realms, such as the purity of the action (Haidt, Koller, & Dias, 1993). As studies of social class and social cognition move forward, the present research strongly suggests this line of inquiry will benefit from consideration of control as a mediator.

Limitations of the Present Research

Alongside what has been learned from the present studies on social class, sense of control, and explanation, it is important to bear in mind their limitations. It is most important to note that our university student samples (Studies 1, 2, and 4) were relatively small and disproportionately from upper class backgrounds. As a result, it will be important to generalize to other communities. More stringent tests of our hypotheses should be conducted in more homogeneous communities both rich (e.g., elite preparatory schools) and poor (urban housing developments for the poor). To the extent that subjective SES still predicts explanations in these settings, in which the objective economic conditions of living are so robust, one gains greater confidence in subjective SES as a proximal determinant of outcome and explanation.

It would also be interesting to test the present hypotheses in other cultures, in particular, those in which economic inequality is not as pronounced. Evidence indicates that economic disparities between rich and poor may be at a historical high in the United States (Phillips, 2002), which suggests that the subjective experience of social class has an objective basis for being so powerful in shaping social outcomes and explanations of social outcomes. Would similar effects of subjective SES be observed in cultures with lesser disparities between rich and poor?

Finally, one might critique our conceptual claim that social class influences contextual judgments through the sense of control. The alternative possibility is that subjective SES and sense of control are actually facets of a single construct. Argument and evidence counter this critique. Conceptually, we consider subjective SES to be an identity-based variable and consider sense of control to be a cultural trait variable (Cohen, 2007). Elsewhere, important distinctions have been drawn between perceived rank and sense of

control (Keltner et al., 2003). Perhaps more convincingly, empirical findings from the present investigation make the case that subjective SES and sense of control are not the same construct. In Study 4, the sense of control manipulation did not lead to subsequent rises in subjective SES that would have been expected if they are indeed the same construct. In addition, across two of our studies, the measures of subjective SES and sense of control differentially predicted a related measure: the sense of power (see correlations reported in introduction). These results suggest that subjective SES and the sense of control are related but independent constructs, with unique predictive power.

Social Class and Consequences of Contextualism

The present studies point to other lines of inquiry in the study of social class. For example, in terms of development, studying class-based differences in the sense of control in children may inform the study of important social outcomes that disproportionately affect lower class children, such as poor health and emotional distress. This kind of research could inform interventions that protect lower class individuals from feeling helpless in their social environments (e.g., Cicchetti, Rogosch, & Toth, 2006; Davies, Winter, & Cicchetti, 2006).

Finally, with regard to social policy decision making, recent research suggests that disadvantaged groups (i.e., lower social class) are motivated to justify current social arrangements as fair and legitimate (Jost, Pelham, & Carvallo, 2002; Jost, Pelham, Sheldon, & Sullivan, 2003). Based on our own work, lower class individuals' contextualist focus could potentially lead to justifications of social inequality and, in turn, could enhance or discourage social mobility. Thus, future research examining the role of contextual explanation in social class patterns of political policy endorsement is warranted.

Conclusion

The present research has shown that lower social class is associated with a contextualist orientation toward understanding personal and social outcomes and that this explanatory tendency is linked to viewing the world as less controllable. In this way, social class differences lead to differences in the way individuals construe and interpret their social environments and the events that impact their lives.

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