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Americans overestimate social class mobility

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HIGHLIGHTS

- Americans overestimate the levels of actual class mobility in society.
- Mobility overestimates are larger for younger and higher subjective class people.
- Information and motivation contribute to mobility beliefs.

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ABSTRACT

In this research we examine estimates of American social class mobility—the ability to move up or down in education and income status. Across studies, overestimates of class mobility were large and particularly likely among younger participants and those higher in subjective social class—both measured (Studies 1–3) and manipulated (Study 4). Class mobility overestimates were independent of general estimation errors (Study 3) and persisted after accounting for knowledge of class mobility assessed in terms of educational attainment and self-ratings. Experiments revealed that mobility overestimates were shaped by exposure to information about the genetic determinants of social class—a faux science article suggesting genetic constraints to economic advancement increased accuracy in class mobility estimates (Study 2)—and motivated by needs to protect the self—heightening the self-relevance of class mobility increased overestimates (Study 3). Discussion focused on both the costs and benefits of overestimates of class mobility for individuals and society.

> "What I offer… is a set of concrete, practical proposals to speed up growth, strengthen the middle class, and build new ladders of opportunity into the middle class."—President Barack Obama (2014), State of the Union.

Economic inequality is among the most pressing societal problems impacting the health and well-being of Americans: inequality reduces well-being—Americans report elevated happiness in years where economic inequality is lower compared to years when it is higher (Oishi, Kesebir, & Diener, 2011). As well, roughly 70% of studies examining the health impacts of economic inequality find that societal health worsens as economic inequality intensifies (Wilkinson & Pickett, 2006). When economic inequality deepens, society suffers. These trends are the likely reason why President Barack Obama made reducing economic inequality through increasing social class mobility a primary theme in his 2014 State of the Union Address. Whether or not economic policy changes take hold is likely to depend on a number of factors, among them the extent that Americans recognize, and are aware of, the levels of actual social class mobility in society. This research was designed to examine potential inaccuracies in judgments of class mobility.

Across four studies, we compared estimates of American social class mobility to actual available data. We hypothesized that Americans would overestimate levels of income mobility and educational access in the United States. We predicted further that these estimates would be heightened by a lack of awareness of the factors that influence economic opportunity in society, and motivated by a desire to protect the self.

Class mobility, equality of opportunity, and the American Dream

The United States is faced with record levels of income inequality and one of the lowest rates of actual social mobility among industrial nations (Burkhauser, Feng, Jenkins, & Larrimore, 2009; Fiske & Markus, 2012; Piketty & Saez, 2001). Despite these constraints on economic opportunities, Americans place significant hope on the American Dream—the promise that individuals, from any sector of society, have an equal opportunity to become better educated, earn more money, and obtain whatever job they desire. These beliefs in social class mobility are widespread, frequently referred to during political

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speeches (Obama, 2014), evoked in contemporary popular fiction and cinema (Fitzgerald, 1925), and are a core right referred to in historical government documents (i.e., the Bill of Rights).

The disconnect between actual economic conditions on the one hand and beliefs in the American Dream on the other suggests that Americans may be unaware of the actual levels of social class mobility in society. Several lines of research anticipate this pattern of inaccuracy: for instance, when a large sample of Americans was asked to guess the levels of wealth inequality in the United States, individuals underestimated the magnitude of economic inequality by a wide margin (Norton & Ariely, 2011). Americans also display low awareness of how changes in economic conditions will impact their lives: when asked to forecast how an economic windfall will change their lives, individuals routinely overestimate the extent that these economic changes will increase their happiness and well-being (e.g., Wilson & Gilbert, 2005). These data suggest that Americans are unaware of the actual economic structure of society and of how changes in individual economic conditions shape their own life outcomes, and provide the starting point for our first hypothesis: Americans will overestimate actual levels of social class mobility in society to a substantial degree (Hypothesis I).

Informational and motivational aspects of class mobility beliefs

In general, individuals have many blind spots across diverse domains of social life: people become surprisingly unaware of unique objects (i.e., a dancing gorilla) if asked to focus on a separate visual task (e.g., Simons & Jensen, 2009); individuals, primarily from Western cultures, routinely ignore statistical probabilities and claim that they are more moral, more intelligent, and less error-prone than others (e.g., Pronin, Gilovich, & Ross, 2004); even memories for particularly noteworthy events (e.g., the events of September 11th, 2001) are fraught with inaccuracies that are driven by strong emotional experiences (Hirst et al., 2009). Research indicates that errors in social perception are driven by both informational factors—such as the lack of awareness of statistical information relevant to actual mobility trends—and motivational factors—the desire to believe that society is meritocratic (e.g., Greenwald & Banaji, 1995). Here we examine both sources of error in class mobility beliefs.

Inaccuracy in social class mobility arises, in part, because individuals have a lack of information about actual class mobility in society beyond their own personal anecdotes (for additional research on inaccuracy in social class lay theories, see Varnum, 2013). Based on this logic, exposure to information about the determinants of social class would likely reduce overestimates of class mobility. In particular, we predict for our second hypothesis, that calling attention to genetic factors that influence economic advancement will constrain beliefs in class mobility (Hypothesis II).

We predict that genetic explanations for social class—explanations suggesting that social class is determined by stable and internal genetic factors (Kraus & Keltner, 2013)—are likely to reduce overestimates of class mobility for two reasons: first, genetic explanations highlight the possibility that some individuals possess advantaged (inferior) genes that enhance (reduce) the capacity to ascend the economic hierarchy. Thus, genetic explanations provide a concrete reason for why class mobility may not be possible for all Americans. Though research has not tested relationships between genetic explanations and class mobility specifically, genetic explanations of social groups have constrained other beliefs related to social change: For example, increased race-based essentialist beliefs (i.e., beliefs that racial categories are biologically determined) were associated with decreased motivation to change racial inequality in society (Williams & Eberhardt, 2008).

Second, genetic explanations are likely to be persuasive: a large and consistent literature indicates that Americans tend to use internal explanations (e.g., traits and genes) for social events and behaviors more than external explanations (Jellison & Green, 1981; Morris & Peng, 1994; Nisbett & Ross, 1980)—making genetic explanations particularly like to shape mobility beliefs. As well, decades of gene research, primarily conducted on twins, suggests that there are genetic components to aspects of social class that include educational attainment and occupation status (e.g., Baker, Treloar, Reynolds, Heath, & Martin, 1996; Rietveld et al., 2013; Tambs, Sundet, Magnus, & Berg, 1989)—thereby affording genetic explanations for class mobility increased plausibility in the minds of Americans. For these reasons, we expect that exposing participants to genetic explanations of social class will reduce estimates of class mobility, relative to exposure to non-genetic explanations.

In addition to informational errors, overestimates of social class mobility are driven by motivated social cognition—that is, individuals endorse specific personal or political attitudes because they satisfy basic psychological needs (e.g., Jost, Glaser, Kruglanski, & Sulloway, 2003). Americans benefit from overestimates of social class mobility because they bolster widely held American ideals of meritocracy and equality of opportunity (Durkheim, 1933; Fiske & Markus, 2012; Weber, 1930). Thus, overestimates of class mobility satisfy the need to believe that the societal status of the self and others is determined fairly and justly. Class mobility overestimates may also increase the tendency for individuals to work harder and strive for economic advancement—even when they are currently lower in the social hierarchy. In this fashion, overestimates of class mobility can be both beneficial and adaptive for one's life outcomes (c.f., Anderson, Brion, Moore, & Kennedy, 2012; Johnson, Blumstein, Fowler, & Haselton, 2013).

Our motivated perspective suggests that class mobility overestimates are likely driven, at least in part, by motivations to protect the self—especially with regard to economic outcomes. Specifically, we predict, for our third hypothesis, that motivations to see the self positively—including with respect to the possibility for future economic advancement and opportunity—will enhance overestimates of class mobility (Hypothesis III).

Research on self-enhancement provides indirect empirical support for our third hypothesis: in achievement domains, where people are concerned about the evaluations of others, individuals are likely to engage in self-protection by seeing the self more positively, as well as to seek out enhancing appraisals from others (James, 1890; Sedikides & Gregg, 2008). Research on the better-than-average effect—wherein individuals consistently evaluate their traits and behaviors as above average (Alicke, 1985; Dunning, Meyerowitz, & Holzberg, 1989; Festinger, 1954)—has a rich tradition in social psychology, and aligns with our prediction that concerns to protect the self will increase overestimates of class mobility.

Social class and estimates of class mobility

Our motivated perspective on class mobility also suggests a relationship between position in the class hierarchy and overestimates of class mobility: with respect to this relationship, research is divided on whether people at the top or bottom of the class hierarchy will be more likely to overestimate class mobility (see Brandt, 2013). It is possible that relatively lower-class individuals will overestimate class mobility more than their upper-class counterparts, because beliefs in mobility may enhance optimism about future economic success and select research supports this perspective (e.g., Jost, Banaji, & Nosek, 2004): for instance, recent evidence suggests that relatively lower-class individuals are more likely to engage in behaviors that actually promote economic mobility—Democratic members of the US Congress were more likely to sponsor legislation that decreases economic inequality in society (e.g., raising the minimum wage) if they were lower (versus higher) in average annual wealth (Kraus & Callaghan, 2014). Practically, higher levels of educational attainment might provide individuals with more exposure to information about actual social class mobility, and increase accuracy by implication, relative to lower levels.

In contrast, evidence and theory also converge on the opposite relationship between social class position and overestimates of class

mobility. Specifically, the motivation to believe that one's elevated position in society is both fairly achieved and possible for all Americans will lead individuals from relatively upper-class backgrounds to make larger overestimates of social class mobility. Several lines of research support this perspective: for instance, people with higher status are happier when they believe that positive outcomes in society are based on merit (Napier & Jost, 2008; O'Brien & Major, 2005) and high-performing members of a group are more likely to advocate dividing resources based solely on merit (Brown-Iannuzzi, Lundberg, Kay, & Payne, 2015; Messick & Sentis, 1979). As well, individuals who ranked themselves more highly in subjective social class reported a greater belief that the world is both meritocratic and that economic outcomes are fair than did their lower-class counterparts (Kraus & Keltner, 2013).

Taken together, though these lines of evidence suggest that mobility estimates will be motivated by one's position in the class hierarchy, the directionality of the relationship remains unclear. In the present research, we use correlational (Studies 1 and 3) and experimental (Study 4) approaches to explore and estimate the precise direction and strength of the relationship between measures of social class and estimates of class mobility. Moreover, it is possible that distinct components of social class will be differentially related to overestimates of class mobility (Kraus, Piff, Mendoza-Denton, Rheinschmidt, & Keltner, 2012)—with education being negatively related given its relationship to information exposure, and subjective rank perceptions of social class being positively related, given associations with meritocracy judgments in prior research (Brown-Iannuzzi et al., 2015). Because of these conditions, throughout the studies we separately examine relationships between unique facets of social class and class mobility beliefs.

The present research

We used four studies, one correlational and three experimental, to test three hypotheses related to estimates of social class mobility, and to assess the relationship between perceptions of such mobility and various individual differences. In Study 1, we measured beliefs about class mobility using an online sample of adults from the United States and compared these estimates to statistics on actual class mobility generated from analyses of the Current Population Survey (www.stateofworkingamerica.org; Mishel, Bivens, Gould, & Shierholz, 2012). In Studies 2 through 4, participants were exposed to experimental manipulations of genetic beliefs about social class (Study 2), the self-relevance of mobility estimates (Study 3), and subjective social class (Study 4). Throughout the studies we examined associations between estimates of class mobility and individual differences related to age and social class, while accounting for knowledge of economic mobility assessed by educational attainment (Studies 1–4) and self-reports of mobility knowledge (Study 3), general errors in estimation (Study 3), and individual differences related to trait optimism and political conservatism.

The present research advances our understanding of estimates of social class mobility in two primary ways: though social scientists and economists have long claimed that Americans believe in equality of opportunity (e.g., Benabou & Ok, 2001), this research is among the first, to examine the magnitude of overestimates of class mobility in relationship to real data on actual mobility and to determine the psychological causes of these overestimates. It is important to estimate the magnitude of overestimates of class mobility because large overestimates may render mobility concerns less likely to influence the agendas of policy-makers (e.g., Schwartz, 2011). Although recent research has examined meritocracy judgments (Brown-Iannuzzi et al., 2015), genetic explanations for social class (Kraus & Keltner, 2013), and estimates of economic mobility (see Davidai & Gilovich, 2015), this work is also the first to determine, in particular, the causal factors that influence inaccuracies in estimates of class mobility. Given the hypothesized wide disconnect between beliefs in mobility and actual mobility (c.f., Charles & Hurst, 2003; Keister, 2005), understanding the causal psychological processes that bias class mobility estimates has the potential to inform interventions that decrease barriers to economic advancement.

Study 1: mobility beliefs in an online sample of Americans

Study 1, compares estimates of social class mobility to available data using a large sample of online participants. We expected overestimates of class mobility to be large, and to be influenced by a lack of available information and by motivations to protect the self. A secondary focus of Study 1 was to assess the associations between individual differences in social class, age, political ideology, and optimism, and their unique associations with estimates of class mobility.

With respect to individual differences, our dual account of mobility beliefs suggests that younger individuals might be particularly likely to overestimate class mobility relative to their older counterparts. In terms of information, younger individuals' relative lack of life experience may make them less aware of barriers to class mobility. In terms of motivation, younger individuals may also be motivated to believe in enhanced class mobility and economic opportunity early on in adulthood where opportunities for advancement (e.g., education and training) are more readily available (e.g., Segerstrom, Taylor, Kemeny, & Fahey, 1998). Together, this logic suggests the prediction that younger participants will provide larger overestimates of social class mobility. We also expected social class to relate to class mobility, although we did not make specific predictions about the directionality of this relationship.

Method

Participants

We collected a large online sample of participants ($n = 751$) from Mechanical Turk to complete our mobility beliefs survey. The participants were 18 years of age or older ($M = 31.47$, $SD = 11.20$) and were all American citizens. Participants were paid $1.00 for participating in the survey, which was described as an assessment of people's personality and beliefs about society, and were debriefed about the hypotheses of the study upon completion. The survey took the participants less than 10 min to complete. All participants surveyed were included in the analyses except in specific cases where they had missing data.

Measures

Mobility beliefs

We created six questions to assess the participants' beliefs in social class mobility. For each of these items, population data exist from the years 1996–2007 on actual social class mobility in the United States (www.stateofworkingamerica.org; Mishel et al., 2012). Three of the items assessed beliefs in income mobility: participants were asked to think about 100 people during a ten-year time period from 1997–2006. The questions asked participants to assess how many of these 100 people would (1) move from the bottom 20% of income by working 1000 extra hours ($M = 36.08$, $SD = 25.24$); (2) move from the bottom 20% of income to the top 20%? ($M = 15.60$, $SD = 17.88$); and (3) move from the top 1% of income to the bottom 80%? ($M = 14.57$, $SD = 17.88$). Three educational mobility questions assessed (4) how many of a group of 100 people would move from the bottom 20% of income with some kind of college degree? ($M = 61.34$, $SD = 22.52$), (5) how many of 100 top college and university students would be from the top 20% of income families? ($M = 43.54$, $SD = 20.62$); and (6) how many of these 100 students would be from the bottom 20% of income families? ($M = 15.83$, $SD = 11.65$).

Objective and subjective social class

Based on recommendations from prior research (Kraus & Stephens, 2012; Kraus et al., 2012), we assessed social class using four indices: annual income, educational attainment, occupation status, and subjective social class. Annual income was assessed using seven categories: (1) <$15,000; (2) $15,001–$30,000; (3) $30,001–$45,000; (4) $45,001–$75,000; (5) $75,001–$100,000; (6) $100,001–$150,000; and (7) >$150,000 ($M = 3.44$, $SD = 1.62$). The median income of the sample was between $30,001 and $45,000—a figure consistent with US Census data on national median income levels (census.gov). Educational attainment was assessed using three categories: (1) high school graduation; (2) college graduation; (3) post-graduate degree ($M = 1.73$, $SD = 0.67$). Occupation status was assessed using three categories: (1) unemployed; (2) part-time employee; and (3) full-time employee, ($M = 2.12$, $SD = 0.87$). To assess subjective social class rank ($M = 5.00$, $SD = 1.77$), we presented participants with a picture of a ten rung ladder representing ascending levels of income, education, and occupation status in society (e.g., Adler, Epel, Castellazzo, & Ickovics, 2000; Kraus, Piff, & Keltner, 2009).

Political orientation

Two items were used to assess political orientation. Participants responded to items assessing the extent they identified as socially or economically liberal (conservative) using 7-point Likert scales (1 = *very conservative*, 7 = *very liberal*). These two items were averaged, given their high correlation ($r = .58$), for an overall index of political orientation ($M = 4.67$, $SD = 1.50$).

Trait optimism

Participants filled out an eight item measure of optimism based on prior research (Anderson & Galinsky, 2006). A sample item is "In uncertain times I usually expect the best." Participants used 7-point Likert scales to enter their responses (1 = *strongly disagree*, 7 = *strongly agree*; $M = 3.34$, $SD = 0.81$; $\alpha = .90$).

Results

Overall estimates of class mobility beliefs

We first examined specific social class mobility beliefs for each of the six items. See Fig. 1 for comparisons between estimates and actual population data on social class mobility. As shown in the figure, participants overestimated the extent that Americans can move up or down the social class hierarchy. In terms of upward mobility, participants overestimated, over a ten year period, the extent that working 1000 extra hours would improve their income standing, the number of individuals who would move from the bottom 20% to the top 20% of income, the amount that some college would move people out of the bottom 20% of income, and the number of students from the bottom 20% of income families at top universities. Participants also underestimated the extent that students from the top universities are from the top 20% of income families, suggesting again that participants overestimated the extent that universities are open to Americans from lower income levels. For downward mobility beliefs about moving out of the top 20% in income, participant estimates were consistent with actual population data. These results are consistent with our first hypothesis—participants overestimated the extent that people actually move up in wealth, and the extent that colleges and universities are open to people from lower income families.

To examine the extent that participants in our sample gave an overall overestimation of social class mobility across the six items, we calculated the difference between the actual social class mobility and the estimate for each participant. For this calculation, higher numbers indicate elevated beliefs in class mobility up or down the hierarchy. We then tested this number against zero, which would indicate accuracy in estimates of social class mobility. Consistent with our first hypothesis, we found that participants were likely to overestimate the extent that social class mobility exists in America ($M = 18.76$, *CI* 95% [17.98 to 19.55], $d = 3.64$).

Individual differences related to social class mobility beliefs

We tested associations with age and social class first by examining correlations between overall mobility overestimates and individual

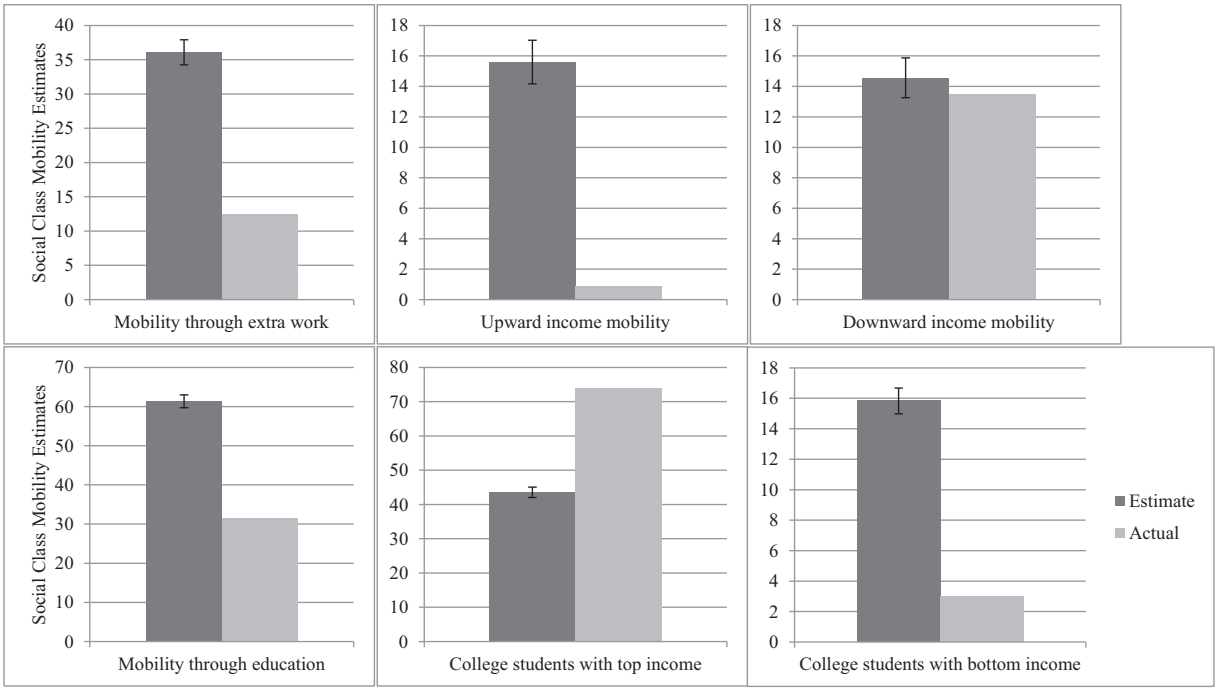

Fig. 1. Participant estimates of social class mobility on each of the six items (dark gray bars) compared to population data (light gray bars) on actual mobility. Brackets indicate 95% confidence intervals around the estimate.

Table 1
Correlations between social class mobility estimates, social class, age, optimism, and political orientation (Study 1). Asterisks "*" indicate that p < .05.

	Mobility (over) estimate	Subjective social class	Age	Education	Income	Occupation	Optimism
Mobility (over) estimate	–						
Subjective social class	.08*	–					
Age	−.15*	−.03	–				
Education	−.10*	.24*	.16*	–			
Income	.01	.53*	−.01	.20*	–		
Occupation	−.08*	.23*	.07	.23*	.27*	–	
Optimism	.05	.28*	.09	.10*	.12*	.12*	–
Political Orientation	−.18*	−.04	−.15*	−.01	−.06	−.01	−.11*

differences in age and measures of social class. The results from this analysis are displayed in Table 1. Consistent with our expectations, younger people tended to overestimate social class mobility more than older participants. Youth was also associated with educational attainment, higher scores on optimism, and more liberal political ideology.

For social class we found a mixed pattern of results: educational attainment and occupation status both showed small negative associations with overestimates of social class mobility, whereas subjective social class rank showed a small significant positive association with mobility overestimates. Income was not reliably associated with mobility overestimates. Conservatives tended to show a moderate tendency to overestimate social class mobility relative to more liberal participants. Trait optimism did not exhibit a reliable positive association with social class mobility estimates. All measures of social class showed small to moderate associations with trait optimism and no significant associations with political ideology.

Because age and several of the social class variables were correlated in the above analysis, and because relationships between different indices of social class were inconsistently associated with mobility overestimates, we used a regression framework to determine the unique relationships between these variables and class mobility beliefs. The linear regression analysis used overall mobility estimates as the outcome variable, and age, income, occupation status, education, subjective social class rank, optimism, and political orientation as predictor variables. The analysis yielded a negative association between age and mobility beliefs—being younger $\beta = -.14$, $t(620) = -3.43$, $p < .01$ predicted larger overestimates of social class mobility. Subjective social class perceptions were positively associated with mobility overestimates, with higher social class rank associated with greater overestimates of class mobility $\beta = .12$, $t(620) = 2.56$, $p = .01$. Optimism $\beta = .06$, $t(620) = 1.49$, $p = .14$, income $\beta = -.05$, $t(620) = -1.07$, $p = .28$, educational attainment $\beta = -.08$, $t(620) = -1.86$, $p = .06$, and occupation status $\beta = -.07$, $t(620) = -1.75$, $p = .08$ were unrelated to mobility estimates in the regression analysis. Finally, conservatives $\beta = -.14$, $t(620) = -3.43$, $p < .01$ provided larger overestimates of class mobility than did liberals. Although the effects were small in comparison to the magnitude of overall class mobility overestimates, this regression analysis indicates that age and subjective social class perceptions uniquely predict mobility beliefs independent of educational attainment—an indirect assessment of exposure to knowledge on class mobility—as well as optimistic views of the future and political ideology.[1]

Discussion

Study 1 provides correlational evidence in support of our first hypothesis and clarifies our predictions regarding relationships between social class and mobility estimates. Consistent with our first hypothesis, Americans tend to overestimate the extent that people can move up (or down) the social class hierarchy: participants in our sample thought that people move up in income more often than they actually do, do so more easily through extra work hours and education, and overestimated the extent that higher education is accessible to lower income families. On average, these mobility estimates exceeded actual class mobility by nearly 19 percentage points across the indices.

We also found support for an age association with class mobility beliefs: specifically, younger individuals were more likely to overestimate social class mobility relative to their older counterparts—this pattern likely emerged because young people have less experience with class mobility, as well as more motivation to believe in the possibility of future economic opportunity. As well, evidence from Study 1 suggests that higher subjective perceptions of social class are related to overestimates of class mobility. We interpret this pattern of results to suggest that perceptions of elevated position in the class hierarchy motivate beliefs that class mobility is fair, just, and possible for many average Americans. In contrast, people with higher educational attainment tend to be better informed (through their education) about economic mobility in America. Importantly, the associations with age and perceived social class held independently of measures of political ideology and trait optimism.

Study 2: genetic explanations and class mobility beliefs

The results of Study 1 are consistent with our first hypothesis regarding overestimates of social class mobility, but the correlational design leaves open the possibility that unaccounted for third variables unrelated to informational and motivational accounts of class mobility explain patterns of mobility beliefs. In the remaining studies we turn to experimental designs to demonstrate causal shifts in overestimates of class mobility. To wit, Study 2 exposes participants to a faux science news article suggesting either that scientists had discovered the genetic basis for social class, or a lack of genetic influence on social class (i.e., Kraus & Keltner, 2013; Tan & Kraus, 2015). We expected that learning about the genetic basis of social class—because it exposes participants to a plausible influence on individual economic opportunity, related to genetic potential—would reduce overestimates of class mobility relative to learning about social class as not influenced by genes.

Methods

Participants

Participants were 345 undergraduate students enrolled in psychology courses at a major public university in the Midwestern United States. The total sample size was reached by planning to collect data for this study across two full semesters at the university (Spring 2013 and Fall 2013). The majority of participants were female ($n = 217$). The largest ethnic group was European American ($n = 113$), followed by Other ($n = 87$), Asian American ($n = 82$), Latino/a ($n = 43$), African American ($n = 29$), and Native American ($n = 2$). Participants were permitted to enter more than one ethnic category. Mean age in the sample was 19.42 ($SD = 1.42$). All participants surveyed were included in analyses except in specific cases where they had missing data.

[1] In an exploratory analysis we examined interactions between age and subjective social class rank on estimates of class mobility using a linear regression analysis also including main effects of age and subjective social class. While age $\beta = -.15$, $t(715) = -3.90$, $p < .01$ and subjective social class $\beta = .07$, $t(715) = 2.00$, $p < .05$ were related to mobility estimates as in the prior analyses, the interaction was not, $t(715) = 0.27$, *ns*.

Procedure

Participants accessed the survey through computer terminals which directed them first to read a consent document for a study designed to measure relationships between personality characteristics and attitudes about society. Following consent, the first part of the study assessed participants' memory for and retention of material in scientific articles. Within this scientific article memory exercise was our genetic beliefs about social class manipulation (Kraus & Keltner, 2013). In the second part of the study, participants answered questions about their health and emotions (reported in Tan & Kraus, in press). In the third part of the study, participants answered questions about their beliefs regarding social class mobility in society and answered demographic questionnaires. Following these demographic questionnaires participants were probed for suspicion and debriefed regarding the hypotheses of the study. None ($n = 0$) of the participants were able to successfully guess the hypotheses of the study when they were probed for suspicion.

Manipulation of essentialist beliefs

Our manipulation of essentialist beliefs was identical to that of previous research (see, Kraus & Keltner, 2013). We had participants read two mock scientific news articles—the first was a filler article about will power in eating and dieting. The second article was one of two possible scientific articles about the (non)-genetic basis of social class. In the article advancing the argument for the genetic basis of social class, researchers were said to have discovered the specific genes underlying a person's social class, that lower-class individuals had more similarity in genes with other lower-class individuals, and that these genes were inherited from their parents. In the article advocating the non-genetic basis for social class, the same researchers suggested that there was no evidence linking specific genes to an individual's social class, that lower-class individuals had no special genetic similarity to other lower-class individuals, and that social class was not inherited from one's parents. To determine the success of the manipulation, we asked attention check questions for retention of article information for both mock science articles. For the first article on will power, we asked participants whether the article was consistent with the statement: "Having sweets readily available should decrease your desire of them." For the (non)-genetic basis of social class articles, we asked participants if the article argument was consistent with the statements: "Social class is stable, inherent, and biologically determined." and "There is no genetic basis to social class." Participants responded to these questions on 7-point Likert scales (1 = *strongly disagree*, 7 = *strongly agree*).

Social class mobility

Participants answered the same six questions related to social class mobility as in Study 1. As in Study 1, we calculated an overall estimate of social class mobility such that higher scores indicated greater overestimates of mobility up or down ($M = 26.34$, $SD = 10.76$).

Objective and subjective social class

Participants filled out measures of income, educational attainment, and subjective social class in Study 2. Because participants were college students, and presumably, not yet fully identified with a particular social class, the income ($M = 5.11$, $SD = 1.98$) and educational attainment of participants' family ($M_{mother} = 1.91$, $SD_{mother} = 0.70$; $M_{father} = 2.07$, $SD_{father} = 0.79$) was assessed using the same categories as in Study 1. The median income of the University sample was between $75,001 and $100,000, higher than the National median, but consistent with prior University student data (e.g., Kraus & Keltner, 2009). We assessed family subjective social class rank using the same ladder measure as in Study 1 ($M = 6.71$, $SD = 1.63$). Political ideology was assessed as in the prior study.

Results

Overall estimates of class mobility

We first examined the overall estimates of social class mobility collapsed across the manipulation of genetic beliefs about social class. Our first hypothesis, that Americans would overestimate social class mobility was supported in these data: participants substantially overestimated social class mobility in society ($M = 26.33$, *CI* 95% [25.19, 27.48], $d = 4.90$).

Manipulation check

We next examined the success of our genetic basis of social class manipulation. We examined response means of the genetic and non-genetic conditions for the three memory items. As expected, the genes group ($M = 4.86$) thought that social class was more "stable, inherent, and biologically determined" than the no genes group ($M = 1.90$), $t(340) = -2.96$, $p < .01$. The no genes group ($M = 5.66$) agreed with the statement that social class had "no genetic basis" more than the genes group ($M = 2.51$), $t(340) = 3.15$, $p < .01$. Both the genes ($M = 5.19$) and the no genes ($M = 5.40$) groups agreed with the will power question to a similar degree $t(340) = 1.11$, $p = .27$. Overall, these analyses suggest that our manipulation was successful in delivering unique information about the genetic basis of social class.

Genetic explanations and class mobility

For our second hypothesis, we predicted that exposure to genetic explanations about social class would decrease estimates of social class mobility relative to exposure to beliefs that social class has no genetic basis. To test this hypothesis, we examined mean-level differences between the genes and no genes groups on our six social class mobility items. For four of the six class mobility items, the genetic group reduced overestimates of social class mobility beliefs relative to the non-genetic group.

Specifically, compared to the non-genetic group, participants in the genetic group ($M_{Genetic} = 17.21$; $M_{Non\text{-}Genetic} = 25.59$) gave more accurate estimates of the number of people who would move to the top fifth of income earners (*CI* 95% difference [4.32, 12.42]), move down from the top 20% of income earners ($M_{Genetic} = 19.65$; $M_{Non\text{-}Genetic} = 25.37$; *CI* 95% difference [0.96, 10.49]), and of the number of students from the bottom 20% of income families at top colleges and universities ($M_{Genetic} = 14.96$; $M_{Non\text{-}Genetic} = 18.10$; *CI* 95% difference [1.12, 5.16]). As well, the genetic group ($M_{Genetic} = 40.86$; $M_{Non\text{-}Genetic} = 35.58$) was less likely to underestimate the number of students from the top 20% of income families at major colleges and universities in comparison to the non-genetic group (*CI* 95% difference [−1.19, −9.38]). Estimates of how many people would improve their income status by conducting extra work (*CI* 95% difference [−3.58, 7.78]) or by earning a college degree (*CI* 95% difference [−0.02, 8.31]) did not show a reliable difference between the two experimental groups.

An examination of overall overestimates of social class mobility across the six items assessing mobility beliefs reveals a similar pattern (see the second and third bars from the left in Fig. 2). Participants in the genetic and non-genetic groups both overestimate social class mobility, but consistent with Hypothesis II, participants in the genetic group gave less biased estimates of social class mobility than did those in the non-genetic group $t(343) = 4.61$, $p < .01$, $d = 0.50$.

Individual differences in age ($r = -.09$, $p = .11$), parental education ($r_{mom} = -.04$, $p = .44$; $r_{dad} = -.08$, $p = .15$), income ($r = .08$, $p = .15$), subjective perceptions of social class ($r = .04$, $p = .48$), and political ideology ($r = -.07$, $p = .21$) were unrelated to estimates of class mobility in Study 2—although the direction of these effects was consistent with

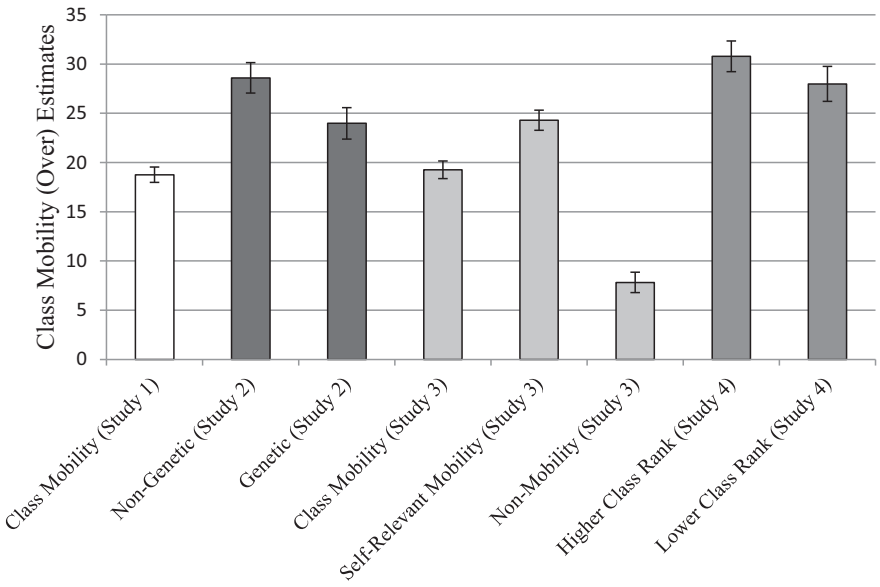

Fig. 2. Overall estimates of social class mobility from each of the four studies. Error bars indicate 95% confidence intervals around the mean.

the direction in Study 1. It is likely that the college student sample significantly constrained the range of these variables relative to the online participants in Study 1 (e.g., Buhrmester, Kwang, & Gosling, 2011). It is also possible that Study 2 lacked sufficient power to observe the small relationships between age, subjective social class, and mobility overestimates found in Study 1. Despite these limitations and consistent with Study 1 (see Fig. 2, three leftmost bars), the younger Study 2 participants (M_{age} = 19.42) provided larger overestimates of class mobility than their older Study 1 counterparts (M_{age} = 31.47).

Discussion

The results from Study 2 provide additional evidence in support of our central hypotheses. Consistent with our first hypothesis, university students overestimated social class mobility beliefs to a large degree. We also found support for our second hypothesis: exposure to genetic explanations of social class reduced the overestimates of social class mobility relative to non-genetic explanations. Importantly, our younger university student sample provided overestimates of class mobility that were higher than that of our older online adult participants in Study 1—a result consistent with the age findings in Study 1. Finally, associations between measures of social class and overestimates of class mobility did not emerge in Study 2, but this lack of association could have been a by-product of the combination of the small effect size of the associations between social class and mobility overestimates or the truncated range of social class at four-year universities (Stephens, Markus, & Fryberg, 2012). We continue to track associations between social class and class mobility beliefs in the studies that follow.

Study 3: the self-relevance of class mobility beliefs

Study 3 sought to test our motivated account of class mobility by varying the extent that estimates of class mobility were relevant to the self. Participants in the study were asked to make class mobility estimates in general and for individuals similar to the self in goals, motivation, and abilities. We predicted that increasing the self-relevance of mobility estimates in this fashion would engage enhanced motivated reasoning, and by implication, increase overestimates of class mobility. As in the prior studies, we again assessed associations between class mobility estimates and age and social class. As in the first two studies, we assessed political ideology to determine if class mobility estimates would vary independently of liberal or conservative political beliefs.

Importantly, Studies 1 and 2 have relied on a six item mobility belief measure that asks participants to make an abstract estimate of the extent that social class mobility exists in American society. It is possible that the overestimates we have observed in the first two studies are simply due to general errors in perception and estimation of complex statistical probabilities and not class mobility in particular. In Study 3 we account for this alternative explanation by having participants make estimates for abstract statistical information that is unrelated to class mobility. We expected participants to make overestimates of class mobility independent of these non-mobility relevant statistical estimates.

Method

Participants

As in Study 1, we collected a large online sample of the participants (n = 747) from Mechanical Turk to complete our mobility beliefs survey. Participants were 18 years of age or older (M = 33.92, SD = 10.65) and were all American citizens. Participants were paid $1.00 for participating in the survey, which was described as an assessment of people's personality and beliefs about society, and were debriefed about the hypotheses of the study upon completion. The survey took participants less than 10 min to complete. All participants surveyed were included in analyses except in specific cases where they had missing data or if they had previously taken part in Study 1.

Self-relevance manipulation and measures

Participants completed an identical survey to that of Study 1, only in Study 3 the participants filled out two versions of the six-item mobility beliefs measure in a counterbalanced order—ordering did not change our results. The first version was identical to the wording of Study 1and reflected a general estimate of class mobility beliefs. The second version heightened the self-relevance of class mobility estimates by asking the participants to estimate mobility for individuals who "are similar to you in terms of goals, abilities, talents, and motivations." Overestimates of class mobility from the general (M = 19.41, SD = 12.73) and self-relevant (M = 24.53, SD = 14.67) versions of the six-item mobility beliefs measure were calculated as in the prior studies. Measures of income (M = 3.69, SD = 1.56; the median was again between $30,001 and $45,000), educational attainment (M = 1.74, SD = 0.63), subjective social class (M = 5.00, SD = 1.70), and political ideology (M = 4.67, SD =

1.54) were assessed as in Study 1. In addition to these measures, we added a subjective assessment of how much participants know about economic mobility in America using a 7-point Likert scale (1 = *not at all*, 6 = *a great deal*; $M = 4.04$, $SD = 1.14$). This latter measure was used to assess the extent that knowledge about class mobility predicts participant estimates.

To gauge participant tendencies to overestimate statistical information unrelated to class mobility, we assessed participant responses to three questions related to soccer and astronauts—two domains we expected participants to have little information to make precise judgments. These questions were chosen based on pilot testing, which revealed that Americans were generally uniformed about the members of the US men's soccer team and of the demographic characteristics of astronauts. Participants answered one American soccer question: specifically, participants were asked, based on the 2014 roster of the men's US World Cup soccer team, to guess how many of a sample of 100 team members would have been born outside of the United States? ($M = 38.99$, $SD = 27.10$; www.espn.com). With respect to astronauts, participants were asked, of a sample of 100 US astronauts, (1) how many would be military personnel? ($M = 58.98$, $SD = 26.99$; www.nasa.gov) and (2) how many would be women? ($M = 18.61$, $SD = 13.91$; www.nasa.gov). On average, participants were accurate about the number of astronauts who are military personnel (60.9%) and overestimated the extent that US soccer players were born outside of the US (17.4%) and the extent that astronauts are women (14.5%). As with the class mobility estimates, overestimation for these questions was computed and then averaged to indicate an overall metric of general estimation ($M = 7.82$, $SD = 14.32$).

Results

As expected, and consistent with our first hypothesis, both general estimates $t(746) = 41.68$, $p < .01$, $d = 3.05$ and self-relevant estimates $t(746) = 45.70$, $p < .01$, $d = 3.35$ significantly overestimated the levels of class mobility. In particular, we expected overestimates of class mobility to be larger when framed as relevant to the self. To test this hypothesis we conducted a paired samples t-test comparing means for general and self-relevant estimates of class mobility. The results of this analysis align with our third hypothesis: participants provided larger overestimates of class mobility when the mobility judgments were framed as relevant to the self ($M = 24.53$) in comparison to when they were not ($M = 19.41$), $t(746) = -15.84$, $p < .01$, $d = 0.58$.

Our motivated account of class mobility estimates suggests that overestimates of class mobility are beyond simple errors in statistical probability calculation. To more directly test this prediction, we examined mobility estimates in comparison to estimates for our non-mobility statistics related to soccer players and astronauts. For this analysis, we conducted a repeated measures analysis of variance (ANOVA) with non-mobility estimates, general class mobility estimates, and self-relevant class mobility estimates as three levels of a single factor. The overall analysis was significant $F(2,1456) = 275.38$, $p < .01$, and revealed significant differences between all three groups that aligned with our predictions (see Fig. 2, three light gray bars). Specifically, though participants overestimated non-mobility statistics ($M = 7.82$) they were more likely to overestimate social class mobility ($M = 19.26$), and in particular, when these estimates were described as relevant to the self ($M = 24.30$).

We next tested associations between age, social class measures, and class mobility estimates. See Table 2 for correlational analyses examining associations with general (below the diagonal) and self-relevant (above the diagonal) estimates of class mobility. Correlations reveal similar patterns as observed in Study 1. For general class mobility estimates, age was significantly negatively associated with greater overestimates of class mobility. As in Study 1, higher subjective perceptions of social class rank were significantly associated with overestimates of mobility. Income was also positively associated with class mobility estimates in this sample whereas educational attainment was not associated. Once again, conservatives provided larger overestimates of class mobility. In addition, reduced self-rated knowledge of economic mobility predicted increased overestimates of class mobility—providing more support for the informational component to class mobility overestimates. The same patterns emerged for the self-relevant mobility estimates, only with these estimates, self-rated knowledge was not related to mobility estimates.

When we used the linear regression framework, as in Study 1, predicting class mobility overestimates with age, social class measures, political ideology and self-rated knowledge, a similar pattern emerged: in the full model accounting for self-rated knowledge $\beta = -.06$, $t(693) = -1.53$, $p = .13$ and political ideology $\beta = -.16$, $t(693) = -4.34$, $p < .01$, age negatively predicted mobility overestimates $\beta = -.12$, $t(693) = -3.14$, $p < .01$ and subjective social class positively predicted mobility overestimates $\beta = .14$, $t(693) = 3.06$, $p < .01$. This latter finding indicates that age and subjective social class predict mobility overestimates independent of political ideology and self-rated knowledge of economic mobility. Income was positively associated with the overestimates of class mobility in this model $\beta = .09$, $t(693) = 2.04$, $p < .05$ whereas educational attainment was not associated with the mobility estimates $\beta = -.07$, $t(693) = -1.69$, $p = .09$.

Discussion

Study 3 provided additional support for each of our hypotheses: participants again provided substantial overestimates of class mobility, and even did so in Study 3 relative to statistical estimates unrelated to mobility beliefs. Importantly and consistent with our third hypothesis, heightening the self-relevance of the mobility estimates increased the tendency for the participants to overestimate class mobility—this latter finding is consistent with our motivated account of mobility estimates.

Age and social class were associated with overestimates of class mobility in line with Study 1: younger and higher subjective social class participants overestimated class mobility. Importantly, relationships between age, subjective social class, and overestimates of social class mobility held even after accounting for political ideology, educational attainment, and self-reports of knowledge about economic mobility—a result suggesting that overestimates of class mobility relate to age and social class in ways that are independent of both explicit knowledge of economic mobility and political beliefs.

Table 2
Correlations between general (below the diagonal) and self-relevant (above the diagonal) social class mobility estimates, social class, age, self-rated mobility knowledge, and political orientation (Study 3). Asterisks "*" indicate that p < .05.

	Mobility (over) estimate	Subjective social class	Age	Education	Income	Knowledge	Political ideology
Mobility (over) estimate	–	.27*	−.14*	−.01	.21*	−.05	−.23*
Subjective social class	.20*	–					
Age	−.12*	−.03	–				
Education	−.05*	.28*	.11*	–			
Income	.17*	.58*	−.03	.25*	–		
Knowledge	−.09*	.05	.08*	.15*	.09*	–	
Political ideology	−.19*	−.17*	−.09*	.04	−.12*	.07	–

Study 4: subjective social class rank and class mobility beliefs

Up to this point our findings across the previous studies indicate that higher subjective ratings of social class predict greater overestimates of class mobility: in essence, those who see themselves at the top of society's hierarchy are motivated to overestimate class mobility because such overestimates suggest that class mobility is possible for everyone and that elevated positions in society are achieved fairly by individuals. Study 4 sought to demonstrate this pattern of results using an experimental design wherein subjective social class is manipulated, rather than measured (e.g., Emery & Le, 2014; Kraus, Horberg, Goetz, & Keltner, 2011). By manipulating subjective social class, we can rule out alternative explanations for the relationship between perceptions of social class and estimates of class mobility (e.g., differences in peer group references, experiences of real upward mobility, self-esteem). In Study 4 we momentarily manipulated subjective social class rank and then assessed mobility beliefs as in the prior studies. We expected that manipulated higher subjective social class would lead to greater overestimates of social class mobility relative to lower subjective social class.

Method

Participants

As in Study 1, we collected a large online sample of participants ($n = 420$) from Mechanical Turk to complete our mobility beliefs survey. We set a goal of collecting at least a sample of 400 participants because our prior studies showed a range of associations between subjective social class perceptions and mobility overestimates ($r = .04$ to .27), and 400 participants provide more than 80% power to observe an association of $r = 15$. Participants were 18 years of age or older ($M = 34.07$, $SD = 11.63$) and were all American citizens. Participants were paid $1.00 for participating in the survey, which was described as an assessment of people's personality and beliefs about society, and were debriefed about the hypotheses of the study upon completion. The survey took participants less than 10 min to complete. All participants surveyed were included in analyses except in specific cases where they had missing data and in cases where participants had taken part in Study 1 or Study 3.

Procedure

Participants accessed the survey online and filled out demographic information about themselves, including measures of objective social class. Following these survey measures, participants' social class rank was manipulated in a procedure adapted from prior research (e.g., Kraus, Côté, & Keltner, 2010). In this manipulation, participants were presented with a ladder with 10 rungs and were instructed to "think of the ladder above as representing where people stand in the United States" (see Adler et al., 2000). Participants were then assigned to either a low or high social class rank position, based on the following instructions: "Now, please compare yourself to the people at the very bottom (top) of the ladder. These are people who are the worst (best) off—those who have the least (most) money, least (most) education, and the least (most) respected jobs. In particular, we'd like you to think about how you are different from these people in terms of your own income, educational history, and job status. Where would you place yourself on this ladder relative to these people at the very bottom (top)?"

Participants were then instructed to place themselves on the ladder relative to the person at the very top or bottom (1 = *bottom rung*, 10 = *top rung*; $M = 5.00$, $SD = 1.70$). To heighten the salience of the manipulated social class rank of the imagined interaction partner, participants then imagined themselves "in a getting acquainted interaction with one of the people you just thought about from the ladder above." In particular, participants were instructed to "think about how the differences between you might impact what you would talk about, how the interaction is likely to go, and what you and the other person might say to each other."

Following this procedure, participants filled out the self-relevant class mobility estimates from Study 3. We chose to have participants fill out this self-relevant measure rather than the general mobility estimates because of the stronger observed correlation in Study 3 with measured subjective social class.

Results

Social class rank and class mobility beliefs

In support of our first hypothesis, participants once again made substantial overestimates of self-relevant class mobility ($M = 29.38$) when compared to a total accuracy score (i.e., "0"), $t(419) = 48.61$, $p < .01$, $d = 4.75$. In addition, participants overestimated class mobility even relative to the non-mobility estimates calculated from Study 3 ($M = 7.82$), $t(419) = 35.67$, $p < .01$, $d = 3.49$.

As in prior research (Kraus et al., 2010), we sought to determine if our manipulation was successful in shifting participants' momentary perceptions of their social class rank. To that end, we examined participants' responses on the 10-rung ladder measure of social class rank in the low and high rank conditions. Results confirmed our expectations: low-rank participants, imagining an interaction with someone at the top of the social class hierarchy, reported being lower in social class rank ($M = 4.58$) than did high-rank participants who imagined an interaction with someone at the bottom of the hierarchy ($M = 5.39$), $t(418) = 5.00$, $p < .01$, $d = 0.49$.

Analyses of class mobility estimates revealed a pattern aligning with the predicted positive relationship between perceived social class rank and mobility beliefs (see Fig. 2, rightmost bars): although participants in both conditions overestimated class mobility, participants manipulated to experience elevated social class rank provided higher overestimates of social class mobility than their relatively lower class rank counterparts, $t(418) = 2.38$, $p = .02$, $d = 0.23$. Moreover, in a linear regression predicting mobility overestimates with age and the manipulation of subjective social class, the influence of the manipulation $\beta = .10$, $t(417) = 2.04$, $p < .05$ on class mobility overestimates held independently of age. Consistent with the second hypothesis and prior studies, younger participants overestimated social class mobility more than their older counterparts $\beta = -.18$, $t(417) = -3.83$, $p < .01$. As in Studies 1 and 3, measured subjective social class was significantly positively correlated with overestimates of class mobility ($r = .15$, $p < .05$).

Discussion

Study 4 found a causal relationship between subjective perceptions of social class and overestimates of class mobility: specifically, manipulated upper-class participants tended to overestimate class mobility more than their relatively lower-class counterparts. This study aligns with the correlational findings of Studies 1 and 3 suggesting that perceptions of elevated social class position enhance beliefs that ascending the economic hierarchy is more likely than reality would suggest.

General discussion

> "So we beat on, boats against the current, borne back ceaselessly into the past."—F. Scott Fitzgerald (1925 p. 180).

American culture is filled with anecdotes about the promise of equal opportunity and the pursuit of happiness. Beliefs in the American

Dream permeate our parenting decisions, educational practices, and political agendas, and yet, according to data we present in this manuscript, Americans are largely inaccurate when asked to describe actual trends in social class mobility in society. Across four studies, samples of online survey participants and university students exhibited substantial and consistent overestimates of class mobility—overestimating the amount of income mobility and educational access in society by a wide margin. A meta-analytic summary of the findings reveals that participants overestimated class mobility by nearly 23 percentage points across the studies ($M = 22.97$, CI 95% [22.48, 23.47]) and by 21 points if removing the self-relevant mobility estimates ($M = 21.03$, CI 95% [20.43, 21.62]). These mobility estimates were substantially larger than general errors in statistical estimation collected in Study 3 ($M = 7.82$)—mobility overestimates appear to be larger in magnitude than general errors in statistical probability estimation, at least in relationship to astronauts and American soccer players.

Some Americans were more likely to overestimate social class mobility than others, although these effects ranged from small to medium in magnitude. Young participants (r's ranged from −.09 to −.19) exhibited more exaggerated overestimates of social class mobility than their older counterparts. We reason that this pattern is influenced by a lack of exposure to class mobility information and by motivated reasoning. Specifically, younger participants have less experience with social class mobility and more motivation to believe that class mobility is possible in the future. We also found evidence suggesting that higher perceived social class (r's ranged from .04 to .27) is associated with greater overestimates of social class mobility—suggesting that people higher in perceived social class justify their elevated positions by suggesting that those positions are attainable by all Americans. Importantly, each experiment provided causal evidence for an informational (Study 2) or motivational (Studies 3 and 4) account of class mobility beliefs—that people overestimate class mobility because they lack information about the causes of mobility, or because they seek to protect the self.

Notwithstanding the promise of the findings from the present research, several limitations merit mention. Our six item mobility beliefs measure asked participants to make an abstract estimate of the extent that social class mobility exists in American society. Of note, removing any one of the specific items from the mobility beliefs measure actually reduces the overall reliability of the measure in each study. Additionally, though we took steps to make the calculations for social class mobility as simple as possible for participants—by for example, asking them to think about 100 people rather than percentages—part of the large overestimation of social class mobility effect might be due to simple arithmetic errors. While examining non-mobility beliefs in Study 3 was a way for us to account, in part, for these errors, we acknowledge that more research is necessary to determine the extent that general perceptual inaccuracy accounts for these effects (e.g., Simons & Jensen, 2009). Importantly, we did give all participants a chance to respond to our survey by answering the question "Were any of the questions strange, unusual, or particularly difficult?" Indeed, some participants mentioned difficulty in filling out mobility estimates but mentions of this difficulty represented less than 2% of the total sample and removing these participants did not change the results reported in the paper.

Despite our efforts in the experiments to shift participant mobility beliefs, these efforts did not elicit complete accuracy in estimates of class mobility. It is interesting to speculate about what other psychological variables might account for the overestimates observed in the present studies. One candidate might be individual differences in legitimacy beliefs (Jetten, Haslam, & Barlow, 2013)—that is, individuals who are particularly likely to believe in the American Dream, or in a just and meritocratic world more broadly, might be particularly likely to overestimate class mobility. Future research is necessary to test this prediction.

With respect to the informational route of mobility estimates, it is interesting to speculate about the sources of information that might reduce overestimates of class mobility (see Cimpian & Salomon, 2014): for instance, would participants update their beliefs about class mobility when exposed to any relevant information about actual mobility or would individuals only use information consistent with their current mobility lay theories? How might motivational and informational routes to persuasion interact to influence changes in mobility beliefs? It is possible that based on the present research participants would be resistant to updating their beliefs about economic mobility if the information conflicts with their existing assumptions.

Finally, that genetic explanations constrain beliefs in social class mobility suggests that how Americans understand success and failure in life and career are likely to be intimately linked to beliefs about the types of genes an individual possesses. Do Americans have stronger genetic explanations for social class than other countries or cultures? Do these beliefs in the power of genes to dramatically shape life outcomes hinder people from pursuing their career aspirations after encountering initial difficulty (Dweck, 1990)? These questions and others like them are likely to provide several insights into how Americans think about the events of their lives along with the successes and failures they encounter across the life course.

Errors in estimating the lack of social class mobility in American society appear, based on this research, to be substantial. While this inaccuracy in mobility estimates may enhance hard work and effort, it also downplays the inherent strain that economic inequality places on society, and specifically, on individuals at the bottom of the social class hierarchy. Understanding the causes of social class mobility beliefs along with ways to make these beliefs more accurate represents a promising area of future research—with implications for both economic policy change and the pursuit of happiness.

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