

SPREADING RATIONALIZATION: INCREASED SUPPORT FOR LARGE-SCALE AND SMALL-SCALE SOCIAL SYSTEMS FOLLOWING SYSTEM THREAT

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System justification theory suggests that individuals defend and rationalize aspects of prevailing social systems, especially in response to system threat. In two experiments we extend this framework by demonstrating that people rationalize small-scale social systems (e.g., local popularity hierarchies and the nuclear family) as well as large-scale social systems (e.g., American society). Furthermore, we find that system threat leads people to bolster not only the legitimacy of the social system that is directly threatened but also the legitimacy of systems at other levels of analysis. These results provide evidence of spreading rationalization, suggesting that people respond defensively to other social systems when one system that they belong to is criticized or attacked.

As individuals functioning within social contexts, each of us simultaneously hold positions in multiple social networks. These can range in size and complexity from families and friendship cliques to formal organizations and societal institutions. While each of these networks undoubtedly has its own set of unique

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characteristics, even those situated at quite different levels of analysis (e.g., micro vs. macro) may share a set of common features. According to a sociological perspective known as systems analysis, the different networks or structures within which an individual is embedded can be modeled as relatively independent social systems, although each is governed by analogous structural and functional rules and regularities (Buckley, 1968; Tubbs, 1978). This approach has been fruitful in allowing researchers to adopt a common framework in analyzing the dynamics of various social systems and their effects on individuals within those systems (e.g., Cook & Whitmeyer, 1992; Parsons, 1950; Straus, 1962).

Whereas sociologists tend to emphasize the dynamics of social systems and, occasionally, their effects on individuals, psychologists have focused more on the cognitive and motivational underpinnings of individuals' allegiances to these systems. For example, theory and research on system justification suggests that individuals are motivated to defend, bolster, and justify the social systems in which they function (e.g., Jost & Banaji, 1994; Jost, Banaji, & Nosek, 2004). The idea is that people have epistemic needs to reduce uncertainty, existential needs to manage threat, and relational needs to affiliate with others, and that belonging to and upholding the legitimacy of a social system satisfies these needs (Jost & Hunyady, 2005; Jost, Ledgerwood, & Hardin, 2008). In other words, social systems provide order and structure while at the same time creating shared experiences and cultural meaning; because of this, system justification fulfills the quests for coherence and meaning that are driven by underlying epistemic and existential concerns (see also Greenberg, Koole, & Pyszczynski, 2004; Stapel & Noordewier, 2011).

Indeed, experimental studies examining defensive, motivational aspects of system justification reveal that people cling more strongly to the societal status quo following threats to its legitimacy or stability (e.g., see Jost & Hunyady, 2002). For instance, studies conducted in Israel (Jost, Kivetz, Rubini, Guermendi, & Mosso, 2005) and the United States (Kay, Jost, & Young, 2005) demonstrate that system threat leads people to increasingly endorse complementary, system-justifying stereotypes of high and low status groups (see also Laurin, Kay, & Shepherd, 2011; Stapel & Noordewier, 2011). In addition, Ledgerwood, Jost, Mandisodza, and Pohl (2011) found that system threat exacerbates system-justifying biases in cognition, so that people are even more prone than usual to favor information that supports rather than challenges the verisimilitude of the American Dream. Thus, it appears that system threat triggers defensive reactions that lead people to bolster and justify the system in various ways (see also Ullrich & Cohrs, 2007).

While system justification research has successfully drawn attention to the ideological and motivational aspects of system support, there are still many manifestations of system justification that remain to be explored. For instance, system justification theory offers predictions about the motivational dynamics inherent in any type of social system, but empirical research has largely focused on understanding the antecedents, mechanisms, and consequences of allegiance to large-scale social systems, such as national, political, or economic institutions (see Jost et al., 2004; Jost & Hunyady, 2002, 2005, for reviews). The general thrust of the theory, however, suggests that people should also be motivated to rationalize local, small-scale social systems such as families and friendship networks. If this is the case, then just as national threats lead to increased support for the American system,

threats to the legitimacy or stability of a small-scale social system should also stimulate a defensive reaction.

Furthermore, to the extent that the different micro and macro social systems to which an individual belongs comprise the overarching status quo, it seems likely that a general motivation to justify the status quo (i.e., a system justification goal, see Jost et al., 2010) would be linked to each of these systems, and, moreover, that there would exist associative connections among the various social systems themselves. Accordingly, threats directed at any given social system (one facet of the status quo) should activate the entire system justification motivational network, thereby eliciting not only rationalization of the directly threatened social system, but also a spreading of rationalization from one level of analysis to others. Consider, for example, a college student who belongs to a family system, a peer network system, a Greek fraternity or sorority system, the university system, the capitalist system, a national system, and so on, all at the same time. A threat directed at any one of these systems should prompt the need to reassert the legitimacy and stability of the status quo, both as it pertains to the specific social system that was threatened but also more generally in terms of other aspects of the individual's ideological life. Accordingly, a threat directed at the legitimacy or stability of any system to which the student belongs should lead him or her to increase support for any important social system to which he or she belongs. Phrased more generally, we believe that system threat triggers a general desire to uphold and legitimize the status quo, and this leads the individual to legitimize social arrangements at multiple levels of analysis (ranging from the micro to the macro). If this proposition is correct, it would not only significantly expand our understanding of the motivational responses elicited by system threat, but, at a broader level, it would suggest that there are psychological connections that link relatively disparate aspects of the status quo.

Indeed, the thrust of this argument is consistent with a number of recent approaches that seek to find commonalities and linkages among seemingly disparate effects. For example, within the domain of the self-concept, proponents of self-affirmation theory propose an underlying motivation of general self-integrity; threats to and affirmations of the self in different domains presumably affect one another via this shared association (for a review, see Sherman & Cohen, 2006). Similarly, terror management theorists identify an extremely wide range of otherwise unrelated processes that people use to overcome existential angst and death anxiety (e.g., Arndt, Greenberg, & Cook, 2002; Solomon, Greenberg, & Pyszczynski, 2004). In this way, the theory links disparate outcome variables such as political attitudes (Landau et al., 2004), preference for classical vs. abstract art (Landau, Greenberg, Solomon, Pyszczynski, & Martens, 2006), supernatural beliefs (Norenzayan & Hansen, 2006), and the desire for success-symbolizing possessions (e.g., Mandel & Heine, 1999), to name just a few. In a similarly integrative spirit, Kay, Gaucher, Napier, Callan, & Laurin (2008) argue that perceived personal control is a key variable that underlies support for disparate external systems; in their model, support for various external systems such as those associated with the government and with religion are linked in that they are similarly used to cope with the perceived lack of personal control (see also Rutjens & Loseman, 2010). Finally, Heine and colleagues argue in their meaning maintenance model that a key motivator is the individual's search for meaning, or an expected set of relationships and associations that people construct and impose on the world (Heine, Proulx, &

Vohs, 2006; Proulx & Heine, 2008). Threats to a sense of meaning can arise in many different domains, and people are thought to compensate fluidly for such threats by reaffirming alternative frameworks.

While different in terms of the particulars of their argumentation, what these theoretical models have in common is a spirit of unification that seeks to find connections among seemingly disparate processes and outcomes, all of which points to intriguing ways in which such processes and outcomes affect one another. In the current work, our goal is to explore the way in which processes of system justification might similarly operate at different levels of analysis. This, in turn, would suggest that processes of ideological justification for disparate social systems are psychologically linked. We pursued these ideas in two experiments that investigated two types of small-scale social systems. In Study 1, we examined the manner in which high school students would be motivated to legitimize both the American national system and the high school popularity system in response to threats directed at either of the two systems. In Study 2, we extended these results by investigating college students' degree of support for the American system and the nuclear family system, again in response to threats directed at either of the two systems. In each of these experiments we hypothesized that threatening either the large-scale or small-scale system would stimulate enhanced rationalization of both the threatened and nonthreatened systems, as compared to a baseline control group that did not experience any system threat.

EXPERIMENT 1

In our first study, we focused on a small-scale social system that is familiar to all current or former high school students, namely, the high school popularity system. Many have noted the way in which popularity in high school is structured as a hierarchical system with accompanying rules and social norms (e.g., Cairns, Perrin, & Cairns, 1985; Coie, Dodge, & Coppotelli, 1982; Wiseman, 2002). This highly engaging small-scale social system thus provided a rich and meaningful context in which to investigate the effects of threats to small-scale and large-scale social systems. We hypothesized that threatening the high school popularity system would lead to increased support for this system and that it would also lead to increased support for other social systems at different levels of analysis. Thus, relative to a baseline control group, we predicted heightened ideological support for both the American and high school systems when a threat was directed at either one.

METHOD

Participants

One-hundred and twenty-five high school seniors (53 male, 69 female, 3 unknown) in Long Island, New York, participated as part of a classroom exercise.

Procedure

Participants were randomly assigned to one of three experimental conditions in which they either read a system threat passage or did not read such a passage.

Participants were instructed to read the passage carefully because they might be asked questions about it later in the study. Afterward they completed surveys designed to measure large-scale and small-scale system justification. These surveys were presented consecutively, with no break between them.

Experimental Manipulation of System Threat. In the large-scale system threat condition, participants read the following passage, derived from Kay et al. (2005), in which the legitimacy and stability of the American political system was threatened:

These days, many people in the United States feel disappointed with the nation's condition. Many citizens feel that the country has reached a low point in terms of social, economic, and political factors. Ever since the terrorist attacks of 9/11, people do not feel as safe and secure as they used to, and there is a sense of uncertainty and pessimism regarding the country's future. Many believe that the country is on a course to failure and ruin with the current course American society is going. It seems that many countries in the world are enjoying superior social, economic, and political conditions than the U.S. More and more Americans express a willingness to leave the United States and emigrate to other nations.

In the small-scale system threat condition, participants instead read the following passage, which was created for the current study, in which the legitimacy and stability of the high school social hierarchy was threatened:

According to the Adolescent Social Psychology Organization, teenage friendships and cliques are more fragile and potentially harmful than ever. A recent study found that teenagers are likely to switch friends and cliques more than four times in high school. After high school, only 5% of high school friends actually stay in touch throughout college. Many college freshmen who may have been very popular in high school find themselves unpopular and not the "big man on campus" as they were accustomed to in high school.

Finally, participants assigned to the control group provided baseline data and were not exposed to any potentially system-threatening material.

Measurement of System Justification. All participants completed two measures of system justification; their order was counterbalanced across participants. Because order did not reliably affect the dependent measures, it was not included in statistical analyses reported in this article. (We return to this issue in the General Discussion.) Participants were simply instructed to fill out each of the surveys to the best of their abilities. For the control group, these were the first experimental materials participants encountered.

A measure of national system justification was slightly adapted (for a high school population) from the general (American) system justification scale developed by Kay and Jost (2003; see also Jost & Kay, 2005). Items were as follows: (1) In general, America is just and fair; (2) In general, American society operates as it should; (3) America needs to be restructured (reverse-scored); (4) America is the best country in the world; (5) America serves the greatest good for its citizens; (6) Everyone in America has a fair shot at wealth and happiness; (7) America is getting worse every year (reverse-scored); and (8) America is set up so that people usually get what they deserve. Participants indicated their level of agreement with each statement on a 9-point scale ranging from 1 (strongly disagree) to 9 (strongly agree). An

American system justification score was calculated for each participant by taking the mean of responses to the 8 items ($\alpha = .88$).

Participants also completed a new instrument that measured justification of the high school social system. This scale was constructed by changing the wording of each item in the Kay and Jost (2003) scale so that it referred to the high school social system. Items were worded as follows: (1) In general, popularity and the social network at your high school are fair; (2) In general, high school popularity and cliques operate as they should at [this high school]; (3) Popularity and the social network at your high school need to be restructured (reverse-scored); (4) The student social structure at [this high school] is the best of all high schools in Long Island; (5) High school popularity and cliques serve the greatest good for teenagers; (6) Every person has a fair shot at becoming popular; (7) Your high school's clique problem is getting worse every year (reverse-scored); and (8) People that do not have friends deserve not to be popular. Responses were given on the same 9-point scale described above, and an overall high school system justification score was obtained by taking the mean of responses to all 8 items ($\alpha = .87$). Scores on the two system justification scales were intercorrelated, $r = .54, p < .001$.

RESULTS AND DISCUSSION

We expected to see elevated system justification scores on both measures in the American system and family system threat conditions, as compared to the baseline control condition. We therefore conducted a 3 (threat condition: large-scale system threat; small-scale system threat; no threat control) \times 2 (type of system justification: American system justification; high school system justification) mixed design analysis of variance (ANOVA) with system threat as a between-subjects factor and system justification type as a within-subjects factor. This analysis enabled us to determine the effect of system threat on both types of system justification and to examine whether the pattern differed across the two system justification measures.

The analysis yielded a main effect of system threat condition, $F(2, 122) = 19.66, p < .001$, partial $\eta^2 = .24$. As hypothesized, participants were indeed more likely to engage in system justification (both types combined) following either small-scale ($M = 5.91, SE = .19$) or large-scale ($M = 5.91, SE = .20$) system threats, as compared with the control condition ($M = 4.46, SE = .19$), $ps < .001$ for each LSD test. There was also a marginal trend for respondents to justify the American system more strongly than the high school popularity system, $F(1, 122) = 3.69, p = .06$, partial $\eta^2 = .03$. Furthermore, the analysis yielded a significant two-way interaction between system threat and system justification type, $F(2, 122) = 3.97, p < .05$, partial $\eta^2 = .06$. Inspection of cell means indicates that somewhat greater justification occurred when the threat and justification measure were related to the same social system than when they were related to different social systems (see Figure 1).

At the same time, follow-up univariate ANOVAs that enabled us to independently examine the effects of system threat on the two types of system justification measures confirmed that the predicted effect was observed for each measure. More specifically, the presence of system threat significantly increased support for the American system, $F(2, 122) = 12.73, p < .001$, partial $\eta^2 = .17$, and follow-up LSD tests revealed that participants justified the American system more strongly following exposure to the American system threat ($M = 6.19, SE = .22$) and the high school system threat ($M = 5.77, SE = .22$), in comparison with control participants

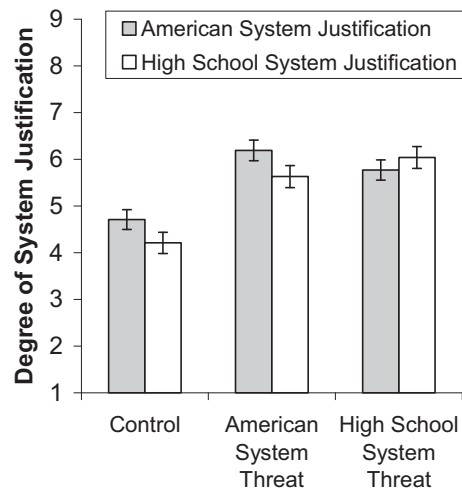


FIGURE 1. Justification of the American system and high school popularity system as a function of system threat condition.

($M = 4.71$, $SE = .21$; $ps \leq .001$). Means in the two system threat conditions did not differ reliably from one another.

Likewise, the presence of system threat significantly increased support for the high school system, $F(2, 122) = 17.71$, $p < .001$, partial $\eta^2 = .23$. LSD tests indicated that people justified the high school system more strongly following exposure to the high school system threat ($M = 6.05$, $SE = .23$) and American system threat ($M = 5.63$, $SE = .24$) passages, in comparison with control participants ($M = 4.21$, $SE = .23$; $ps < .001$). As before, means in the two system threat conditions did not differ significantly from one another. Therefore, although a significant interaction between the system threat condition and justification measures suggests a tendency for people to justify more strongly the system that had been directly criticized, results from univariate ANOVAs reveal a consistent pattern whereby large-scale and small-scale system threats increased both types of system justification. We obtained evidence in Experiment 1 not only for the rationalization of small-scale systems, then, but also for the phenomenon of spreading rationalization, whereby people respond defensively to other social systems when one system that they belong to is criticized or attacked.

EXPERIMENT 2

Our second experiment replicated and extended the first by focusing on a different small-scale social system, namely that of the nuclear family (see, *inter alia*, Garbarino & Abramowitz, 1992; Parsons, 1950; Straus, 1962, for discussions of the family as a social system). In addition, we included measures of self-esteem to assess potential effects of our manipulations on self-justification (as well as system justification). This enabled us to examine whether system threat specifically activates system justification motives or more broadly activates other types of motives such as self-enhancement.

METHOD

Participants

Sixty undergraduates (19 men; 38 women; 3 unknown) at New York University participated in Experiment 2 as part of a course requirement.¹

Procedure

Participants were ostensibly asked to pilot test a set of materials. Those assigned to the American system threat and family system threat conditions were first presented with an excerpt, purportedly written by a journalist, that contained the threat manipulation. After reading the excerpt, participants responded to a series of questions about its exposition (e.g., Do you think this passage was clearly worded?). After answering these questions, participants were told that they had reached the end of the pilot study, so as to minimize suspicion concerning the purpose of the experiment and to obscure the connection between the system threat passages and the dependent variables. Participants assigned to the American system threat condition read the same passage used in Experiment 1, and participants assigned to the control group again read no passage. Participants assigned to the family threat condition read the following:

According to the Family Matters Organization, starting college makes incoming students realize that the family unit is a fragile entity. Divorce rates have skyrocketed in recent years, as has the trend of husbands and wives engaging in adulterous affairs. Further, with both parents in a household often working, less time is devoted to running the family, leaving family members to grow apart, to the point where there are often little in the way of familial bonds. Incoming college students, in particular, find themselves even further detached from the familial unit, living without the support of their family. After 18 years of living with their family and then suddenly being on their own, many students question the stability and legitimacy of their family structure.

Participants then completed a series of questionnaires, which were presented as part of a separate study.

The Kay and Jost (2003) American system justification scale ($\alpha = .88$) was used to measure support for the American system, and a scale designed to measure participants' justification of their own family system was constructed by changing the wording of each item in the Kay and Jost (2003) scale so that it referred to the nuclear family. Items on the latter scale were worded as follows: (1) In general, your family is just and fair; (2) In general, your family operates as it should; (3) The way things work in your family needs to be restructured (reverse-scored); (4) Your family is the greatest family in your city; (5) Your family serves the greatest good for its members; (6) Everyone in your family has a fair shot at being the center of attention; (7) Your family is getting worse every year (reverse-scored); and (8) Your family is set up so that members usually get what they deserve. An overall family system justification

1. Four additional participants who reported familiarity with the system justification threat passage or measures and four participants who failed an attention check were not included in the analysis.

score was calculated by taking the mean of all 8 items ($\alpha = .90$). The American and family system justification measures used similar formatting and were presented consecutively. Scores on the two scales were weakly intercorrelated at .10 ($p = .43$).

As in Study 1, the order of the two system justification scales was counterbalanced, but this did not influence the results. After completing the two system justification measures, participants completed measures of state self-esteem (Heatherton & Polivy, 1991) and trait self-esteem (Rosenberg, 1965). To determine whether the two system threat paragraphs were seen as equivalent in terms of relevance to participants' lives, we asked participants assigned to the two threat conditions how personally relevant they found the journalistic passage to be, using a response scale ranging from (1) not at all to (7) very much.

RESULTS AND DISCUSSION

To estimate the effect of system threat on system justification and to investigate whether this pattern differed across the two system justification measures, we conducted a 3 (threat condition: large-scale system threat; small-scale system threat; no threat control) \times 2 (type of system justification: American system justification; family system justification) mixed design ANOVA with system threat condition as a between-subjects factor and system justification type as a within-subjects factor. The analysis yielded a main effect of system justification type such that people justified their family system ($M = 6.07$; $SE = .21$) more strongly than the American system ($M = 4.49$; $SE = 2.1$), $F(1, 57) = 30.40$, $p < .001$, partial $\eta^2 = .35$. The analysis also revealed a main effect of system threat condition, $F(2, 57) = 3.64$, $p < .05$, partial $\eta^2 = .11$. LSD post hoc tests indicated that participants engaged in system justification more strongly following exposure to American system threat ($M = 5.63$, $SE = .26$) and family system threat ($M = 5.49$, $SE = .29$) passages, in comparison with the control condition ($M = 4.73$, $SE = .25$), $ps < .05$. As before, there were no differences between the two system threat conditions.

This time, the analysis revealed no statistically significant interaction between system threat condition and system justification type, ($p = .27$), indicating that the effects of both types of system threat were comparable for the two types of system justification measures (see Figure 2 for means). Although there was no significant interaction between system threat condition and type of system justification measure, examination of the means illustrated in Figure 2 suggests a strong effect of system threat condition for the family system justification measure, but not for the American system justification measure.

Univariate ANOVAs conducted separately for the two system justification measures point to an effect of system threat on family system justification, $F(2, 57) = 4.70$, $p < .05$, such that both American and family system threats increased family system justification relative to the control condition ($ps = .01$ and $.014$, respectively), but they do not reveal a significant effect of system threat condition on American system justification. This null result is somewhat surprising, given the results of our first experiment as well as other studies indicating that threat increases national system justification (e.g., Ullrich & Cohrs, 2007). It is conceivable that for the present sample of NYU students the connection between the system threat passage and the system justification measure was too explicit or obvious (see also Kay et al., 2005). In any case, what seems most important is that for the

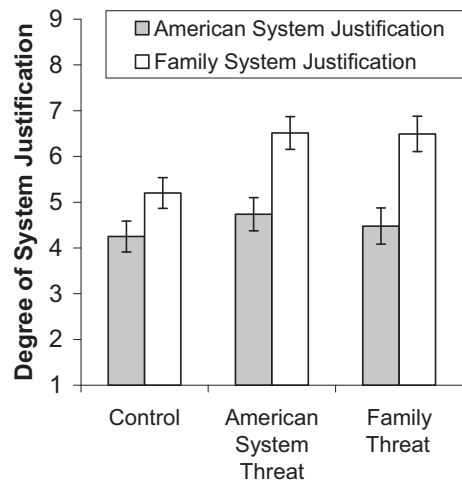


FIGURE 2. Justification of the American system and nuclear family system as a function of system threat condition.

system justification measure that was presumably more moveable (at least for this sample), both direct and indirect forms of system threat exerted similar effects.

System threat did not affect either state or trait self-esteem, $ps > .3$, replicating prior results (e.g., Kay et al., 2005, 2009). Thus, system threat directed at either the American system or the family system led participants to bolster their degree of system support, but it did not lead to increased (or decreased) self-enhancement. Finally, participants assigned to each of the two threat conditions reported that the paragraphs were personally relevant to a similar extent (for American system threat: $M = 3.80$; $SE = .38$; for family system threat: $M = 3.65$; $SE = .43$, $t(35) = .27$, $p = .79$.)

GENERAL DISCUSSION

Results from two experiments extend previous theory and research on system justification by (a) examining small-scale social systems and (b) considering spreading or carryover effects (see also Jost & Kay, 2005, p. 500). Previous research has shown that people engage in rationalization of large-scale social systems (e.g., the nation) in response to system threat. In the present set of studies, we found that participants bolstered the high school popularity system (Experiment 1) and nuclear family system (Experiment 2) after being exposed to threats directed at each of these systems. In addition, results suggest that the effects of system threat are not limited to the specific system that is targeted. That is, threats directed at one type of social system influence the degree of support not only for that system, but also for a different social system.

Taken together, these results further our understanding of how people respond to social systems that affect them. First, we have shown that support for small-scale systems seems to parallel support for large-scale systems (cf. Jost & Hunyady, 2002, 2005). This suggests that the mechanisms and consequences of system justification

that have been examined with respect to the rationalization of societal institutions are also at work in families, friendship networks, and other small-scale social systems such as work teams and organizations (see also Stapel & Noordewier, 2011). Second, the evidence of spreading rationalization that we have obtained points to previously unexplored psychological associations among social systems as diverse as the nation, the high school popularity hierarchy, and the nuclear family. Although these systems may appear to have little in common, they are all aspects of the societal status quo, and support for each of them is bolstered in response to a threat aimed at one of the others.

These findings have intriguing applied implications. While in the current research we experimentally manipulated system threat by exposing participants to different types of written passages, threats to small-scale and large-scale systems may occur spontaneously in ordinary life. For example, the impending divorce of one's parents is likely to threaten the stability (and perhaps even the legitimacy) of one's nuclear family, a fight with a best friend might render insecure one's peer network, and an economic crisis, a disputed election, or terrorist attack might threaten the legitimacy or stability of a national governmental system. It seems plausible at least that these very different types of naturally occurring system threats would exert similar kinds of attitudinal effects that we have observed under laboratory conditions. Furthermore, each of these threats could precipitate remote ramifications or ripple effects that influence the individual's degree of attachment to both local and global social systems (cf. Jost & Hardin, 2011).

On a meta-theoretical level, the present set of findings are in line with observations that seemingly disparate outcomes and processes can serve the same underlying psychological needs (e.g., see Arndt et al., 2002; Heine et al., 2006; Kay et al., 2008; Solomon et al., 2004; Tesser, 2000). Our framework suggests that various micro and macro social systems to which an individual belongs comprise the status quo as experienced by that person. Once the desire to legitimize the status quo is elicited by a threat to one system, the consequences spread to support for the status quo more generally. Such a process could explain why Americans' attitudes toward such diverse entities as the President, Congress, the military, and police became more favorable in the aftermath of 9/11 (Jones, 2003), as did Pennsylvania college students' attitudes toward the country and their university (Moskalenko, McCauley, & Rozin, 2006).

An intriguing question related to the current set of findings is whether system justification tendencies will spread across social systems, or whether justification of one system might be able to offset the need to justify a different social system. That is, if indeed the justification of disparate systems can each serve to uphold an individual's status quo, there exists the possibility of substitution, such that, following system threat, the justification of any given system should accomplish the goal of justifying the status quo; as a result, subsequent opportunities to system justify may be less readily embraced. In the studies reported here, such a phenomenon might have produced order effects, insofar as the effect of system threat could have been stronger on whichever system justification measure was presented first. We did not observe any reliable main or interactive effects of order in either of the two experiments reported here (or in an additional experiment summarized by Jost et al., 2010, pp. 188–190); however, each of these studies was relatively small and may not have afforded enough statistical power to detect order effects. In addition, the two system justification measures were presented consecutively without any break between them, so participants probably did not experience satiation of the system justification goal following completion of the first measure.

Furthermore, Fishbach, Dhar, and Zhang (2006) found that when a superordinate goal is accessible, progress on a subgoal is positively associated with the pursuit of complementary subgoals. It is possible that for participants in our experiments, the justification of small- and large-scale social systems were, in essence, complementary subgoals, each of which helped to address the general desire to uphold the status quo that had been triggered by system threat. Because the present experiments were not designed a priori to investigate these various theoretical possibilities, the question of whether and when to expect substitution among social systems remains an open question for future research to address.

It is also potentially useful to consider a system-level corollary of a major assumption of self-affirmation research (Sherman & Cohen, 2006), namely that affirming the self-concept in one value domain buffers the individual against threats encountered in a different domain. Analogously, the affirmation of one (micro or macro) social system may serve to mitigate the consequences of a threat directed at a different social system, thereby diminishing its effect on system justification. This idea is intriguing because it suggests there may be ways of facilitating social change, even in the face of threatening circumstances. For example, affirming the legitimacy and stability of one's own organization (or, indeed, the government), might lead individuals to react less defensively to the U.S. financial crisis that struck Wall Street in 2008 and therefore to support changes to the status quo, such as reforming the banking and financial services system.

Another important issue for future research to address concerns the relationship between the phenomenon of spreading rationalization and self-related processes more generally. Unlike perspectives that emphasize individuals' maintenance of self-integrity or self-esteem, our purpose has been to explore ways in which disparate social systems are upheld and legitimized. However, it is possible that threats directed at the social systems to which one belongs are experienced as direct threats to the self-concept. Indeed, we assume that various social systems and institutions are represented by the individual as part of the status quo, and they confer a sense of order and stability for the individual; this is why questioning their legitimacy and stability is psychologically threatening (see also Stapel & Noordewier, 2011). At the same time, it should be pointed out that in Experiment 2 system threat did not affect self-esteem, as other theoretical perspectives might have assumed (e.g., Pyszczynski, Greenberg, Solomon, Arndt, & Schimel, 2004).² This null result replicates what has been found in prior research, namely that system threat affects perceptions of the social system without affecting either individual or collective self-esteem (e.g., Kay et al., 2005, 2009). Still, system threat could impact self-related variables such as self-certainty, even if it has no effect on self-enhancement variables.

Even more broadly, it seems likely that system threat raises general epistemic, existential, and relational concerns, and therefore elicits a wide range of attitudinal

2. We also considered the possibility that self-esteem would moderate the effects of system threat on system justification, because terror management theorists might predict that only those individuals who are relatively low (but not high) in self-esteem would exhibit ideological defensiveness following system threat (e.g., Harmon-Jones et al., 1997). We found no support for this interaction prediction in the data for Study 2, suggesting again that self-esteem may not be as relevant to system justification processes as it is to terror management processes (see also Rutjens & Loseman, 2010). We thank an anonymous reviewer for proposing this analysis.

and behavioral outcomes, including some that may be unrelated to social systems *per se*. Work on terror management theory addresses a plethora of different ways in which individuals seem to combat existential threats raised by thoughts of death (Solomon et al., 2004), and it appears that system threat exerts a number of effects that parallel the effects of mortality salience (see also Jost, Glaser, Kruglanski, & Sulloway, 2003; Jost et al., 2005; Kay et al., 2005; Ullrich & Cohrs, 2007). Future research would do well to establish the specificity of system threat effects. That is, does system threat lead individuals to uphold the social systems and institutions that affect them, or does it stimulate an even more general quest to maintain what is familiar and uphold the status quo even in areas of one's life that are unrelated to social systems *per se*? Our hope is that findings such as those reported here will spark additional inquiries into the myriad ways in which individuals behave (both defensively and perhaps otherwise) in response to information that is unsettling to the social systems and institutions on which they depend.

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