Social Cognition, Vol. 29, No. 2, 2011, pp. 322–340

WORKING FOR THE SYSTEM: MOTIVATED DEFENSE OF MERITOCRATIC BELIEFS

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Conceptualizing the widespread belief in meritocracy as a case of system justification, we examined how the desire to justify the societal status quo motivates cognitive and behavioral defense of the notion that hard work leads to success. Experiment 1 demonstrated that participants judged objectively equivalent evidence as better in quality when it led to a conclusion that supported (vs. challenged) a link between hard work and success in American society, and that this pro-meritocracy bias in judgment increased following system threat. Experiment 2 tested a paradoxical implication for behavior: Participants defended the system by working harder when they were told that success on the task was due to luck (vs. effort), but only when the task was perceived to be system-relevant. In Experiment 3, this pattern replicated even for participants who did not explicitly endorse a personal belief in meritocracy. Taken together, these results suggest that meritocratic beliefs serve to justify the social system and elucidate the cognitive and behavioral mechanisms used to defend such beliefs.

Portions of this research were presented at Columbia University's Teachers College, Stanford University's Graduate School of Business, the 2007 International Society of Political Psychology (ISPP) conference in Portland, OR, and the 11th Ontario Symposium: The Psychology of Justice and Legitimacy in Waterloo, Canada. The authors would like to thank Shelly Chaiken, Ido Liviatan, and Cheryl Wakslak for helpful conceptual and methodological suggestions, and for commenting on a previous version of this manuscript.

We are also grateful to Radhika Dhariwal, Michael Duerr, Adam Johnson, and Carol Pak for assistance with data collection and coding, and to several anonymous reviewers for their thoughtful suggestions.

This research was supported in part by an NSF Graduate Research Fellowship to Alison Ledgerwood, a Ford Foundation Pre-Doctoral Diversity Fellowship to Anesu N. Mandisodza, and NSF Award # BCS-0617558 to John T. Jost.

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From the Horatio Alger novels of the late 19th century to modern-day Rags-to-Riches specials on cable television; from *The Little Engine that Could* to the carefully orchestrated meritocratic theme of the 2008 Democratic National Convention ("Renewing America's Promise"), the idea that anyone can succeed through hard work and determination is a beloved refrain in American society. Our proverbs urge us to try again "if at first we don't succeed" and promise that we can "pull ourselves up by our bootstraps." Moreover, these meritocratic beliefs are endorsed by individuals across the socioeconomic spectrum, including those at the very lowest end (Connelly, 2005; Hochschild, 1981; Jost, Blount, Pfeffer, & Hunyady, 2003; Jost, Pelham, Sheldon, & Sullivan, 2003; Kluegel & Smith, 1986; Lane, 1962). Such widespread acceptance is somewhat surprising, given the dubious veracity of the connection between hard work and success in American society (e.g., Scott & Leonhardt, 2005; Weakliem, McQuillian, & Schauer, 1995). For example, in a *New York Times* survey, 75% of respondents reported believing that the likelihood of upward class mobility was equal to or greater than it was three decades ago (Connelly, 2005), but empirical evidence reveals that such mobility has significantly decreased in the United States (Bradbury & Katz, 2002). Furthermore, research demonstrates that meritocratic beliefs may have negative consequences, such as decreased self-esteem and blaming oneself for failure, especially for members of disadvantaged groups (Foster & Tsarfati, 2005; Ho, Sanbonmatsu, & Akimoto, 2002; Jost & Thompson, 2000; McCoy & Major, 2006; O'Brien & Major, 2009; Quinn & Crocker, 1999). Why, then, is this idea so popular?

To date, most research on the belief that hard work leads to success has focused on its effects rather than its causes. Researchers have generally conceptualized this belief as a relatively stable personality variable, measuring it as an individual difference and correlating its endorsement with various outcomes (e.g., Biernat, Vescio, & Theno, 1996; Foster & Tsarfati, 2005; Foster, Sloto, & Ruby, 2006; Katz & Hass, 1988; Major, Kaiser, O'Brien, & McCoy, 2007; Son Hing, Bobocel, & Zanna, 2002). For instance, Furnham (1982) found that individuals who strongly endorse such beliefs are more likely than those who do not to explain unemployment using internal causes, such as laziness and insufficient effort. Such research has painted a broad, rich picture of the implications of endorsing meritocratic beliefs, yet it leaves unanswered questions of why these beliefs are so popular in the first place and what psychological mechanisms underlie their perseverance.

The less extensive research literature examining belief in meritocracy as an outcome variable has tended to explain the endorsement of these beliefs using self-interest or accuracy motives (e.g., Cokley et al., 2007; Garcia, Desmarais, Branscombe, & Gee, 2005; Levy, Freitas, Mendoza-Denton, & Kugelmass, 2006). For instance, Cokley and colleagues (2007) found that White participants endorsed meritocratic beliefs more than Black participants and, for White participants, socioeconomic status was positively correlated with meritocratic ideology—the assumption being that meritocratic beliefs are endorsed insofar as they benefit oneself or one's group. In other research, Levy et al. (2006) concluded that negative treatment by authority figures reduced the extent to which African Americans endorsed meritocratic beliefs after Hurricane Katrina, suggesting that individuals at least sometimes construct or revise these beliefs by learning and integrating valid information. Thus, prior empirical work on the psychological processes

underlying the pervasive belief that hard work leads to success has largely focused on the role that self- or group-interest mechanisms play in motivating its endorsement, or it has implied that meritocratic beliefs can be shaped by accuracy-driven information processing.

In the present research, we highlight an additional reason why individuals may endorse and defend meritocratic beliefs. Specifically, we examine the notion that people may want to believe that hard work leads to success not simply because it is sometimes true, and not simply because it makes them feel better about themselves, but also because it helps to rationalize existing inequalities in society and preserve a view of the social system as fair and just (Jost, Pelham, et al., 2003; Kaiser, Drury, Spalding, Cheryan, & O'Brien, 2009; McCoy & Major, 2007; Sidanius & Pratto, 1999). To the extent that people assume hard work leads to success, even objectively arbitrary status hierarchies can be viewed as valid and deserved reflections of differences in individual effort.

Why would people want to believe that the existing social system is fair and legitimate? According to system justification theory, individuals are motivated to rationalize, defend, and justify the societal status quo in order to reduce uncertainty, avoid existential threat, and maintain valued interpersonal relationships (Jost & Hunyady, 2005; Jost, Ledgerwood, & Hardin, 2008; Jost, Pelham, & Carvallo, 2002). Although most people are at least somewhat motivated to justify the social system, the degree of motivation can vary due to dispositional and situational factors, and people who are highly motivated to system-justify often do so even at the expense of their personal and group interests (Jost & Hunyady, 2002; Jost, Pelham, et al., 2003).

The notion that individuals endorse meritocratic beliefs in order to preserve a view of the existing social system as fair and legitimate suggests some interesting and otherwise nonintuitive predictions. For example, it suggests that people may be motivated to defend the notion that hard work leads to success in American society, even in the face of contradictory evidence (rather than simply believing what the evidence suggests, as an accuracy-motivated person would do). Moreover, given that the degree of motivation to justify the system can change depending upon the situation, this defensive tendency should increase when system justification motivation is high rather than low (e.g., after the legitimacy of the social system is challenged; Kay, Jost, & Young, 2005; Napier, Mandisodza, Andersen, & Jost, 2006; Ullrich & Cohrs, 2007; see Jost et al., 2010, for a review). In addition, individuals should be more likely to defend the notion that hard work leads to success when it relates to the social system as a whole (and thus helps to justify existing social arrangements), compared to when it does not reflect upon the social system. Thus, simply framing a task as relevant to the social system might change people's reaction to it. Furthermore, although behavioral outcomes have rarely been examined in research on system justification (but see Jost et al., 2002, for an important exception), the desire to view the existing social system as fair and legitimate should in theory influence not just people's cognitive responses, but also their actual behavior. In fact, system justification motivation could do this in a rather counterintuitive way, by leading people to work harder when told that luck (vs. effort) leads to success—a prediction we describe more fully below. We tested these ideas in three experiments that examined the motivated defense of meritocratic beliefs using both judgmental and behavioral measures.

EXPERIMENT 1

The first experiment was designed to test whether individuals exhibit system-justifying biases in judgment when exposed to information about the connection between hard work and success in society. We expected that participants would evaluate scientific evidence more favorably when its conclusion happened to support, versus contradict, the meritocratic ideal. More importantly, we predicted that if individuals use meritocratic beliefs to bolster the legitimacy of the social system, then this pro-meritocracy bias in judgment should increase when participants' motivation to justify the system was heightened by reading a passage that challenged the legitimacy of the societal status quo.

METHOD

Participants. One hundred and fifteen undergraduates (66 female) at New York University (NYU) completed a series of ostensibly unrelated tasks in partial fulfillment of a course requirement.

System Justification Motivation. Participants were led to believe that the computer would present a series of unrelated studies in random order, including an information processing study and several short pilot studies to help the researchers design materials for later in the semester. In fact, the first task always manipulated system justification motivation using a procedure developed by Jost and colleagues (Jost, Kivetz, Rubini, Guermandi, & Mosso, 2005, Study 3; see also Kay et al., 2005; Lau, Kay, & Spencer, 2008; Stapel & Noordewier, 2011). Research has shown that although this manipulation has a highly significant effect on participants' perceptions of the social system, it has no effect on measures of individual or collective self-esteem (Kay et al., 2005, 2009; Wakslak, Jost, & Bauer, 2011). Using this procedure thus allowed us to manipulate system justification motivation while holding constant the individual's motivation to engage in self-enhancement or group-enhancement.

Participants assigned to the high system threat condition read what they believed to be a news article that undermined the legitimacy of the U.S. social system, suggesting that "the country has reached a low point in terms of social, economic, and political factors." In the low system threat condition, participants read instead that "the country has reached a stable point in terms of social, economic, and political factors" (e.g., see Jost et al., 2005; Kay et al., 2005; Lau et al., 2008).

Manipulation of Pro- vs. Anti-Meritocratic Conclusions. Next, participants judged the quality of evidence presented in two studies that were allegedly "designed to test the idea that people can achieve success through hard work and sheer determination." Adapting experimental paradigms developed by Lord, Ross, and Lepper (1979) and Pomerantz, Chaiken, and Tordesillas (1995), we created two study descriptions that differed in terms of methodological details (e.g., sample size and characteristics, self-report versus observational measures), major criticisms, and rebuttals.[1] For each study description, there were two types of conclusions: a pro-meritocracy conclusion (hard work and determination lead to success), and

1. Pilot testing indicated that the study descriptions were evaluated equivalently (in terms of scientific validity) in the absence of specific information about the conclusion.

an anti-meritocracy conclusion (hard work does not lead to success). We counterbalanced the study descriptions with conclusion type, so that each participant judged one study description with a pro-meritocracy conclusion, and one with an anti-meritocracy conclusion (this counterbalancing variable did not influence our results and is therefore not discussed further). Therefore, across participants, the only difference between studies was whether or not the conclusion supported the notion that hard work leads to success in society.

Order and Meritocracy Threat. Given the within-subjects nature of our experimental design, it was also necessary to counterbalance the order of the two conclusions (anti-meritocracy first vs. second). Moreover, we speculated that order might be more than a purely methodological variable in this study. To the extent that individuals are motivated to defend meritocratic beliefs, either because they endorse them and want to defend their pre-existing beliefs (e.g., Major et al., 2007) and/or because they are motivated to defend the societal status quo (e.g., Jost et al., 2010), then reading the anti-meritocracy conclusion first might threaten those beliefs and heighten defensiveness in subsequent judgments. In contrast, reading the pro-meritocracy conclusion first could affirm meritocratic beliefs or assuage system justification motivation, and therefore decrease or even eliminate subsequent defensiveness. We therefore included order as a potential moderator of biased judgment in our design.

Judged Quality of Evidence. After reading each study description, participants were asked: "How well-conducted was the study you just read about?" and "How convincing was this study in its conclusions?" Responses to these two items, which were given on an 11-point scale, were averaged for the pro-meritocracy (α = .88) and anti-meritocracy (α = .94) studies.

Selective Cognitive Elaboration. In order to explore whether the hypothesized pro-meritocracy bias in judgment might reflect selectivity in cognitive elaborations about the study, we assessed the thought processes underlying participants' judgments by asking them to list up to five thoughts they had about why each study was or was not convincing (e.g., Ledgerwood, Trope, & Chaiken, 2010; Pomerantz et al., 1995). These were coded as either favorable (e.g., The experimenter tested a representative sample) or unfavorable (e.g., I felt that the study had many flaws such as the students were only recent graduates and not a random selection) by two coders who were unaware of the participant's experimental condition (Cohen's kappa = .88); any differences were resolved by a third coder. A single selective cognitive elaboration score was computed by subtracting unfavorable from favorable thoughts, and then subtracting this difference for the anti-meritocracy study from the difference for the pro-meritocracy study. Higher numbers thus indicated a greater positive bias in elaborations (i.e., less critical thinking) toward the pro- versus anti-meritocracy study.

RESULTS AND DISCUSSION

Biased Judgment. We hypothesized that (a) participants would show a pro-meritocracy bias in judgment, evaluating the quality of evidence more favorably when it confirmed (vs. disconfirmed) the notion that hard work leads to success; (b) this bias would be greater when system justification motivation was heightened by reading a passage that undermined (vs. affirmed) the legitimacy of the societal status quo; and (c) the bias would be greater when the anti-meritocracy conclusion

was presented first (vs. second). To test these hypotheses, we conducted a 2 (conclusion type: pro-meritocracy vs. anti-meritocracy) by 2 (system threat: low vs. high) by 2 (order: anti-meritocracy conclusion first vs. second) mixed-design analysis of variance (ANOVA) with repeated measures on the first factor.[2]

This analysis revealed a significant main effect of conclusion type, $F(1, 107) = 16.66$, $p < .001$, $\eta_p^2 = .13$. As predicted, participants rated the quality of evidence as significantly better when that evidence was paired with a pro-meritocracy conclusion ($M = 7.71$) versus an anti-meritocracy conclusion ($M = 6.80$). Furthermore, as hypothesized, the effect of conclusion type on judged quality of the evidence was significantly moderated by system threat, $F(1, 107) = 4.12$, $p < .05$, $\eta_p^2 = .04$, and by order, $F(1, 107) = 5.46$, $p < .05$, $\eta_p^2 = .05$.[3] Importantly, the pro-meritocracy bias in judgment was greater following high (vs. low) system threat: Participants evaluated the pro- (vs. anti-) meritocracy study much more favorably following high system threat, $M = 8.03$ vs. $M = 6.66$, $t(56) = 4.31$, $p < .0001$, whereas this bias in judgment was smaller and no longer significant after the legitimacy of the social system had been affirmed, in the low system threat condition, $M = 7.39$ vs. $M = 6.93$, $p > .15$ (see Figure 1). Likewise, participants exhibited a strong bias in their judgments when the anti-meritocracy conclusion was presented first, $M = 7.99$ vs. $M = 6.56$, $t(55) = 4.46$, $p < .0001$, but not when it was presented second, $M = 7.43$ vs. $M = 7.04$, $p > .20$ (see Figure 2).[4]

2. Gender was also included in this analysis because a two-way interaction emerged between conclusion type and gender, $F(1, 107) = 10.42$, $p < .01$, $\eta_p^2 = .09$, such that females showed a greater pro-meritocracy bias than did males. Because the effect of gender on meritocracy defense was not replicated in Studies 2 and 3, however, we do not dwell on it here. Nonetheless, it is plausible that members of groups that are disadvantaged by the social system might be especially likely to defend meritocratic beliefs, at least in some situations. Although members of both advantaged and disadvantaged groups are motivated to justify the system, the disadvantaged sometimes evince even stronger system-justifying tendencies than the advantaged (e.g., Henry & Saul, 2006; Jost, Pelham, et al., 2003). Moreover, disadvantaged group members (e.g., women) might be particularly likely to use meritocratic beliefs as a means to system-justify because these beliefs have potentially favorable implications for self- and group-esteem (i.e., If anyone can succeed through hard work, then I/my group can as well, even if this hasn't happened yet). In other words, meritocratic beliefs suggest that a person or group's low status is fair but also potentially changeable. By contrast, many other system-justifying beliefs (e.g., stereotypical ascriptions of laziness or incompetence to low-status groups) are more obviously psychologically costly for disadvantaged group members (e.g., Jost & Hunyady, 2002; Jost & Thompson, 2000). Although it is beyond the scope of this article, future research should examine whether and when status-based group differences arise in the use of various means to justify the social system.

3. The three-way interaction was not significant.

4. It may be useful to note that the low system threat manipulation affirmed the legitimacy of the social system, and that reading the pro-meritocracy conclusion first was likewise predicted to affirm meritocratic beliefs. Whereas threatening a desired end state tends to heighten motivation to pursue that end state, affirmation of a desired end state can subdue motivation (e.g., Cohen et al., 2007; Ledgerwood, Liviatan, & Carnevale, 2007). Thus, in our study, affirming the social system could be expected to temporarily subdue the motivation to justify the societal status quo. Interestingly, participants assigned to this condition did not display a significant pro-meritocratic bias in judgment, suggesting that it might be possible to reduce the bias by assuaging the motivation to justify the social system. A parallel argument could be made for the condition in which participants read the pro-meritocracy conclusion first. However, it is important to note that within the system-affirmation condition, participants who saw an anti-meritocracy conclusion first still showed a significant pro-meritocracy bias. In fact, the significant pro-meritocracy bias in judgment was only eliminated for those participants who both read a system affirmation and also saw the pro-meritocracy conclusion first. Thus, at least in this study, fully eliminating the pro-meritocracy bias in judgment required two separate types of affirmation, highlighting the tenacity of these defensive processes.

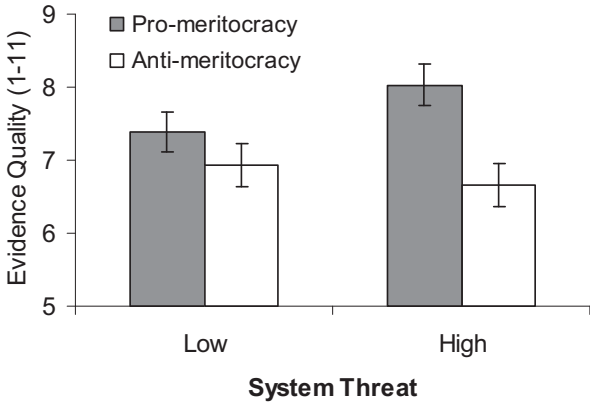

FIGURE 1. Mean judgments of the quality of evidence paired with pro-meritocracy and anti-meritocracy conclusions by participants under low vs. high system threat (Experiment 1). Error bars indicate one standard error above and below the mean.

Biased Thinking. To better understand the nature of the cognitive processes underlying the observed pro-meritocracy bias in judgment, we tested whether selective cognitive elaboration mediated the effect of conclusion type on judged quality of evidence. Such mediation would suggest that the bias in judgment did not reflect a simple heuristic decision about what to believe, but rather reflected selective judgment based on systematically processing relevant information in a biased fashion (see e.g., Pomerantz et al., 1995). Using Judd, Kenny, and McClelland's (2001) recommended procedures for testing mediation in a within-subjects design, we first conducted a paired-samples *t*-test to show that the study's conclusion type influenced cognitive elaboration. Results indicated that participants were significantly less critical of the study when it was paired with a pro-meritocracy (vs. anti-meritocracy) conclusion, $t(114) = 2.90$, $p < .01$. Next, we created a difference score to represent the degree of biased judgment by subtracting judgment of the anti-meritocracy study from judgment of the pro-meritocracy study for each participant (with higher numbers indicating a stronger bias in favor of the pro-meritocracy study). We then regressed this judgment difference score on the cognitive elaboration difference score (as well as on the centered sum of the cognitive elaboration scores, to avoid biased estimation of the mediation effect; see Judd et al., 2001). In such analyses, mediation is indicated when the difference score for the mediating variable significantly predicts the difference score for the outcome variable. (Unlike a between-subjects mediational analysis, one does not test whether a direct effect is reduced when the mediator is included in the analysis.) As hypothesized, the difference in cognitive elaboration significantly predicted the difference in judgment, $t(112) = 4.72$, $p < .001$; the intercept (an estimate of the difference in judgment due to condition that was not accounted for by our mediator) remained significant, $t(112) = 3.33$, $p < .01$. These results reveal that selective cognitive elaboration did in fact partially mediate the effect of conclusion on judgment.

Internal Analysis of Participants Who Explicitly Endorsed vs. Rejected the Belief in Meritocracy. It should be possible to distinguish empirically between defense of one's

FIGURE 2. Mean judgments of the quality of evidence paired with pro-meritocracy and anti-meritocracy conclusions made by participants exposed to the pro-meritocracy vs. anti-meritocracy conclusion first (Experiment 1).

own personal, prior beliefs (motivated by the desire to protect and defend the self) and defense of the social system (motivated by the desire to perceive the societal status quo as fair and legitimate). This could provide a critical test of whether the desire to justify the social system can motivate individuals to defend a system-serving belief even at the expense of a personal motivation to defend one's pre-existing beliefs. Although we could not measure pre-existing personal beliefs for all of the participants in our study, we were able to obtain such data for a subset of 48 participants who had previously reported whether they personally agreed with the notion that hard work leads to success when asked directly for their opinions earlier in the same semester. Specifically, participants were asked to rate their level of agreement on a 9-point scale (1 = Strongly Disagree; 9 = Strongly Agree) with three items that tapped the belief in meritocracy (If people work hard, they almost always get what they want, Most people who don't get ahead in our society should not blame the system; they have only themselves to blame, and Economic positions are legitimate reflections of people's achievements; $\alpha = .75$). We divided participants who had responded to this subscale into those who scored below the midpoint (i.e., disagreed with meritocratic beliefs; $n = 30$) and those who scored at or above the midpoint (i.e., agreed with meritocratic beliefs; $n = 18$).

A 2 (conclusion type: pro-meritocracy vs. anti-meritocracy) by 2 (pre-existing beliefs: agreed vs. disagreed) mixed-design ANOVA with repeated measures on the first factor yielded the expected main effect of conclusion on judgment, $F(1, 46) = 11.04$, $p < .01$, $\eta_p^2 = .19$, and this effect was not moderated by pre-existing beliefs, $F < 1$.[5] Follow-up paired sample t-tests confirmed that those participants who had previously endorsed meritocratic beliefs exhibited a marginally

5. Due to the small number of people for whom we could gather data on pre-existing beliefs, we unfortunately lacked the statistical power to appropriately test pre-existing beliefs as a potential moderating variable in our full 2 × 2 × 2 between-subjects design.

significant pro-meritocracy bias in judgment, $t(17) = 1.95$, $p = .07$. As both self-protective and system-protective accounts would predict, these participants judged evidence leading to a pro-meritocracy conclusion to be better in quality ($M = 8.31$) than evidence leading to an anti-meritocracy conclusion ($M = 6.86$). More importantly, and uniquely consistent with our theoretical account, those participants who had explicitly disavowed a belief in meritocracy also showed a significant pro-meritocracy bias in judgment, $t(29) = 2.79$, $p < .01$, rating the quality of evidence that led to a pro-meritocracy conclusion ($M = 7.80$) as stronger than the same kind of evidence when it led to an anti-meritocracy conclusion ($M = 6.63$). If participants were simply motivated to bolster their previously espoused personal beliefs, these anti-meritocracy participants should have shown an anti-meritocratic bias in their judgments. Instead, they showed a system-serving, pro-meritocracy bias, suggesting that despite their explicit personal beliefs, their implicit or indirectly measured preferences were shaped by a motivation to perceive the social system as fair and legitimate.

In summary, Experiment 1 demonstrated that participants were biased in their judgments about scientific studies, evaluating the same research evidence as higher in quality when it supported (vs. opposed) the notion that hard work leads to success. More importantly, consistent with the notion that this pro-meritocracy bias was motivated by a desire to preserve a view of the existing social system as fair and legitimate, the bias was heightened after participants read a passage designed to activate system justification motivation by undermining (vs. affirming) the legitimacy of the societal status quo. Furthermore, even individuals who explicitly disavowed a personal belief in meritocracy showed a system-serving, pro-meritocracy bias in judgment. Thus, whereas previous research has documented that people will engage in biased thinking in order to protect the self and maintain their pre-existing personal beliefs (e.g., Kunda, 1987; Lord et al., 1979; Major et al., 2007), the results of our first study suggest that people may also engage in biased thinking in order to preserve a view of the social system as fair and legitimate.

EXPERIMENT 2

The results of Experiment 1 support the notion that system justification motivates the cognitive defense of meritocratic beliefs. In Experiment 2, we sought to determine whether system-serving biases of this sort have significant behavioral ramifications, leading individuals to change their behavior in the service of the social system. Participants completed an anagram task in which they tried to unscramble letter strings into words. We selected this task because it had been previously used as a behavioral indicator in research on motivation (e.g., Shah, Higgins, & Friedman, 1998), and because we expected participants would find it plausible that anagram performance could be due to either luck or effort. We manipulated whether the instructions before the task attributed success on the task to luck or to effort, and whether the task was framed as relevant to evaluating the legitimacy of American society.

We reasoned that the attribution for success to luck or effort could influence participants' effort on the task in two ways. Historically, expectations have long been assumed to influence goal-directed behavior in a straightforward manner: the belief that one's behaviors will lead to the desired outcome has been found consistently to increase goal commitment and goal striving (Atkinson, 1964; Bandura, 1997; Carver & Scheier, 1998; Vroom, 1964). For instance, research has demonstrated that

an individual will exert effort on a group task insofar as he or she believes that increased effort will lead to improved performance (e.g., Karau & Williams, 1993). From this perspective, telling participants that success depends on effort should lead them to exert more effort, compared to telling them that success depends on luck.

However, from our perspective, implying that success depends on luck threatens the meritocratic ideal and might lead people to defend it. In Experiment 1, participants who first read about research leading to an anti-meritocracy conclusion were more biased in their judgments of evidence than those who first read about a pro-meritocracy conclusion. In other words, the anti-meritocracy conclusion increased cognitive defense of the connection between hard work and success. In Experiment 2, we therefore predicted that presenting participants with a statement suggesting that task-related success is due to luck should have similar effects; namely, it should threaten the link between hard work and success and increase the motivation to defend this link. In contrast, suggesting that success is due to effort should affirm the link between hard work and success and therefore decrease defensive motivation. From this perspective, participants might paradoxically exert more effort when presented with the meritocracy-challenging suggestion that effort will not help them succeed, compared to the meritocracy-affirming suggestion that effort leads to success.

It is possible, of course, that individuals simply like to believe that by exerting effort, they can attain a desired end, especially given that this belief forms the foundation of effective goal pursuit (Atkinson & Reitman, 1956). Thus, they might defend a link between hard work and success in order to preserve the positive expectancy that personal effort will produce a desired result. We therefore included a manipulation of system-relevance, in order to determine whether system justification motivation would lead people to defend a link between effort and success above and beyond any personal desire to protect positive expectancies during goal pursuit. Insofar as the defensive tendency to work harder on a task when success is attributed to luck (vs. effort) serves a system-justifying function, it should be more likely to emerge when the link between hard work and success is framed as relevant to the social system, rather than irrelevant. We therefore predicted an interaction between attribution for success and system-relevance, such that the paradoxical tendency to exert more effort after reading that success is based on luck (vs. effort) would be greater in the system-relevant condition, compared to baseline levels of effort in the system-irrelevant condition.

METHOD

Participants and Design. Seventy-seven NYU undergraduates (47 female) were randomly assigned to one cell of a 2 (system-relevance: irrelevant vs. relevant) × 2 (success attribution: luck vs. effort) between-subjects design.

System Relevance Manipulation. Students learned that they would be participating in a study about the relation between effort and doing well in scrambled word tasks (system-irrelevant condition) or the relationship between effort and doing well in American society (system-relevant condition).

Success Attribution Manipulation. Participants who were assigned to the luck condition then read that previous research suggested that success on such tasks was "mainly a result of luck. In other words, no matter how hard people try, they

don't tend to do any better." In the effort condition, participants instead read that success on such tasks was "mainly a result of effort. In other words, the more people try, the better they tend to do." In the system-relevant conditions, these statements were preceded by the phrase, "Just like in our society," to further underscore the link between the task and the social system.

Dependent Measure: Effort. Participants then completed an anagram task adapted from Shah et al. (1998), in which they were asked to unscramble letter strings to form as many words as possible. After seeing a sample anagram, participants were given as much time as they wanted to unscramble ten strings of letters. Effort was measured as the proportion of anagrams solved (i.e., the number of correct solutions found divided by 26, which was the total number of possible correct solutions).[6] At the end of the study, participants were probed for suspicion, thanked, and debriefed.

RESULTS AND DISCUSSION

To test whether behavioral defense increased when the anagram task was system-relevant (vs. irrelevant), we conducted a 2 (system-relevance: relevant vs. irrelevant) × 2 (success attribution: effort vs. luck) ANOVA with performance on the anagram task (proportion of possible words solved) as the dependent variable. There was no main effect of system-relevance or success attribution, Fs < 1.03. In accordance with our focal hypothesis that system-relevance would moderate the effect of success attribution on effort, there was a significant interaction between system-relevance and success attribution, $F(1, 73) = 3.94$, $p = .05$, $\eta_p^2 = .05$. As Figure 3 illustrates, the tendency for participants to solve more anagrams when they were told that success depends on effort (vs. luck) in the system-irrelevant condition (Ms = .48 vs. .44), $F < 1$, reversed when the task was framed as system-relevant (Ms = .43 vs. .54), $F(1, 73) = 4.55$, $p < .05$, $\eta_p^2 = .06$.

These results build upon those of Experiment 1 to suggest that people will adjust not only their thinking, but their actual behavior in order to defend a system-serving belief in meritocracy. In the system-irrelevant control condition, participants showed, if anything, a slight tendency to work harder on the anagram task when they believed that success depended on effort (vs. luck), consistent with classic findings on expectations and behavior. However, when the task was seen as system-relevant, this pattern reversed: individuals actually solved more anagrams after reading that success depended on luck (vs. effort). This interaction suggests that relative to the control condition, the motivation to bolster the connection between hard work and success increased when the task seemed relevant to the social system as a whole, and therefore had implications for system legitimacy.

EXPERIMENT 3

The results of our first two experiments support the notion that the motivation to defend and legitimize the social system can change how individuals think and

6. As in previous research, proportion of anagrams solved was considered a more appropriate behavioral indicator of motivation than time spent on the task because time could be substantially impacted by individual differences in ability (Shah et al., 1998).

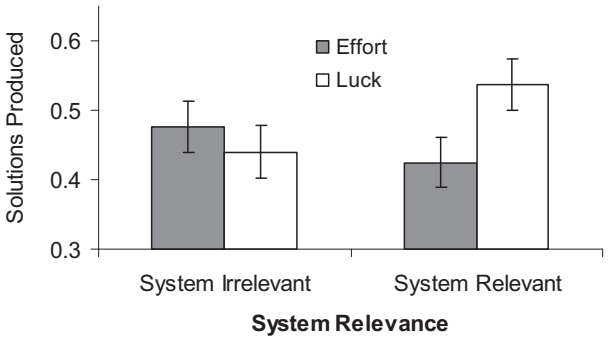

FIGURE 3. Proportion of anagram solutions produced (out of 26 possible) by participants as a function of success attribution and system-relevance (Experiment 2).

behave in response to information about meritocracy. In Experiment 1, for example, participants who explicitly disavowed a belief in meritocracy showed a system-serving, pro-meritocracy bias in judgment, rather than a self-protective, anti-meritocracy bias (e.g., defending their personal beliefs or worldview). One could argue, however, that the participants in Experiment 2 might have personally endorsed meritocratic beliefs, so that behaviorally defending the American Dream may have served a self-protective as well as system-protective function,[7] and that the manipulation of system relevance somehow increased the motivation to protect one's own personal beliefs. Therefore, Experiment 3 sought to provide a more conservative test of our hypothesis by limiting our sample to individuals whose personal beliefs conflicted with the system-justifying notion that effort leads to success. We pre-selected only participants who espoused anti-meritocratic beliefs to take part in a study that was similar to Experiment 2. We hypothesized that even for participants who did not personally endorse the connection between hard work and success in society, behavioral defense of the meritocratic ideal would increase when a task was seen as related (vs. unrelated) to the social system, thereby engaging the motivation to rationalize the societal status quo.

METHOD

Pretest: Personal Belief in Meritocracy. NYU undergraduates responded to the same items used to assess meritocracy in Study 1, as part of a battery of questionnaires completed at the beginning of the semester. These three items were averaged to form an index of personal belief in meritocracy (α = .67).

Participants and Design. Forty NYU students (26 female, 11 male, and 3 unreported) who scored below the midpoint of the personal meritocracy belief scale

7. Although this is possible, it seems unlikely that most of our Experiment 2 participants personally endorsed meritocratic beliefs. Data collected in the same semester suggests that, on average, participants in our subject pool actually disagreed slightly with the same three meritocratic statements used in Experiment 1: In a sample of 502 undergraduate psychology students, mean endorsement of our 9-point meritocracy scale (α = .73) was below the midpoint (M = 4.31, SD = 1.60).

(i.e., who indicated disagreement with meritocratic beliefs) participated in the study as partial fulfillment of a course requirement. The study design was identical to that of Experiment 2, except for the changes described below.

Success Attribution and System Relevance Manipulations. The manipulations were adapted for "picture detection tasks" (see below), rather than scrambled word tasks.

Dependent Measure: Effort. In order to triangulate on our conceptual variable of interest, we operationalized effort as the number of solutions attempted for an impossible task (rather than the number of correct solutions obtained). In addition, we used a novel visual task with which participants were likely to have little experience (rather than the anagram task) to minimize the extent to which participants' assumptions about their own skill at the task could potentially interfere with their acceptance of our success attribution manipulation. We therefore presented participants with an impossible Gestalt Completion Task adapted from Smith and Trope (2006, Study 5). Participants were told that they would see a series of incomplete pictures and that their task was to figure out what each picture was and to type their answer in the box provided. The instructions also noted that if they could not figure out the answer to a picture, they could simply type "x" in the box to move on to the next one. In reality, the target sets of picture fragments had been randomly scrambled so that no correct solutions existed. Effort was measured as the total number of answers attempted by participants (i.e., how many times they tried to guess a solution, rather than giving up and typing x), out of the 20 incomplete pictures for which they could potentially provide a response. After completing the picture task, participants were probed for suspicion, thanked, and debriefed.

RESULTS AND DISCUSSION

To examine whether behavioral defense increased when the picture detection task was system-relevant (vs. irrelevant), even for participants who had explicitly disavowed a belief in meritocracy, we conducted a 2 (system relevance: relevant vs. irrelevant) × 2 (success attribution: effort vs. luck) ANOVA on the number of picture solutions attempted. There were no main effects, Fs < 1. Supporting our key prediction that system-relevance would moderate the effect of success attribution on effort, the interaction between system-relevance and success attribution was significant, F (1, 36) = 7.13, p = .01, η_p^2 = .17. As can be seen in Figure 4, the tendency for participants to attempt a higher proportion of solutions when they were told that success depended on effort (vs. luck) in the system-irrelevant condition (Ms = .89 vs. .22), F(1, 36) = 6.49, p < .05, η_p^2 = .15, reversed when the task was made system-relevant (Ms = .23 vs. .36), F(1, 36) = 1.51, p = .23, η_p^2 = .04.

The results of our third study thus replicate the key interaction we observed in Experiment 2 between system relevance and attribution for success. In our baseline, system-irrelevant condition, expectations seemed to play the strongest role in influencing behavior. That is, participants put more effort into solving an impossible task when they were told that effort leads to success. However, as in Experiment 2, this tendency diminished and even reversed when the task was seen as relevant to the social system, suggesting that system relevance increased behavioral defense of the link between hard work and success.

Although we made no specific predictions for Experiments 2 and 3 about the extent to which our baseline (system-irrelevant) condition would reflect the effects of expectations versus motivated defense, it is interesting to note that the relative impact of expectations seemed to be stronger in Experiment 3 than in Experiment 2. Specifically, in Experiment 3, participants in the system-irrelevant condition worked significantly harder in the effort (vs. luck) attribution condition; in Experiment 2, this trend (although in the same direction) was not significant. One potential explanation for this pattern could be the difference between our two samples in terms of personal endorsement of meritocratic beliefs. In Experiment 2, suggesting that success depends on luck may have motivated ego-defensive behavior (increased effort) for those participants who personally endorsed a link between hard work and success, which would have decreased the relative impact of expectations on behavior. In Experiment 3, however, the same statement would have affirmed the beliefs of our pre-selected anti-meritocratic participants, which could have magnified the impact of expectations. Importantly, despite these variations in our baseline conditions, both experiments show the same interactive effect whereby the relative impact of motivated defense significantly increased when the task was made system-relevant. In other words, regardless of the baseline pattern in the system-irrelevant conditions, system relevance exerted a similar effect in both experiments, overriding and even reversing participants' tendency to work harder when they were told that success depends on effort.[8] This suggests that for both samples, system relevance engaged a system-justifying behavioral response.

GENERAL DISCUSSION

The results of these three experiments suggest that the desire to preserve a view of the social system as fair and just motivates the cognitive and behavioral defense of meritocratic beliefs. In Experiment 1, participants exhibited a pro-meritocracy bias in their cognitions, judging objectively equivalent evidence as better in quality when it led to a pro-meritocracy (vs. anti-meritocracy) conclusion. Importantly, this bias in judgment was exacerbated following (a) a situational threat to the social system in general, and (b) a threat to meritocratic beliefs in particular. Experiments 2 and 3 demonstrated that people will also engage in behavioral defense of the link between hard work and success, as long as their efforts are seen as relevant to evaluating the social system.

BEYOND THE DEFENSE OF PERSONAL BELIEFS AND WORLDVIEWS

Importantly, these findings move beyond typical accounts of ego-defensive or self-protective motives in social cognition that focus on the desire to protect and bolster one's pre-existing beliefs and personal worldviews (e.g., Anson, Pyszczynski, Solomon, & Greenberg, 2009; Chaiken & Ledgerwood, in press; Chaiken, Liberman, & Eagly, 1989; Eliezer, Townsend, Sawyer, Major, & Mendes, 2011; Major et al., 2007; Major & Townsend, 2010; Wood, 2000) to suggest that social cognition

8. Unsurprisingly, whether the system relevance manipulation causes the effect in the system-irrelevant condition to attenuate or significantly reverse seems to depend upon the strength of the baseline tendency that must first be overridden.

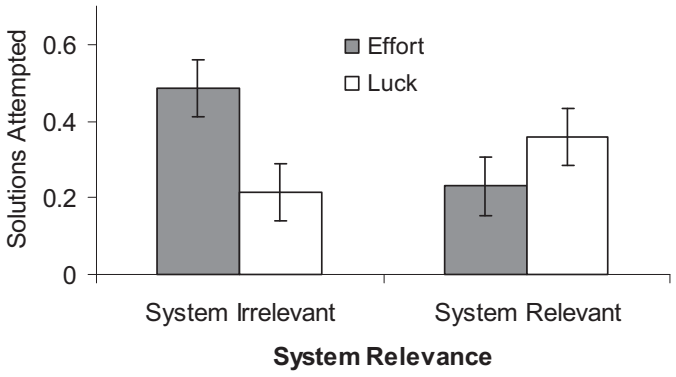

FIGURE 4. Proportion of insoluble picture identifications guessed (out of 20 possible) by participants as a function of success attribution and system relevance (Experiment 3).

and even behavior may also be biased by a motivation to defend the social system. In Experiment 1, a system threat manipulation previously shown to selectively threaten the system (but not personal self-esteem) increased cognitive biases in a system-serving direction. Furthermore, internal analyses revealed that even individuals who did not explicitly endorse a personal belief that hard work generally leads to success in society favored evidence that supported a system-serving, pro-meritocracy conclusion over objectively equivalent evidence that led to an anti-meritocracy conclusion (even though the latter conclusion would have helped to bolster their own personal beliefs). In Experiment 2, portraying the task as diagnostic of the social system strengthened participants' behavioral defense of meritocracy, above and beyond their baseline defense levels in the system-irrelevant condition. Finally, in Experiment 3, we found that even individuals who did not personally endorse the link between hard work and success defended this link behaviorally when it was seen as relevant to the social system. Taken together, these findings provide strong support for the notion that meritocratic beliefs are defended in the service of the social system *per se*, and not just in the service of one's personal beliefs or worldview.

IMPLICATIONS FOR UNDERSTANDING MERITOCRATIC BELIEFS

These studies also provide an important complement to the literature on the correlates and consequences of meritocratic beliefs. Researchers now know a great deal about how these beliefs influence a wide range of variables, including judgments about low-status social groups, perceptions of discrimination, and well-being (Biernat et al., 1996; Jost, Pelham, et al., 2003; Katz & Hass, 1988; Mandisodza, Jost, & Unzueta, 2006; O'Brien & Major, 2009; Quinn & Crocker, 1999). For instance, McCoy and Major (2007) demonstrated that priming meritocratic (vs. neutral) concepts led female participants to rate themselves as more stereotypical (more warm and less competent), and to endorse gender stereotypes more strongly, suggesting that the salience of meritocratic ideas can activate system-justifying tendencies.

Interestingly, this only occurred when participants had first read an article on sexism (vs. a neutral article), leading the researchers to conclude that the sexism article prompted increased system justification in defense of the activated meritocratic belief system. In other words, this research suggests that the popularity of meritocratic themes in American society fuels system justification in the form of self- and group-stereotyping, especially when system-challenging information is encountered.

The present research sought to explore the other side of this coin by examining how the motivation to justify the social system might fuel meritocratic beliefs. Our results suggest that system justification motivation engages defensive cognitive and behavioral processes to protect and bolster the notion that hard work leads to success in society, even in the face of contradictory evidence. These findings help to explain the popularity and appeal of meritocratic beliefs by suggesting that they serve a system justification function. Moreover, they allow us to predict when meritocratic beliefs are likely to be especially popular: for instance, in the aftermath of a threat to the social system (such as the U.S. government failures following Hurricane Katrina; see also Napier et al., 2006).

BEHAVIORAL CONSEQUENCES OF SYSTEM JUSTIFICATION

Perhaps most importantly, the results of our experiments highlight some of the behavioral consequences of system justification, which have thus far received little attention in the literature, and suggest some nonintuitive predictions for when individuals will exert effort on a task. For example, effort may increase when meritocracy is threatened, as in Experiments 2 and 3. Ironically, then, informing people that effort will not help them succeed may sometimes increase the effort they exert, insofar as their work in a given context is seen as diagnostic of the legitimacy of the social system as a whole. Thus, in the face of information about obstacles to success, such as evidence of low social boundary permeability, individuals may paradoxically exert additional effort in a motivated attempt to prove that hard work does in fact lead to success. Furthermore, although not directly tested here, behavioral effort may also increase when a person's overall motivation to justify the social system is high (e.g., after system threat, or for individuals who are chronically highly motivated to justify the system).

IMPLICATIONS FOR SOCIAL CHANGE

Our findings may also have sobering implications for those hoping to effect social change. It is tempting to assume that both policy-makers and the public can be persuaded by the presentation of objective, scientific evidence. However, the current results complement and extend previous research to suggest that such evidence may be met with skepticism and evaluated in a biased fashion not only to the extent that it challenges the validity of personally endorsed beliefs (e.g., Pomerantz et al., 1995), but also when it challenges the legitimacy of the social system. Moreover, questioning the link between hard work and success may make people work harder in the service of the social system—perhaps even when structural inequalities undermine the connection between effort and success, making it nearly impossible for some members of society to succeed.

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