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Seeking Structure in Social Organization: Compensatory Control and the Psychological Advantages of Hierarchy

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Hierarchies are a ubiquitous form of human social organization. We hypothesized that 1 reason for the prevalence of hierarchies is that they offer structure and therefore satisfy the core motivational needs for order and control relative to less structured forms of social organization. This hypothesis is rooted in compensatory control theory, which posits that (a) individuals have a basic need to perceive the world as orderly and structured, and (b) personal and external sources of control are capable of satisfying this need because both serve the comforting belief that the world operates in an orderly fashion. Our first 2 studies confirmed that hierarchies were perceived as more structured and orderly relative to egalitarian arrangements (Study 1) and that working in a hierarchical workplace promotes a feeling of self-efficacy (Study 2). We threatened participants' sense of personal control and measured perceptions of and preferences for hierarchy in 5 subsequent experiments. Participants who lacked control perceived more hierarchy occurring in ambiguous social situations (Study 3) and preferred hierarchy more strongly in workplace contexts (Studies 4–5). We also provide evidence that hierarchies are indeed appealing because of their structure: Preference for hierarchy was higher among individuals high in Personal Need for Structure and a control threat increased preference for hierarchy even among participants low in Personal Need for Structure (Study 5). Framing a hierarchy as unstructured reversed the effect of control threat on hierarchy (Study 6). Finally, hierarchy-enhancing jobs were more appealing after control threat, even when they were low in power and status (Study 7).

Keywords: compensatory control, social hierarchy, motivation, structure

The central claim of the current research is that when people lose personal control over their lives, hierarchy often becomes appealing. For example, the terrorist attacks of September 11, 2001, resulted in a surge of support for hierarchy-promoting social structures such as police and the military (Jones, 2003). In a classic study, Sales (1972) found that in times of economic uncertainty, people turn to more hierarchical churches. Lane (1959, p. 35) went so far as to argue that "many members of the working classes do not want equality" because it deprives them of order and meaning provided by the older, more hierarchical social order. It seems that the drive toward egalitarianism is often thwarted by basic and countervailing psychological needs.

We propose that hierarchical social structures offer psychological benefits and that these benefits are one reason why hierarchies are so prevalent. In particular, we argue that core motivational needs for order make hierarchies psychologically appealing—because of the structure they offer—relative to less structured forms of social organization. Drawing on compensatory control theory (Kay, Gaucher, Napier, Callan, & Laurin, 2008; Kay, Whitson, Gaucher, & Galinsky, 2009; Whitson & Galinsky, 2008), we threatened participants' sense of personal control to increase their need for sources of structure and assessed whether this lack of control increased preferences for hierarchy as a method of social organization.

Social Hierarchies

Hierarchies are a ubiquitous feature of social organization in both human and nonhuman societies; they develop quickly and spontaneously, among individuals and between groups (Eagly & Karau, 1991; Halevy, Chou, & Galinsky, 2011; Sadler & Woody,

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2003; Sidanius & Pratto, 1999). Because of their prevalence, it has been a preoccupation of social science to explain the human propensity to form hierarchies (Dumont, 1980; Sidanius & Pratto, 1999; Weber, 1947/1964). Even in the United States, the "American paradox" (Myrdal, 1944/1996) is that much of American society is strongly hierarchical in practice (Jäntti et al., 2006), despite strong cultural ideals that emphasize equality (Deutsch, 2006; Kluegel & Smith, 1986; Norton & Ariely, 2011) and some attempts at creating flat organizations (e.g., Shaer, 2013; Silverman, 2012; Worthy, 1950).

As a general definition, a hierarchy is a tiered arrangement of objects, with some entities being higher or lower than other entities on a particular dimension. A social hierarchy is a vertically stratified relationship between two or more people or groups in which those at higher levels of the hierarchy have greater power and status than those at lower levels of the hierarchy (see Magee & Galinsky, 2008). Those at higher levels of a hierarchy typically have greater decision-making authority, privileged access to material and symbolic resources, more rights and freedoms, and greater ability to make and enforce rules than those at lower levels of the hierarchy.

Although the inequality intrinsic to hierarchies is often criticized, functional models of hierarchy (e.g., Halevy, Chou, & Galinsky, 2011; Magee & Galinsky, 2008) propose that hierarchies are so common, in part, because they facilitate group performance. They do this through incentives that promote effort (Abramitzky, 2011) and increased coordination and cooperation among group members (Halevy et al., 2011; Halevy, Chou, Galinsky, & Murnighan, 2012). In small groups, hierarchical differentiation among the group members improves task performance, especially on tasks that involve interdependence (Ronay, Greenaway, Anicich, & Galinsky, 2012). Even at a basic cognitive level, individuals process hierarchically organized social stimuli more quickly and easily than stimuli not organized hierarchically (Zitek & Tiedens, 2012). Furthermore, task-oriented individuals are more likely to perceive hierarchy in their social relationships (Tiedens, Unzueta, & Young, 2007). These functional accounts nicely demonstrate how the structure often present within hierarchies enhances performance on the part of individuals or the group as a whole (e.g., by promoting coordination and role differentiation). In the present set of studies, we build on this work by empirically assessing the possible psychological benefits for individuals that might be derived from the structure and order associated with social hierarchy.

Evidence suggests that hierarchies have become imbued with potent psychological significance as both those higher and lower in the hierarchy support its existence. Being at the top of a hierarchy satisfies a cluster of psychological needs related to power, status, dominance, and self-esteem (Fiske, 2011; Leary, Cottrell, & Phillips, 2001; Magee & Galinsky, 2008; Sidanius & Pratto, 1999). Although higher ranked individuals accrue the most obvious benefits from hierarchies (e.g., power, status, resources), lower ranked individuals often demonstrate significant support for hierarchies (Anderson, Willer, Kilduff, & Brown, 2012; Jost, Pelham, & Carvallo, 2002; Jost, Pelham, Sheldon, & Sullivan, 2003; Levin, Frederico, Sidanius, & Rabinowitz, 2002; Rankin, Jost, & Wakslak, 2009; Sidanius, Levin, & Pratto, 1996; but see Brandt, 2013), especially when those hierarchies represent the status quo (Jost & Banaji, 1994; Kay, Gaucher, et al., 2009; Wakslak, Jost, & Bauer, 2011). For example, even disadvantaged individuals who live in socially stratified systems will bolster and defend a variety of hierarchies, including stratification systems based on gender (Glick & Fiske, 2001; Jost & Kay, 2005; Kay, Gaucher, et al., 2009; Laurin, Shepherd, & Kay, 2010; Rudman, Moss-Racusin, Phelan, & Nauts, 2012), race (Jost, Pelham, & Carvallo, 2002), and economic circumstance (Kay, Czapliński, & Jost, 2009; Kay & Jost, 2003; Malahy, Rubinlicht, & Kaiser, 2009).

In sum, it is clear that hierarchies have functional benefits and can serve psychological needs for power, status, and status quo maintenance. In addition, however, we propose that hierarchies are specifically conducive to fulfilling the psychological need to perceive one's existence and surroundings as structured. By structured, we mean clear, orderly, and predict able and not ambiguous or random (Kay, Laurin, Fitzsimons, & Landau, 2013). That is, the structured nature of hierarchies—the clarity and order they provide—may give them a type of psychological advantage over more equal forms of social organization, especially in circumstances when people lack personal control and needs for external structure are therefore particularly salient.

Compensatory Control

The notion that one's life circumstances might be uncontrolled often provokes anxiety (e.g., Glass, Singer, & Friedman, 1969; Laurin, Kay, & Moscovitch, 2008). As such, people are often motivated to believe they have personal control over their lives (e.g., Averill, 1973; Burger & Cooper, 1979; Rothbaum, Weisz, & Snyder, 1982; Seligman, 1975). Compensatory control theory proposes that personal control is valued, in part, because it is a subgoal of a larger motivation to see the world as structured, orderly, and nonrandom (Kay et al., 2008; Kay, Whitson, et al., 2009). Having personal control is associated with many positive outcomes (Langer & Rodin, 1976; Taylor & Brown, 1988; Taylor, Lichtman, & Wood, 1984) and, as such, is often the default preference in Western cultures (Markus & Kitayama, 2003) for affirming that the world is not random. Personal control can be achieved by being able to choose one's preferred outcomes (Averill, 1973) or by exercising power over others (Inesi, Botti, Dubois, Rucker, & Galinsky, 2011).

But when uncontrolled events occur and are observed, positive or negative, they can threaten perceptions of personal control and, by extension, of the world's structure. These might be larger events such as natural disasters (Eccleston, Kaiser, & Kraynak, 2010; Kaiser, Eccleston, & Hagiwara, 2008; Napier, Mandisodza, Andersen, & Jost, 2006) or smaller, everyday events such as undeserved but mundane fortune (Gaucher, Hafer, Kay, & Davidenko, 2010; Kay et al., 2008). Such events can shake an individual's confidence in his or her personal control over outcomes to a greater or lesser degree. There are also individual differences in the extent to which people chronically feel in control of their lives (Burger & Cooper, 1979; Paulhus & Van Selst, 1990).

Compensatory control theory proposes that people maintain perceptions of the world as orderly and structured by complementing beliefs in personal control with external sources of structure in the physical and social world (Kay et al., 2008; Kay, Shepherd, Blatz, Chua, & Galinsky, 2010; Whitson & Galinsky, 2008). External sources of structure might be explicitly controlling (e.g., belief that God is in control; Kay et al., 2008; Sasaki & Kim, 2011)

or any belief that provides order and predictability to one's social environment (Hui & Zhou, 1996), such as superstitions and conspiracy theories (Whitson & Galinsky, 2008) or even consumer products (Shepherd, Kay, Landau, & Keefer, 2011). For example, believing that God has a plan for one's life provides a sense of predictability and order, even if one cannot choose the specifics of that plan.

Overall, compensatory control theory suggests that personal and external sources of control jointly contribute to perceptions of a structured, rather than random or chaotic, social world. Because of this, the theory also suggests that if one source of structure (e.g., personal control) is lowered or threatened, people will compensate by increasingly relying on the other (e.g., external control). Furthermore, because perceptions of structure and order are generally considered the building blocks of long-term goal pursuit (Lerner, 1980), compensatory control theory further suggests that external structure crucial for promoting individual goal-directed action (Kay, Landau, & Sullivan, in press; Kay et al., 2013).

A burgeoning research literature has identified numerous examples of how people who lack personal control—and thus experience anxiety that the world is unstructured—compensate by affirming structure in other sources. People who lack personal control perceive increased structure in random arrays (i.e., see pictures in static; Whitson & Galinsky, 2008) and believe more strongly in agents that impose structure on the world, such as a controlling god or a controlling government (Kay et al., 2008; Kay, Moscovitch, & Laurin, 2010; Kay, Shepherd, et al., 2010; Shepherd et al., 2011). People lacking personal control also endorse scientific theories that suggest orderliness rather than randomness (Rutjens, van der Pligt, & van Harreveld, 2010; Rutjens, van Harreveld, & van der Pligt, 2010; Rutjens, van Harreveld, van der Pligt, Kreemers, & Noordewier, 2013), and folk beliefs that provide orderly explanations for negative events can foster a more global sense of control (Chipperfield et al., 2012). Individuals lacking personal control are also more likely to prefer consumer products that restore structure (Shepherd et al., 2011) or logos and brands that have clear, well-defined boundaries (Cutright, 2012).

According to compensatory control theory, people will at times engage in phenomena of compensatory control even when the compensatory outlet offers little or no material benefit to the individual. In fact, under control threat, people may prefer sources of structure that are seemingly negative to more positive but less structured options. For example, in one study (Rutjens et al., 2013), significantly more individuals preferred a structured disease course over an unstructured disease course, even though the former had a more negative prognosis, when their sense of control was threatened (vs. unthreatened). When personal control is undermined, people also compensate by increasingly endorsing the existence of relatively nefarious sources of order, including powerful enemies (Sullivan, Landau, & Rothschild, 2010) and elaborate conspiracies (Whitson & Galinsky, 2008). It seems that when people are motivated to find ways to preserve their belief in an orderly and structured world, even negative order is sometimes preferred to no order at all.

Compensatory Control and the Endorsement of Hierarchy

It is clear from these findings that when personal control is undermined people compensate by imposing structure on their external contexts. We argue that hierarchies—because they provide structure—are a particularly important route to restore feelings of control. This hypothesis would offer a novel explanation for the persistence of hierarchies that complements existing functional accounts. Our hypothesis also bridges and enriches other prevailing social psychology theories on hierarchies, such as social dominance (Sidanius & Pratto, 1999) and system justification (Jost & Banaji, 1994), a point we expand upon in the Discussion section.

A critical first question to answer is whether hierarchies are actually perceived as more structured than more equal arrangements. There is some evidence that social groups, whether large organizations or intimate friendships, can be simultaneously egalitarian and structured (Krackhardt & Kilduff, 1999; Rothschild-Whitt, 1979)and that hierarchies can be unstructured (Abrahamson, 2002; Jordan, Sivanathan, & Galinsky, 2011; Maner & Mead, 2010). However, we propose that hierarchies will be more psychologically conducive to providing structure than will egalitarian arrangements. Compared to equality, hierarchies more explicitly provide rules about who should be doing what and describe a predictable pattern of relations among group members. For example, a hierarchically organized workplace typically has managers and employees with well-defined roles; in fact, role differentiation and hierarchical differentiation tend to co-vary in organizations (Baron & Pfeffer, 1994; Chonko, 1982; Gruenfeld & Tiedens, 2010). Someone whose sense of personal control has been threatened might find hierarchy appealing as a means of reestablishing a more general sense of structure. Indeed, past theoretical work has proposed the possibility that hierarchies fulfill the psychological need for structure (Magee & Galinsky, 2008), and correlational evidence suggests that needs for structure and hierarchy-enhancing ideology are related (Jost, Glaser, Kruglanski, & Sulloway, 2003; Van Hiel, Pandelaere, & Duriez, 2004).

The current work tests our hypothesis that hierarchies are so prevalent in part because they provide order and structure and thereby serve as a means of compensatory control. Although previous research has investigated the benefits of hierarchy for groups or organizations (e.g., Ronay et al., 2012), or the psychological benefits that accrue to dominant individuals (e.g., Magee & Galinsky, 2008; Sidanius & Pratto, 1999), relatively less work has examined intrapsychic processes that lead to support for hierarchies among even disadvantaged individuals and groups (but see Jost & Major, 2001) and no work has examined this from the perspective of compensatory control. Here, we propose that an intrapsychic process supports the prevalence of hierarchies by demonstrating that hierarchy, by virtue of its ability to serve core psychological needs for structure, will have a psychological advantage over equality, especially when people experience personal control threat.

Overview

We conducted seven studies and one replication to test whether preferences for hierarchy can be explained through processes of compensatory control. Our first study tested whether hierarchy is

perceived as more structured than more equal arrangements. We next examined whether being in a hierarchy can engender a sense of control in individuals by assessing the level of hierarchy present in participants' own workplaces and measuring their sense of workplace certainty and self-efficacy.

After establishing these links between hierarchy and a sense of structure, self-efficacy, and certainty, we explored whether hierarchy can serve as a means of compensatory control by manipulating levels of personal control and assessing the extent to which people were drawn to hierarchy. We tested whether threats to control lead people to perceive hierarchy in an ambiguous social interaction (Study 3), prefer more hierarchy in their workplaces (Studies 4–5), and find hierarchy-enhancing careers more appealing, even when those careers are low in power and status (Study 7).

We also tested the relationship between need for structure and preferences for hierarchy through correlational and experimental evidence: Correlationally, we assessed whether individuals high in Personal Need for Structure (PNS) would prefer hierarchies more than those low in PNS (Study 5). Experimentally, we manipulated whether hierarchy was framed as structured or unstructured and observed whether this moderated hierarchy's appeal following a loss of control. In doing so, we tested the hypothesis that framing hierarchy as unstructured but advantageous in other ways would reverse the previous effects, so that participants who lacked personal control would now find hierarchy unappealing (Study 6).

Overall, the current theory and experiments bridge two separate literatures—the social structural literature on hierarchy with the intrapsychic literature on personal control—to offer new insights into why hierarchies are the dominant form of social organization. In doing so, we also provide key support for compensatory control theory and broaden existing theories of why people support hierarchy (social dominance and system justification theories).

Study 1: Hierarchy Offers More Structure

We have proposed that hierarchical social arrangements are perceived as offering more structure. However, it is possible that structure is perceived to occur in groups organized either hierarchically or equally. Indeed, previous theory has speculated that hierarchical social arrangements are structured but probably not more so than egalitarian groups (Magee & Galinsky, 2008). In contrast, we propose that, regardless of whether these different social arrangements differ in their actual degree of structure, hierarchical social groups are perceived as significantly more structured than more egalitarian social groups. Study 1, therefore, tested whether hierarchies are indeed perceived as more structured by gauging people's perceptions of how hierarchy and equality relate to structure, order, and other relevant concepts.

Method

Participant screening. In all studies we used the following quality control techniques for online research, which are based in part on Mason and Suri's (2012) recommendations: (a) response patterns that indicated a failure to follow study directions or not taking the experiment seriously, such as giving the same answer to all multiple-choice questions or writing nothing in the open-ended manipulations; (b) a voluntary withdrawal question at the study's end asking participants whether they answered with care and diligence, explicitly stating that there would be no penalty for answering no; (c) "red herring" questionnaire items embedded in other measures, such as "For quality control purposes, answer 'strongly disagree' for this item"; (d) timing checks for studies that included an article manipulation. Participants who spent less than 5 seconds on the manipulation page were excluded.

Participants. We recruited 73 participants (64% women, ages 18–78, *median* = 31 years)[1] who were told this was a study on how social groups can be organized. None were excluded. In this and all subsequent studies, participants were English-fluent, adult American residents recruited via Mechanical Turk (MTurk; http://www.mturk.com).[2] In all studies, participants each received $0.50–$0.75 in appreciation for their time and a debriefing feedback sheet at the study's end that explained the study's purpose.

Procedure and materials. After they provided demographics information, participants were given words (see Figure 1) and phrases (see Figure 2) related to structure, order, predictability, and other concepts. On the basis of Fehr (1988, Study 2), they rated how central each word or phrase was to "hierarchy" and "equality," using an 8-point scale (1 = *Extremely poor description of hierarchy/equality,* 8 = *Extremely good description of hierarchy/equality*). We defined hierarchy as "a group of people where some are "above" and some are "below" in some way" and equality as "a group of people where everybody is on the same level." To counterbalance, half of participants rated the concept of hierarchy first and that of equality second; the order was reversed for the other half of participants. There were no effects of order (all *p*s > .13).

After rating the words' and phrases' relationships to equality and hierarchy independently (i.e., on unipolar scales), each participant then rated the same words and phrases as opposite concepts on a bipolar 7-point scale (1 = *Much more characteristic of equal social groups,* 7 = *Much more characteristic of hierarchical social groups*), with the midpoint (4) labeled *Equally characteristic of both hierarchy and equality.* Participants could also choose unrelated to either concept, which was coded as no response. We included this bipolar scale because we considered that some phrases, when rated independently, might be seen as equally related to hierarchy and equality but that differences might still emerge when the two concepts were placed in juxtaposition on the same response scale.

[1] Across studies, there were no consistent effects of gender or age; nor did controlling for these variables materially affect the reported results. Therefore, no analyses control for gender or age, and we do not mention them further.

[2] MTurk is a crowdsourcing provider of individuals willing to work on online tasks such as academic research. Data obtained with MTurk are as reliable as traditional methods in terms of internal consistency and test–retest reliability (Buhrmester, Kwang, & Gosling, 2011), and Mechanical Turk is considered a valid means of collecting data (Mason & Suri, 2012). Furthermore, the current studies generally investigated hierarchy preference in workplace domains and the older, non-undergraduate samples available on MTurk meant that participants had more real work experience, which should make our findings more generalizable. Potential participants accessed the MTurk website and were shown a study description and an informed consent letter; they then accessed the questionnaire website.

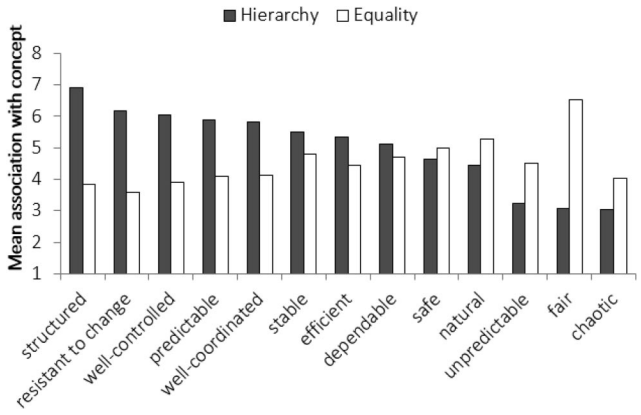

Figure 1. Mean ratings (Study 1) of the extent that each word was associated with hierarchical or equal social groups. By paired *t* test, all differences significant ($p < .05$), except for dependable and safe. Scale range equals 1–8; a higher rating indicates more association with the concept.

Results and Discussion

Data were analyzed with paired *t* tests. As shown in Figures 1 and 2, there were dramatic differences in how hierarchical and egalitarian social groups were perceived. The words that were rated are shown in Figure 1. Supporting our hypotheses, hierarchy was rated as more structured, predictable, stable, well controlled, well coordinated, resistant to change, and efficient (all $ps < .05$). In contrast, equality was rated more chaotic and unpredictable but also as more fair and natural (all $ps < .05$). Neither concept was rated as more dependable or safe (all $ps > .15$).

The phrases that were rated are shown in Figure 2. Hierarchies were associated more strongly with role differentiation and the status quo (e.g., conveying who should listen to whom; all $ps < .001$) but not with participants' ideals about how groups should be organized, which was marginally more associated with equality ($p = .08$). When hierarchy and equality were assessed together on a bipolar scale, results were generally the same as when they were assessed independently, except that on the bipolar scale neither concept was rated as more natural and hierarchy was rated as more dependable.

In sum, hierarchy was seen as more structured, orderly, and predictable than equality. Study 1 also found some of the perceived functional benefits of hierarchies identified in previous research (e.g., efficiency; Halevy et al., 2011). It is also noteworthy—and consistent with the "American paradox" (Myrdal, 1944/1996)—that equality was seen as more fair and more strongly the way people should be organized. These results establish the general premise of our hypothesis that hierarchy can serve as a source of social structure and, potentially, as a means of compensatory control.

Study 2: Hierarchy and Increased Feelings of Control and Self-Efficacy

Study 1 established that hierarchies are typically seen as more structured. This is a key foundation finding for our larger hypothesis that hierarchy can serve as a means of compensatory control; that is, for people whose sense of personal control is low and are thus motivated to impose structure on their social contexts. Additionally, according to compensatory control theory, perceiving structure is not only psychologically advantageous in itself, as a means of perceiving the world as orderly and nonrandom, but is also a means of reestablishing the confidence necessary to engage in goal-directed action after personal control has been threatened (Kay et al., 2013; Kay et al., in press; Laurin, Fitzsimons, & Kay, 2011). To the extent that hierarchy can serve as an outlet of compensatory control, then, engagement in a social hierarchy should both increase certainty about one's actions and facilitate perceived efficacy. We tested this by assessing the relation between employed participants' perceptions of hierarchy in their workplaces and (a) their occupational self-efficacy (i.e., beliefs that one is able to be effective at and achieve goals within one's job) and (b) their workplace certainty (i.e., confidence about where one's career is heading and one's position in the organization). We expected that workplace hierarchy would be associated with increased self-efficacy and increased workplace certainty.

We also hypothesized a boundary condition to the effects of hierarchy on certainty and self-efficacy. Given that hierarchies—for example, in the workplace—are not universally structured (e.g., Jordan et al., 2011), we reasoned that hierarchies that are unstructured or unpredictable in some way might not be as effective at promoting employee self-efficacy or certainty. In this study we operationalized structured as whether participants' workplaces are considered procedurally just, which is the extent to which their workplaces' procedures and practices are perceived of as consistent, objective, and applied without bias (Colquitt, 2001; Lind & Tyler, 1988). A hierarchy that is not procedurally just is likely to be experienced as unstructured, because the absence of procedural constraints and rules allow high-ranking members of the organization to make arbitrary and unpredictable decisions (Lind & van den Bos, 2002). This reasoning is consistent with research showing that disadvantaged groups are especially sensitive to the justice and fairness (i.e., predictability) of their occupational contexts and are less willing to pursue long-term goals when perceived societal unfairness is high (Laurin et al., 2011). We therefore predicted that

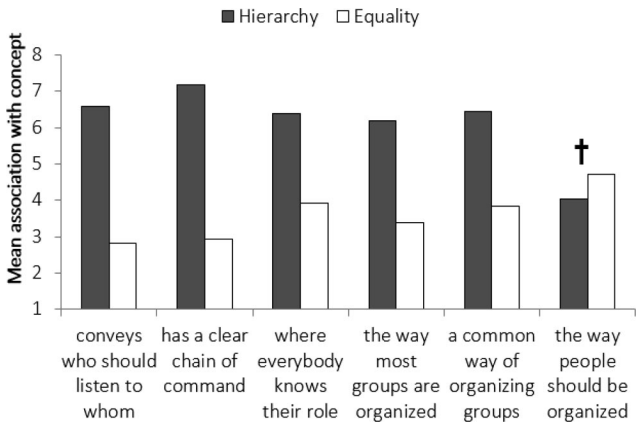

Figure 2. Mean ratings (Study 1) of the extent that each phrase was associated with hierarchical or equal social groups. By paired *t* test, all differences significant ($p < .001$, except † indicating $p < .10$). Scale range equals 1–8; a higher rating indicates more association with the concept.

workplace hierarchy would not increase self-efficacy and certainty when procedural justice was low.

Method

Participants. We recruited 74 participants from MTurk who were employed full or part time. Three participants were excluded for response patterns and one was excluded for failing a red herring, leaving 70 (56% female, ages 19–63, *median* = 28). When no participants were excluded, all significance tests of interest remained $p < .06$.

Materials and procedure. Participants confirmed that they were currently employed and then completed a five-item measure of perceived procedural justice in their workplace ($M = 3.67$, $SD = .72$; $\alpha = .81$). The measure was based on Colquitt, 2001; e.g., "To what extent are procedures in your workplace applied consistently?"), and items were answered on a 5-point scale (1 = *Never,* 5 = *All of the time*). Participants also completed a two-item measure of workplace status: "Think about your current job and your place in the workplace ladder. Where would you place yourself . . . in your workplace as a whole?" ($M = 37.8$, $SD = 25.5$) and ". . . in your current department or workgroup?" ($M = 55.0$, $SD = 27.7$). These were answered in on a 0–100 sliding scale (0 = lowest rank, 100 = highest rank). The two items were highly correlated, $r(142) = .66$, $p < .001$, so their mean was used as the measure of workplace status ($M = 46.4$, $SD = 24.3$).

Next, participants completed the measure of hierarchy present in their own workplace. Because of the correlational design of this study, we chose to first include an especially subtle measure of workplace hierarchy to avoid any potential for demand characteristics. Specifically, participants were asked to rate the similarity of six hierarchically themed images (and four filler images) to their own workplace on a 5-point scale (1 = *Not at all like my workplace,* 5 = *Just like my workplace*). The hierarchical images were a group of chess pieces, ladder, mountain, pyramid, vertically oriented set of stick figures, and "food ladder" of animals ($M = 2.32$, $SD = .52$; $\alpha = .42$).[3] Therefore, people reporting more similarity between their own workplace and the hierarchical images presumably work in a more hierarchical environment. The filler images were traffic, a frog, a sunset, and an empty desk. Image presentation order was random within each participant.

Participants also completed one item that explicitly measured their perceived workplace hierarchy: "Some workplaces are organized more 'vertically' and some are organized in 'flatter' ways. How is your workplace organized?" on a 7-point scale (1 = *My workplace is flat with no levels,* 7 = *My workplace has many levels*; $M = 4.48$, $SD = 1.86$). The image and explicit measures were correlated, $r(142) = .32$, $p = .01$and were more reliable when combined ($\alpha = .49$) than when used alone, so we standardized both measures and used their mean as our independent variable. (In the survey itself, the explicit hierarchy item came after the dependent variables.)

Next, participants completed an occupational self-efficacy scale ($M = 5.61$, $SD = .92$; $\alpha = .91$; Schyns & von Collani, 2002, 8-item short form). The items (e.g., "If I am in trouble at my work, I can usually think of something to do") were rated on a 7-point scale (1 = *Strongly disagree* to 7 = *Strongly agree*). Following that was an eight-item measure of occupational certainty (e.g., "To what extent are you certain . . . about the direction in which your career is heading?"; $M = 3.29$, $SD = .84$; $\alpha = .85$) based on Bordia, Hobman, Jones, Gallois, and Callan (2004) and rated on a 7-point scale (1 = *Very uncertain,* 7 = *Very certain*). Occupational self-efficacy and workplace certainty were significantly correlated, $r(68) = .41$, $p < .001$. Procedural justice was marginally correlated with occupational self-efficacy, $r(68) = .22$, $p = .07$, and occupational certainty, $r(68) = .53$, $p < .001$.

Results

We predicted that seeing one's workplace as more hierarchical would be positively related to occupational self-efficacy and certainty but not when procedural justice was low (i.e., not when the workplace did not have predictable structure). That is, we expected an interaction between workplace hierarchy and procedural justice. Results are presented in Table 1 and described below.

Occupational self-efficacy. First we regressed occupational self-efficacy on mean-centered workplace hierarchy and procedural justice. This revealed significant main effects of both procedural justice and workplace hierarchy. Of importance, the two-way interaction added on the second step was significant (see Figure 3). We conducted simple effects tests by recentering procedural justice at 1 standard deviation (*SD*) above and below the mean (Aiken & West, 1991), which revealed that seeing one's workplace as hierarchical was significantly and positively associated with self-efficacy when procedural justice was high. In contrast, the effect of workplace hierarchy when procedural justice was low was nonsignificant.

We had measured participants' perceived workplace status to ensure that the effect of hierarchy on self-efficacy is not dependent on high workplace status. Controlling for participant's mean-centered workplace status and its interactions with procedural justice and workplace hierarchy did not mitigate the key interaction between workplace hierarchy and procedural justice or its simple effects. The only significant effect of workplace status was a main effect on occupational self-efficacy, $\beta = .39$, $t(66) = 3.50$, $p = .001$.

Occupational certainty. The results for occupational certainly generally replicated the self-efficacy effects. Regressing occupational certainty on mean-centered workplace hierarchy and procedural justice revealed significant main effects of procedural justice and workplace hierarchy. The predicted two-way interaction was significant. Simple effects tests at 1 *SD* above and below the mean of procedural justice revealed that seeing one's workplace as hierarchical was significantly and positively associated with occupational certainty when procedural justice was high but was nonsignificant when procedural justice was low. Controlling for workplace status did not mitigate the interaction of interest or its simple effects and revealed only a

[3] For copies of these images, please contact Justin P. Friesen.

Table 1
Study 2. Effects of Procedural Justice and Workplace Hierarchy on Occupational Self-Efficacy and Occupational Certainty Predicted With Multiple Regression

Predictor	Occupational self-efficacy			Occupational certainty		
	β	*df*	*t*	β	*df*	*t*
Procedural justice	.22	67	1.98†	.53	67	5.25**
Workplace hierarchy	.32	67	2.84**	.21	67	2.08*
Procedural Justice × Workplace Hierarchy interaction	.37	66	3.34**	.24	66	2.35*
Simple effect of hierarchy at high procedural justice	.56	66	4.40**	.37	66	3.13**
Simple effect of hierarchy at low procedural justice	−.14	66	−0.81	−.09	66	−0.57

Note. *df* = degrees of freedom.
† $p < .10$. * $p < .05$. ** $p < .01$.

main effect of workplace status on occupational certainty, β = .29, $t(66) = 2.78$, $p = .007$ (other *p*s > .21).[4]

Discussion

Employees in more hierarchical workplaces felt more effective and more certain about their roles and career outcomes. More so, this association did not occur when one's work environment was low in procedural justice, likely because a hierarchy without just procedures is likely to be experienced as unstructured and unpredictable. Of importance, these effects occurred regardless of participants' own workplace status, though workplace status independently predicted feelings of self-efficacy and certainty.

Together, Studies 1 and 2 established that hierarchies are seen as more structured and that engagement in a hierarchy has the potential to increase one's sense of self-efficacy and certainty, especially in a procedurally just hierarchy. Having established the general premise of our hypothesis, we next experimentally investigated whether hierarchy, as a source of social structure, can serve as a means of compensatory control. Though people prefer equality as an ideal in the abstract, their preferences may shift to hierarchy when they experience a clear threat to personal control.

Study 3: Lack of Control and Perceptions of Hierarchy

Given that hierarchies are seen as more structured and can facilitate a sense of control and self-efficacy, we predicted that social hierarchies would be seen as imposing structure on everyday social organization, especially when personal control is threatened. To the extent that activated psychological motives guide the interpretation of ambiguous stimuli (e.g., Srull & Wyer, 1979), we predicted that people would perceive more hierarchy in an ambiguous social situation after their sense of personal control has been undermined, which produces a need for structure (Kay et al., 2008). Study 3 tested this hypothesis by threatening personal control and having participants rate the amount of hierarchy occurring in descriptions of two different hypothetical group interactions.

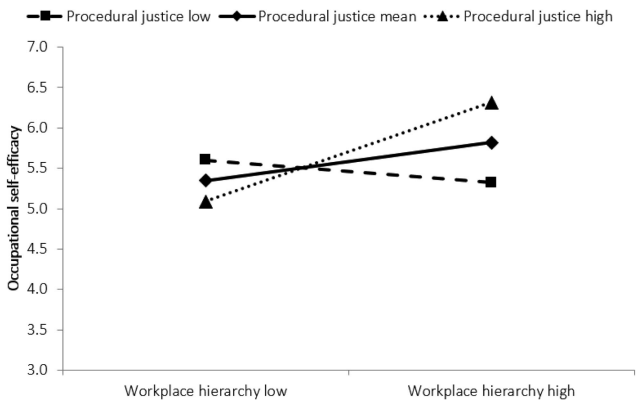

Figure 3. Study 2: Relationship between workplace hierarchy and occupational self-efficacy, moderated by procedural justice. High and low are +/−1 *SD* about the mean. Scale range equals 1–7.

Method

Participants. We recruited 103 participants who were told this was a study on past experiences and how people perceive social interactions. One participant was excluded for response patterns and two voluntarily withdrew, leaving 100 (71% women, ages 18–72, *median* = 28). When no participants were excluded, all significance tests of interest remained $p < .06$.

Procedure and materials. Participants first completed a personal control manipulation that past research has demonstrated engenders a search for structure (Whitson & Galinsky, 2008). Participants were randomly assigned to conditions in this and all subsequent studies. Participants in the control threat condition ($n = 49$) recalled and wrote about a time where they lacked control: "Please recall a particular incident in which something happened and you did not have any control over the situation. Please describe the situation in which you felt a complete lack of control—what happened, how you felt, etc., in up to 100 words." Participants in the control unthreatened condition ($n = 51$) wrote about a time when they had control. In past compensatory control research, participants who wrote about a time when they had control did not differ from participants who were assigned a neutral writing task where they wrote about a topic unrelated to control (Cutright, 2012).

Participants next read one of two passages describing a social interaction among a small group of people in which the extent of

[4] Another set of 74 participants rated six matched nonhierarchical images (checkers pieces, hopscotch, a web of interconnected people, a field of wildflowers, Stonehenge, and a food "web" of animals) and the four filler images. There were no relationships between participants' ratings of the similarity of the nonhierarchical images to their workplace and occupational self-efficacy, suggesting that the effects presented in the main analyses are not due to mundane factors such as acquiescence bias.

the hierarchy was ambiguous. For example, individuals in the groups were presented as peers, suggestive of equality, but in each scenario one or two characters tended to take the lead in planning, which is suggestive of dominance, and other characters deferred to those plans, which is suggestive of submissiveness (Sadler & Woody, 2003). We used two different passages to ensure that any effects occurring were not due to some unique feature of a particular scenario. The instructions read: "Here we are interested in how people perceive individuals in interactions with others. Below you will see a short story. Please read it carefully because afterward we will test your memory and ask you some questions about what occurred." Half of participants ($n_{threatened} = 23$, $n_{unthreatened} = 25$) read the following group project scenario:

> Rebecca, Jacob, and Alex met in the library to work on their group project—a presentation for their psychology class. The three of them had seen each other in class, but this was the first time they'd spoken outside of class. Alex made a suggestion based on last week's lecture but Jacob didn't think it was a good idea. Alex insisted on it and the two argued for a few minutes. Finally, Rebecca put forth an alternative, which Jacob loved. Alex agreed too, reluctantly. Alex didn't like Rebecca's idea but went along anyway just to be done with it. Rebecca said, "Let's do some Internet research together right now, then write down a few ideas." Alex really wanted to divide up the work and do it on his own, instead of as a group, but didn't say anything.

The remaining participants ($n_{threatened} = 26$, $n_{unthreatened} = 26$) read a vacation planning scenario where two working-age couples discussed their annual vacation while playing cards.

The dependent measure was the amount of hierarchy that was perceived to have occurred during the interaction. This was measured by having participants how much each character contributed to, controlled, influenced, and dominated the situation on a 5-point scale (1 = *Nothing at all* to 5 = *Completely*). The reliability of the ratings of each character ranged from $\alpha = .68$ to .85 ($M_\alpha = .80$ for the six characters).

We operationalized the amount of hierarchy occurring as the mean variance in the ratings (see Halevy et al., 2012). That is, if the interaction was perceived as highly hierarchical, presumably one or two of the actors would be perceived as highly dominant (controlling, etc.) and the remaining actors would have been seen as less dominant. If so, there would be high variance in the dominance ratings between the actors. In contrast, if the scenario was seen as more egalitarian, no actor should have been rated as more dominant than the others. Here there should have been low variance in the dominance ratings between the actors. Therefore, as our measure of the amount of hierarchy occurring in each scenario, we calculated the variance in the characters' ratings on each of the four dimensions individually, and the mean of those four variances was used as the dependent measure ($M = 2.46$, $SD = 1.26$, range = 0 to 4.75).

Results and Discussion

Mean variances in dominance ratings were submitted to a 2 (Control threat condition: control threatened vs. unthreatened) by 2 (Scenario type: group project vs. vacation planning) between-subjects analysis of variance (ANOVA). As predicted, there was a main effect of control threat condition, $F(1, 96) = 4.11$, $p = .04$, $\eta_p^2 = .04$, so that there was more variance in ratings (i.e., participants perceived more hierarchy in the interaction) when control was threatened ($M = 2.70$, $SD = 1.23$) than when it was unthreatened ($M = 2.23$, $SD = 1.25$). There was also a difference between scenarios so that participants also reported more variance in ratings for the vacation planning scenario ($M = 3.13$, $SD = 0.96$) than the group project scenario ($M = 1.72$, $SD = 1.13$), $F(1, 96) = 45.27$, $p < .001$, $\eta_p^2 = .33$. However, the lack of two-way interaction ($F < 1$), indicated that the effect of control threat was consistent across both scenarios.

Participants whose personal control was threatened were more likely to impose hierarchies—social structure—onto an ambiguous group interaction. Study 3 thus suggests a tendency to see hierarchy in the social world when compensatory control needs are salient. To the extent that people lacking control are perceiving hierarchy where there might be none, it suggests an avenue for how hierarchies might initially develop.

Study 4: Loss of Control and Preferences for Hierarchy

Our next study moved beyond perceptions of hierarchy and investigated preferences for hierarchy. In past research, people compensated for a lack of personal control by preferring products (Shepherd et al., 2011) and beliefs (Kay et al., 2008; Rutjens, van der Pligt, et al., 2010; Rutjens et al., 2013) that provided structure. In Studies 4–7 we investigated whether hierarchy, as a means of social organization that provides structure, might be increasingly preferred by people when a primary means of imbuing the world with structure—that is, personal control—is threatened.

To threaten control in Study 4, we had participants read one of three articles. Our control threat articles described (a) the economy as uncontrolled or (b) the world more generally as random. Our baseline article was unrelated to control. We then measured participants' preference for hierarchy in workplace contexts. We expected that both types of threat would increase preference for hierarchy relative to the neutral condition.

We included two control threat articles to test the influence of both domain-specific control threats (i.e., the economy is uncontrolled) and more general control threats (i.e., the world is uncontrolled) on preference for hierarchy. We used the randomness manipulation, which is a less direct manipulation of personal control, because it has been shown in past research to engender a search for structure (Banfield, Nadolny, & Kay, 2013; Whitson & Galinsky, 2008) and is the mundane type of control-threatening information people encounter regularly when they learn about current events (e.g., Kaiser et al., 2008; Napier et al., 2006; Sales, 1972, 1973).

Study 4 also included a neutral comparison group to more clearly test the direction of the effects of control threat on hierarchy preference. It could be argued that in Study 3, writing about having control was actually an affirmation and that affirmation reduced preference for hierarchy rather than threat increasing preference for hierarchy. Although this hypothesis would not be consistent with past research that has found that lacking control increases compensatory control processes relative to both participants who write about having control and participants who write about a neutral topic unrelated to control (Cutright, 2012), including a neutral comparison group here will more clearly establish the direction of any effects.

Method

Participants. We recruited 172 participants who were told this was a study on factors that influence workplace organization and career choices. Three were excluded for timing checks and one for failing a red herring, leaving 168 participants (56% male, ages 18–72, *median* = 28). When no participants were excluded, all significance tests of interest remained, $p < .20$.

Procedure and materials. Participant first completed premeasures of their employment category (employed, unemployed, or student), and employed participants reported their workplace status at their current job (measured by the two-item measure used in Study 2). The two status items were correlated, $r(105) = .66$, $p < .001$, and we used their mean as the indicator of workplace status ($M = 46.7$, $SD = 23.7$).

To threaten control, participants read one of three articles ostensibly from a magazine: an economic control threat ($n = 52$), a general control threat ($n = 55$), or a neutral article ($n = 61$). The economic control threat passage was a modified version of one used in past research (Whitson & Galinsky, 2008). (The original passage referred to the volatility of the stock market; the current version referred to the economy more generally in order to be more consistent with the current cover story.) It stated,

> In today's economic climate, circumstances are very volatile. Even analysts admit that it's hard to predict which companies will do well and which will do poorly. *Fortune* magazine recently had a headline that says, "Rough Seas Ahead for Economy." *The Wall Street Journal* used a similar but different metaphor—"Today's economy is like walking through a minefield." In light of the volatility of the economy, we feel it's important to learn about workplace organizational preferences.

The general control threat (Banfield et al., 2013) read:

> Is Everything Under Control? A Harvard Conference Reveals the Answer
>
> "The world really is a random place," said Thomas Cornwallis, a statistics professor at Oxford. Cornwallis made the comments at a conference hosted by Harvard University in January. The conference, titled "Understanding the World," was aimed at trying to understand the causes of events in the world. Cornwallis was one of several panelists who agreed that the world mostly operates in erratic, unpredictable ways.
>
> At the same conference, Marten Keese, a professor at Utrecht University in the Netherlands, spoke about an article he published in the renowned journal *Science.* Keese claimed that people's behaviour does not have clear causes. Although people may believe that the world is orderly and nonrandom, Keese says our perceptions are flawed. "Unperceived factors determine what happens to us. Most people believe their outcomes are under control, but our data suggest that random fluctuations have greater effects."

The neutral passage was designed not to threaten control but have a similar journalistic or academic tone:

> American Farmers Doing Fine
>
> A recent study by the United Nations suggests that American farmers continue to make a living in their profession. The UN report studied 78 countries around the world to assess the quality of life of farmers. The report was spearheaded by a UN representative from Ireland, Clive O'Connell, who initially expressed concern that farmers in underdeveloped countries may not be making a sufficient living. On the contrary, O'Connell found evidence that farmers in both developed and underdeveloped countries produce enough to live existences considered "comfortable" by the standards of their countries. The report included data from 1990–2011, and the trends indicate that farming continues to be a sensible career choice.

The dependent variable was a 6-item measure of preference for hierarchy in the workplace ($\alpha = .59$). Dropping Item 6 improved scale reliability somewhat ($\alpha = .63$), but patterns and significance levels using this shortened scale were essentially the same; we therefore report results using the entire 6-item scale. The items were loosely based on the Social Dominance Orientation scale (Pratto, Sidanius, Stallworth, & Malle, 1994) but modified to reflect preference for hierarchies in a workplace context. They were "In a business, it's important for one person to make final decisions"; "Businesses are most effective when there are a few people who have the influence to get things done"; "In any business, some people will naturally have more power than others"; "Every company needs a boss who is in charge of everybody else"; "To get things done, it's sometimes necessary to overrule other people"; and "A business is most effective if every employee has some say into how it's run" (reverse scored). Items were rated with a 7-point Likert scale (1 = *strongly disagree* to 7 = *strongly agree*).

Next, we included a manipulation check item: "Which statement most represents your general opinion about the state of the economy today?" on a 0 to 100 sliding scale (0 = *Is stable and predictable* to 100 = *Is volatile and unpredictable*). Last, participants completed demographics information. Given the deception, participants were asked to give post-debriefing consent to the use of their data. All participants consented to the use of their data and none disclosed concern about the deception in the comment box that was provided.

Results

Data were analyzed with a one-way ANOVA with three levels of the independent variable (economic control threat, general control threat, and neutral). First, we analyzed the manipulation check using a planned contrast comparing the two threat conditions ($M_{\text{economic threat}} = 77.3$, $SD = 15.5$; $M_{\text{general threat}} = 72.9$, $SD = 15.7$) to the neutral condition ($M = 69.5$, $SD = 17.6$), which was significant, $t(164) = 2.08$, $p = .04$. This indicated that the threat articles significantly increased participants' perceptions that the economy is unpredictable, relative to the neutral article. A second planned contrast that tested the difference between threat conditions was nonsignificant, $t(164) = -1.34$, $p = .18$.

Next we analyzed the effect of control threat on preferences for workplace hierarchy. As predicted, the personal control threats increased preference for workplace hierarchy: A planned contrast that compared the two threat conditions ($M_{\text{economic threat}} = 5.05$, $SD = .74$; $M_{\text{general threat}} = 4.84$, $SD = .77$) to the neutral condition ($M = 4.66$, $SD = .63$) was significant, $t(165) = 2.41$, $p = .02$. A second planned contrast that tested the difference between threat conditions was nonsignificant, $t(165) = -1.46$, $p = .15$.

We conducted supplementary analyses to investigate whether the benefits of hierarchy's structure were limited to high-status

individuals by testing whether participants' workplace status moderated the threat effect among employed participants ($n = 108$, 64% of sample). Using multiple regression, we regressed preference for hierarchy on mean-centered workplace status, coded predictors representing the same planned contrasts for the condition effects (Contrast 1: economic threat = 1, general threat = 1, neutral = −2; Contrast 2: economic threat = −1, general threat = 1, neutral = 0), and their interaction terms. Only Contrast 1 comparing the two threat conditions versus neutral was significant, $\beta = .39$, $t(102) = 4.12$, $p < .001$. All other effects including the interaction were not significant ($ts < 1$). These result suggest that lacking control caused individuals to increase their preference for workplace hierarchy regardless of their own workplace status.

Study 4 found evidence that people compensate for a lack of personal control by more strongly endorsing hierarchies in the context of the workplace. Thus, not only do people perceive more hierarchy following control threat (Study 3), but they also prefer it. We conceptually replicated Study 4's effect of personal control threat on preference for workplace hierarchy in a separate sample of participants ($N = 84$) using the manipulation of personal control from Study 3 (Whitson & Galinsky, 2008) and the same measure of hierarchy preference used in Study 4 ($\alpha = .64$). Participants recalled and wrote about a time when they lacked personal control or a time when they had personal control. Threatened participants showed more preference for workplace hierarchy ($n = 42$, $M = 5.17$, $SD = .82$) than did unthreatened participants ($n = 42$, $M = 4.86$, $SD = .83$), $t(82) = 1.75$, $p = .08$, $d = .38$.

Studies 3 and 4 demonstrate our basic hypothesized effect: lacking control increases preferences for hierarchical arrangements. However, these studies have not specifically addressed our proposed mechanism: that hierarchy becomes appealing after control threat, at least in part, because of the structure it offers. Studies 5 and 6 directly examined the connection between personal control and the structure that hierarchy provides.

Study 5: The Need for Structure and the Need for Hierarchy

Study 5 assessed the effects of both a personal control threat manipulation and a chronic individual difference measure directly related to the need for structure—Personal Need for Structure (PNS; Neuberg & Newsom, 1993; see also Webster & Kruglanski, 1994)—on preferences for hierarchy. If hierarchy is preferred in part because of the structure it confers on the social world, then people who chronically seek out structure—those high in PNS—should prefer hierarchy more strongly than people less predisposed to prefer structure.

We also tested whether this chronic individual difference would interact with control threat. Past research has demonstrated that motivational threats elicit a particular motivation most strongly among individuals whose chronic levels of that particular motivation are lower. In effect, threat makes the motivation salient for everyone. Commonly, following threat, the responses of those low on a particular chronic motivation begin to more closely resemble those high in that motive (Banfield, Kay, Cutright, Wu, & Fitzsimons, 2011; Nail & McGregor, 2009; Nail, McGregor, Drinkwater, Steele, & Thompson, 2009; but see Landau, Greenberg, Solomon, Pyszczynski, & Martens, 2006). Thus, to the extent that (a) hierarchy is attractive because it offers structure and (b) control threat leads to preferences for hierarchy because it increases the need for structure, we expected that in baseline conditions people high in PNS would demonstrate a greater preference for hierarchy than those low in PNS, but under control threat conditions, low-PNS individuals would also show a preference for hierarchy, a preference that would closely match their high-PNS counterparts.

Study 5 also addressed a possible alternative explanation from Study 3: response valence. In Study 3, participants were asked to recall and write about a time when they lacked control (or had control), and they were free to write about both positive and negative events. The advantage of this manipulation is that participants are free to recall a wider range of events that are likely representative of the types of control-threatening events that people encounter in their daily lives. It is possible, however, that negative affect might co-vary with the experimental condition if participants in the threat condition recalled more negative events than participants in the nonthreat condition. Even so, negative affect alone is not sufficient to produce compensatory control processes (Whitson & Galinsky, 2008) and according to compensatory control theory, any loss of personal control—even resulting from positive events like undeserved fortune—can increase needs for structure and strivings for compensatory control (Gaucher et al., 2010; Kay et al., 2008). To rule out valence-based explanations in the current context of hierarchy preference, Study 5 used a manipulation of personal control that kept response valence constant across the two recall conditions by instructing participants in both conditions to recall a positive event. Together with Study 4, where an article manipulation was used, the use of these different personal control manipulations allowed us to more definitively ensure that the effects of control threat on hierarchy preference were not limited to just one operationalization of threat.

Method

Participants. We recruited 95 participants who were told this was a study on past experiences and how businesses should be organized. Seven participants were excluded for response patterns and three were excluded for timing checks, leaving 85 (61% women, ages 18–70, *median* = 33). When no participants were excluded, all significance tests of interest remained $p < .20$.

Materials and procedure. Participants first completed the 11-item Personal Need for Structure scale ($M = 4.55$, $SD = 1.00$; $\alpha = .87$; Neuberg & Newsom, 1993), which includes items like "I enjoy having a clear and structured way of life" and "I don't like situations that are uncertain." These items were rated with a 7-point Likert scale (1 = *strongly disagree* to 7 = *strongly agree*).

Next, participants completed a personal control manipulation (Kay et al., 2008) in which they recalled and wrote about a time when they lacked personal control or when they had personal control. This manipulation was similar to the one used in Study 2, but it specified that the event recalled should be a positive event. In the control threatened condition ($n = 43$) participants read "Please try and think of something positive that happened to you in the past few months that was not your fault (i.e., that you had absolutely no control over)." Participants in the control unthreatened condition ($n = 42$) recalled a positive experience from the same time period over which they had control. Sample uncontrolled events that were listed included an unexpected bonus at work, a lottery windfall, and surprise concert tickets from a friend;

sample controlled events included a work promotion, a profitable stock investment, and an extra night out with friends. In past research this manipulation affected feelings of perceived personal control but not mood or self-esteem (Kay et al., 2008), and responses in the control unthreatened condition did not differ from responses in a neutral condition with a writing task unrelated to control (Cutright, 2012). Following the personal control manipulation, participants completed the six-item measure of preference for hierarchy in workplace contexts employed in Study 4 (α = .68).

Results and Discussion

Data were analyzed with multiple regression. We regressed preference for hierarchy in the workplace on control threat condition (effect-coded: −1 = control unthreatened, 1 = control threatened) and mean-centered PNS. As predicted, two main effects emerged. First, there was an effect of the threat manipulation, β = .21, $t(82) = 1.96$, $p = .05$, so that participants who lacked control ($M = 5.04$, $SD = 0$ .90) preferred more hierarchy than those who had control ($M = 4.66$, $SD = 0.90$). Second, PNS positively predicted desire for hierarchy in workplace contexts, $\beta = .21$, $t(82) = 1.95$, $p = .05$, such that those high in PNS more strongly preferred hierarchy.

In addition, as shown in Figure 4, adding the two-way interaction term qualified these effects (albeit marginally), $\beta = -.20$, $t(81) = -1.86$, $p = .07$. Simple effects analyses (Aiken & West, 1991) revealed that low-PNS participants' desire for hierarchy increased significantly after control threat compared to no threat, $\beta = .40$, $t(81) = 2.72$, $p = .01$, bringing them in line with high-PNS participants, who being chronically high in the desire for hierarchy were not affected by control threat ($t < 1$). Put another way, higher levels of PNS led to higher levels of preference for hierarchy only when control was unthreatened, $\beta = .42$, $t(81) = 2.71$, $p = .01$, and not when it was threatened, $\beta = .03$, $t(81) < 1$.

As predicted, individuals chronically high in the need for structure preferred hierarchy more than did individuals low in PNS. Furthermore, this effect was moderated by control threat in theoretically consistent ways. The main effect of threat conceptually replicates Study 4, where participants whose sense of control was threatened preferred hierarchy more than participants who were unthreatened. The main effect of PNS is consistent with our hypothesis that hierarchies can be a source of structure, because they were preferred more by people who chronically prefer structure. The interaction of control threat with PNS is consistent with our proposal that lacking control leads to preferences for hierarchy because of the connection between hierarchy and structure.

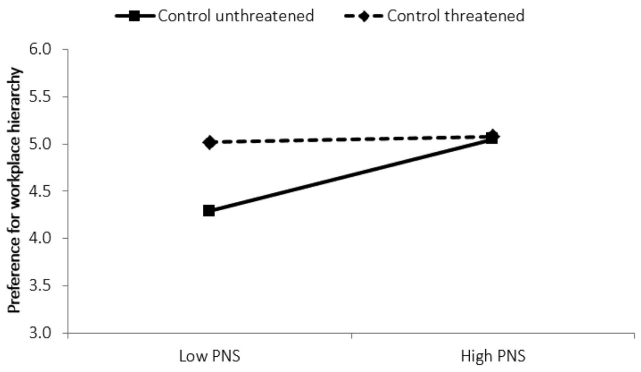

Figure 4. Study 5: Effects of personal control threat and Personal Need for Structure (PNS) on preference for hierarchy. PNS plotted at +/− 1 *SD* about the mean. Scale range equals 1–7.

Study 6: When Hierarchy Is Unstructured

Although hierarchies are often perceived as more structured than equality (Study 1), they are not necessarily always so (Abrahamson, 2002). Within a business hierarchy, for example, regular promotions, demotions, and reorganizations might introduce elements of instability (Jordan et al., 2011; Maner & Mead, 2010), or a workplace might be unjust and arbitrary (Colquitt, 2001), as shown in Study 2. Conditions of instability or injustice put the structure of a hierarchy into question.

For people lacking personal control and thus looking to reestablish structure in their social circumstances, an unstructured hierarchy should not be appealing. Indeed, it might be particularly unappealing. A finding that control threat decreases the attractiveness of hierarchies framed as disorderly would provide an important boundary condition as well as evidence for our proposed mechanism that lacking control increases a preference for hierarchies because it provides a sense of structure. That is, this finding would demonstrate that hierarchies are only able to serve as a means of compensatory control when they are perceived as structured. It would also be consistent with the findings of Study 2, where engagement with a hierarchy did not promote feelings of control and certainty when procedural justice was low.

We tested these predictions in a workplace context by threatening or not threatening participants' personal control and also manipulating whether workplace hierarchies were perceived as unstructured or not. We manipulated hierarchy's perceived structure by having half of participants read a passage stating that hierarchical workplaces are often unstructured because people compete for power and status, which creates disorder and role confusion. To ensure that the unstructured passage was not entirely negative, we included positive information, stating that lacking structure also allows flexibility in responding to new challenges. The remaining participants did not read the unstructured framing passage. We then assessed participants' preference for hierarchy in a workplace context.

This produced a 2 (control threatened vs. unthreatened) by 2 (hierarchy unstructured vs. no framing) between-participants design. In the no framing condition, where the structure of hierarchy was not manipulated, we predicted that participants would hold the default view of hierarchy as being structured (Study 1) and, as such, threatened participants would prefer hierarchy more than would unthreatened participants (a direct replication of Study 5). When we explicitly framed hierarchy as unstructured, however, we expected the opposite pattern such that threatened participants, whose needs for structure are salient, would prefer (unstructured) hierarchy less than unthreatened participants.

Method

Participants. We recruited 155 participants. Five were excluded for response patterns, four were excluded for failing a red

herring, and three withdrew voluntarily, leaving 142 (54% women, ages 18–61, *median* = 28). When no participants were excluded, all significance tests of interest remained $p < .05$.

Materials and procedure. Participants first completed the manipulation of personal control used in Study 5 (Kay et al., 2008). Next, they viewed an instruction page that manipulated whether hierarchy was said to decrease structure and order. For half of participants ($n_{threatened} = 33$, $n_{unthreatened} = 36$) the following framing manipulation was included to challenge the belief that hierarchies are structured. To ensure that the passage was not wholly negative, it also mentioned several positive consequences of lacking structure (i.e., flexibility, adaptability).

> As you consider your preferences, keep in mind that although hierarchical groups might appear orderly on the surface, it's possible for them to be quite unstructured in practice. In a hierarchical company, employees often jostle for power which prevents employees from knowing their roles in fulfilling the company's overall goals. In these cases the guidelines for each person's duties are often unclear. However, conflict can motivate employees to put in more effort and can create a flexibility that allows the company to more easily adapt to new conditions.

The remaining participants ($n_{threatened} = 36$, $n_{unthreatened} = 36$) did not read this passage.

As a pilot test, a separate group of participants ($N = 118$) read the unstructured manipulation ($n = 59$) or no passage ($n = 59$) and reported the extent to which hierarchies are structured (4 items: structured, predictable, chaotic [reverse-scored], and unpredictable [reverse-scored]; $\alpha = .81$) and have other positive aspects (2 items: flexible and adaptable; $\alpha = .76$) on 7-point scales (1 = *Not at all,* 7 = *A great deal*). As expected, participants in the unstructured condition reported that hierarchies are lower in structure ($M_{unstructured} = 4.92$, $SD = 1.06$; $M_{neutral} = 5.45$, $SD = 1.05$), $t(116) = 2.75$, $p = .01$, $d = .50$, but higher in other positive aspects ($M_{unstructured} = 3.80$, $SD = 1.25$; $M_{neutral} = 3.35$, $SD = 1.25$), $t(116) = -1.99$, $p = .05$, $d = .36$.

All participants then completed two dependent measures assessing their preference for hierarchy within a workplace context. First was the measure of general preference for workplace hierarchy used in Studies 3 and 4 ($\alpha = .67$). Second was a new measure of personal preference for workplace hierarchy (5 items, $\alpha = .88$). This scale focused on participants' willingness to invest in and be part of a hierarchical organization: "If you were going to invest some money, would you rather invest in . . ."; "If you were going to work at a company and start at the bottom, would you rather work at . . ."; "If you were going to be in management at a company, would you rather work at . . ."; "Which type of company seems more profitable?"; and "Which type of company seems like a better place to work at?" Participants responded to each item on a 7-point scale (1 = *A more equal company,* 7 = *A more hierarchical company*). The two scales were significantly correlated, $r(139) = .57$, $p < .001$, so we standardized them separately and combined them into a single dependent measure ($\alpha = .89$ for all 11 items). Last, participants completed demographics.

Results and Discussion

Hierarchical preferences were submitted to a 2 (Control threat condition: threatened vs. unthreatened) by 2 (Framing of hierarchy: unstructured vs. no framing) between-subjects ANOVA. There were no main effects (all $ps > .21$). As hypothesized there was a significant two-way interaction between framing hierarchy as unstructured and control threat, $F(1, 138) = 5.40$, $p = .02$, $\eta_p^2 = .04$, which is illustrated in Figure 5.

As predicted, when hierarchy was framed as unstructured it became significantly less appealing for participants in the control threat compared to those in the unthreatened condition, $F(1, 70) = 5.04$, $p = .02$, $\eta_p^2 = .07$. Additionally, participants in the threat condition preferred structured hierarchy more than unstructured hierarchy, $F(1, 67) = 5.94$, $p = .02$, $\eta_p^2 = .08$. In the no framing conditions there was no effect of control threat.

These results demonstrate an important insight into the psychological utility of hierarchies as a means of compensatory control. Although hierarchies are commonly perceived as being structured and thus are appealing after control threat, when hierarchies are perceived to be unstructured they no longer have a compelling allure for control threatened individuals. These findings also support our contention that hierarchy's structure is what makes it appealing as a means of compensatory control; when the implications of hierarchy for structure are taken away—despite possessing other positive qualities like flexibility—hierarchies lose their compensatory appeal.

Study 7: Hierarchical Preferences After Control Threat Are Not About Status

We have proposed that structure is the means by which hierarchies serve as a means of compensatory control, but it also seems plausible that the power and status offered by hierarchies to dominant individuals would be a means of restoring lost personal control (Inesi et al., 2011; Keltner, Gruenfeld, & Anderson, 2003). That is, it could be argued that the participants who lacked control preferred hierarchy because of the status it offers and that they were visualizing being in a high-status position. Although the lack of moderation by workplace status in Studies 2 and 4 suggests that even lower positioned employees preferred hierarchy more after threat, we more definitively rule out this alternative in Study 7.

Given that power is one means of achieving personal control (Inesi et al., 2011), any increased preference for hierarchy after control threat when individuals expect to be in dominant positions could be due to either the structure hierarchy offers or the power

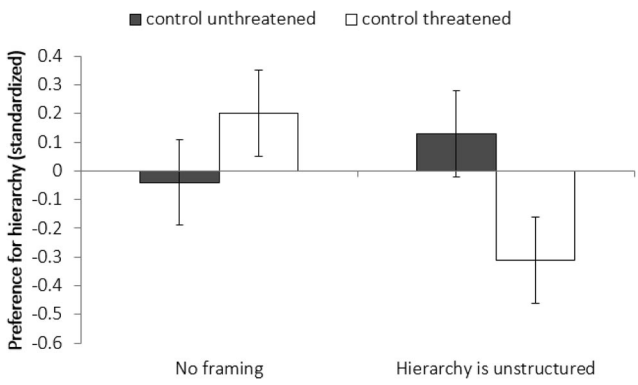

Figure 5. Study 6: Effects of personal control manipulation and framing of hierarchies on preference for workplace hierarchy. Error bars represent standard error. Response scale is standardized.

and status it offers. In contrast, any preference for hierarchy when individuals expect to be in subordinate positions is more consistent with a structure-based explanation (because structure is present at all levels of a hierarchy) than with a power/status-based explanation (because power and status are lacking in subordinate positions). Therefore, an especially strong test of our structure-seeking hypothesis would be to see whether personal control threat increases the appeal of hierarchy even when people expect to be in subordinate positions.

Our approach also further establishes that control and power are not fully interchangeable. The work by Rucker and colleagues (Rucker & Galinsky, 2008, 2009; Rucker, Dubois, & Galinsky, 2011) shows that lacking power increases a desire for status objects because they signal to others a higher standing in the hierarchy. Thus, the primary need or concern one has when one lacks power is to restore one's place in the social hierarchy. However, although loss of control and power are clearly related, lack of control does not threaten one's hierarchical standing, and thus we did not expect status-seeking to be the primary engine for restoring a sense of control.

We also tested preference for hierarchy in a new domain, job selection. Jobs can differ in how much power and status they offer but also in whether they enhance or attenuate hierarchies. Hierarchy-enhancing jobs create or maintain group-based differences, and hierarchy-attenuating jobs diminish group-based differences (Pratto & Espinoza, 2001; Pratto, Stallworth, Sidanius, & Siers, 1997). To the extent that personal control threats elicit needs for structure and to the extent that hierarchical jobs offer that structure regardless of one's position within the hierarchy, people who lack control should show an increased interest in hierarchy-enhancing jobs even when those jobs are low in power and status.

Method

Participants. We recruited 74 participants who were told the study was examining past experiences and job preferences. Five participants were excluded for response patterns, leaving 69 (62% women, ages 18–71, *median* = 29). When no participants were excluded, all significance tests of interest remained $p < .05$.

Materials and procedure. Participants first completed a personal control manipulation in which they recalled and wrote about an event that threatened ($n = 33$) or did not threaten ($n = 36$) personal control using the same manipulation as Study 3 (based on Whitson & Galinsky, 2008).

Next, participants read short descriptions (2–3 sentences) of 20 different jobs from five occupations (advertising, public relations, real estate development, personnel management, and librarian). These materials were taken from past social dominance research (Pratto & Espinoza, 2001; Pratto et al., 1997) in which they were manipulated to be (a) hierarchy-enhancing or hierarchy-attenuating, and (b) high or low in power and status. We refer to the jobs with high power and status as high-position jobs and those low in power and status as low-position jobs. Within each occupation, there were four matched job descriptions corresponding to every combination of hierarchy and position. For example, within personnel management, the hierarchy-enhancing, high-position job was head of human resources with an emphasis on merit policies; the matched hierarchy-attenuating, high-position job was also head of human resources but with an emphasis on employment equity policies instead. Corresponding low-position jobs were human resources officers instead of department heads, again in either a hierarchy-enhancing merit role or a hierarchy-attenuating employment equity role. See the Appendix for the list of job titles. Participants indicated whether each job was appealing with a single item using a 9-point scale (1 = *not at all appealing,* 9 = *extremely appealing*).

Results and Discussion

Job preferences were submitted to a 2 (Control threat manipulation: threatened vs. unthreatened) by 2 (Job hierarchy: hierarchy-enhancing vs. hierarchy-attenuating) by 2 (Job position: high-position vs. low-position) mixed design ANOVA, where the control manipulation was between-participants and job hierarchy and job position were within participants. First, there were two significant main effects. High-position jobs ($M = 4.98$, $SE = .16$) were preferred more than low-position jobs ($M = 4.76$, $SE = .15$), $F(1, 67) = 4.33$, $p = .04$, $\eta_p^2 = .06$, and hierarchy-enhancing jobs ($M = 4.99$, $SE = .15$) were marginally preferred more than hierarchy-attenuating jobs ($M = 4.5$, $SE = .16$), $F(1, 67) = 3.07$, $p = .09$, $\eta_p^2 = .04$. There was no main effect of control threat, $F(1, 67) = 1.61$, $p = .21$, $\eta_p^2 = .02$.

More important, the predicted two-way interaction between the control manipulation and job hierarchy emerged, $F(1, 67) = 9.93$, $p = .002$, $\eta_p^2 = .13$, and the two-way interaction between the control manipulation and job position was not significant ($F < 1$, $\eta_p^2 = .01$). All other interactions were not significant (all $ps > .20$). That is, the control manipulation affected the appeal of hierarchy-enhancing jobs regardless of position.

As predicted and shown in Figure 6, follow-up tests showed that participants in the control threat condition found hierarchy-enhancing jobs more appealing, compared to participants who were unthreatened, $F(1, 67) = 5.96$, $p = .02$, $\eta_p^2 = .08$. The effect of threat was significant within both high-position jobs, $t(67) = 2.51$, $p = .02$, $d = .55$, and low-position jobs, $t(67) = 2.35$, $p =$

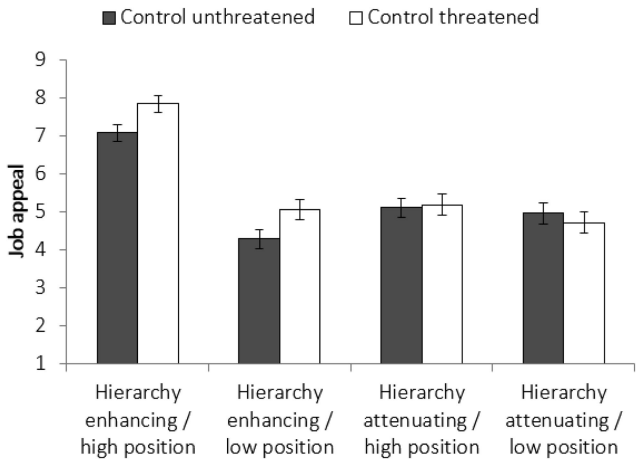

Figure 6. Study 7: Effects of type of job and personal control threat on job appeal. Error bars represent standard error. Scale range equals 1–9.

.02, $d = .56$. The personal control manipulation did not affect the appeal of hierarchy-attenuating jobs ($F < 1$).[5]

Study 7 provides critical evidence that control threat increased interest in hierarchy enhancing jobs, even when those jobs were lower in power and status. This pattern of results is consistent with the hypothesis that hierarchies and the sense of psychological structure they offer can serve as a means of compensatory control even to individuals in subordinate positions. This study also demonstrated that preference for hierarchies after control threat occurred in domains that are consequential for the self—job choice—in addition to the more general attitudes toward workplace hierarchy investigated in Studies 4–6. Data from across our studies point to the primacy of hierarchy as a means of establishing structure in one's social environment when personal control is low.

Meta-Analysis of Studies 4–7

Because the basic effect of threat on preference for hierarchy was in the predicted direction but nonsignificant within the no passage condition in Study 6, $p = .29$, and was marginally significant in the study mentioned in the discussion of Study 4, $p = .08$, we conducted a meta-analysis (Hedges & Olkin, 1985) on Studies 4–7 and the study mentioned in the discussion of Study 4, to get a better estimate of the significance and size of the threat effect of interest.

The meta-analysis produced a significant effect of control threat, Fisher's $Z = 4.32$, $p = .00001$, and a moderate average effect size, $d = .41$, suggesting that the effect is reliable across these studies.

General Discussion

Across seven studies, we demonstrated a motivational account for the ubiquity of social hierarchies within human society: We proposed that the structured nature of hierarchies makes them well suited to serve as a means of compensatory control. Consistent with this account, when personal control was threatened, participants perceived more hierarchy in ambiguous social interactions (Study 3) and reported increased support for hierarchies in organizations (Studies 4–5) and occupational choice (Study 7).

The current studies also investigated a psychological mechanism for the link from control threat to hierarchical preferences: perceptions of structure. Hierarchy was perceived to be more structured than equality (Study 1), and perception that one's workplace was a structured hierarchy was associated with enhanced feelings of job control (Study 2). Furthermore, hierarchical organizations were appealing to individuals high in a conceptually relevant individual difference, personal need for structure (Study 5). However, when hierarchy was depicted as less structured it was no longer appealing to those whose personal control was threatened (Study 6), and employees who worked in hierarchical organizations that they perceived as lacking procedural justice—an important component of organizational structure—reported feeling lower control (Study 2). These findings bolster our interpretation that structure is the psychologically attractive component of hierarchies for those who lack control.

Although past research has identified how hierarchies might serve as an means of personal control via the power they provide (Inesi et al., 2011; Magee & Galinsky, 2008), this is the first work to provide evidence for the specifically compensatory nature of hierarchies; that they are not just a means of personal control for people in high positions but may be an external source of structure for people across all positions in a hierarchy. This work is consistent with status compensation work (Rucker & Galinsky, 2008, 2009; Rucker et al., 2011) showing that lacking power increases a desire for status objects because they signal to others a higher standing in the hierarchy. When people lack control, they prefer hierarchy because of the structure it provides. When people lack power, they prefer high-status objects because of the hierarchical standing they provide. Loss of control does not threaten one's hierarchical standing and thus we did not observe status seeking as a means for restoring a sense of control.

The current research supports functional accounts of hierarchies (Halevy et al., 2011; Magee & Galinsky 2008) by demonstrating that hierarchies not only enhance coordination and performance but also provide a psychological sense of structure. The current research also complements two prevailing theories of hierarchy maintenance, social dominance (Sidanius & Pratto, 1999) and system justification (Jost, Banaji, & Nosek, 2004; Jost & Banaji, 1994). Both of these theories provide thorough and insightful descriptions of how people respond to hierarchies and participate in them, but the current work differs from these theories in important ways. Social dominance theory emphasizes that hierarchy maintenance is driven by high-status groups' desire to maintain their dominance and control of economic resources (Sidanius & Pratto, 1999). In contrast, our work suggests that low-status groups may support hierarchies not because of imposed ideologies or the threat of force but because the social structure offered by hierarchies compensates for situations of low personal control.

According to system justification theory, individuals will justify and maintain hierarchies to the extent that they are typically the status quo, due to overarching needs to perceive one's social systems as legitimate (Jost & Banaji, 1994; Jost, Banaji & Nosek, 2004). Our work suggests that hierarchy may have a particular psychological advantage over equality even when it is not the status quo. The need for structure may be an especially powerful explanation of hierarchy preference because this motive is not contingent on dominance concerns or status quo conditions but is a general psychological need held by both low-status and high-status group members. The desire to achieve structure through hierarchy can thus explain why people would be attracted to hierarchy even if they are in a relatively low social position or if hierarchy is not the status quo in their society or organization.

In other work, Deutsch (1985) described the difficulty in awakening a sense of injustice among the oppressed. This desensitization to injustice is often driven by ideologies and myths that justify

[5] Because previous work has shown that social dominance orientation (SDO; Pratto, Sidanius, Stallworth, & Malle, 1994) affects interest in hierarchy enhancing and attenuating jobs (Pratto & Espinoza, 2001), we measured SDO_6 ($\alpha = .92$) before any manipulations to control for its effect. Zero-order correlations showed that SDO was positively but marginally associated with job appeal for the hierarchy-enhancing jobs, $r(67) = .21$, $p = .09$, and trended toward a negative correlation with job appeal for the hierarchy-attenuating jobs, $r(67) = .13$, $p = .30$. The same pattern found in Pratto and Espinoza (2001). Multiple regression analyses showed that SDO did not interact with threat to predict the appeal of any of the job types (all $ps = .16$ to $.56$) and that Study 6's results remained the same whether SDO was included or not in the model. The main results presented do not control for SDO.

hierarchical social structures (e.g., that subordinate groups deserves their position; see also Lane, 1959). Deutsch noted that the legitimacy of these hierarchy-sustaining ideologies must often be weakened before disadvantaged individuals will demand change. But if these weakened ideologies still serve disadvantaged individuals' needs for structure, they may be motivated to retain them and the structures that produce them. This seems especially likely given that experiences of low personal control are common in the daily lives of subordinate groups and thus, presumably, needs for structure are often more chronically salient for them.

This work also contributes to our theoretical understanding of how Personal Need for Structure (Neuberg & Newsom, 1993) relates to ideologies of hierarchy maintenance such as social dominance orientation (SDO; Pratto et al., 1994), right-wing authoritarianism (RWA; Altemeyer, 1981), and political conservatism (Jost, Glaser, et al., 2003). Past work has shown correlationally that PNS produces prejudice and discrimination via mediation through SDO and RWA (e.g., Altemeyer, 1998; Heaven & Bucci, 2001; Van Hiel et al., 2004). The current work bolsters these findings by providing experimental evidence that motivational needs for structure may contribute, in part, to the attractiveness of hierarchy.

Limitations and Future Directions

The current studies used both direct (attitude) and indirect (job preference) operationalizations of preference for hierarchy across a variety of domains. However, all the studies used experimental manipulations that depended on recalling a time when one lacked control or reading articles that claimed the world is uncontrolled. These manipulations are well validated and have been shown to induce compensatory control strivings and a search for structure. Nonetheless, future research should consider alternative ways of manipulating the need for control. Future research might also explore these processes in the field, looking for natural experiments of control threat and testing for hierarchical preferences in actual organizations and social settings. These studies explored the link between personal control and hierarchy within workplace and job selection contexts, but it remains to be seen whether this process generalizes to other domains such as political and public policy contexts. Last, we conducted all of these studies online using samples of American adults. This allowed us to recruit individuals with more employment experience than typical undergraduate samples, thereby increasing the generalizability of our findings, but future research would do well to include complementary laboratory methodology and test these relationships in other cultural samples.

We have argued that people who lack control seek out structure in their social environments and thus prefer hierarchies because they offer structure. It is possible, however, that the control threats that we used induced a need for power or status in our participants. If so, participants might have preferred hierarchy because it offered an opportunity to exercise power over others or to have high status. This account becomes less plausible when considering the studies as a whole. Study 7 in particular strongly suggests that preference for hierarchy induced by control threat cannot be reduced to needs for power because threatened participants increased their interest in hierarchy-enhancing jobs but not in high-position jobs that were not also hierarchy enhancing. Furthermore, the effects of control threat on hierarchy preference remained when status was controlled for (Study 4) and the effects of workplace hierarchy on self-efficacy occurred independent of status (Study 2). To be clear, support for hierarchy is almost certainly rooted in needs for power and status under many circumstances, and gaining power might be an effective means of reasserting personal control over one's environment (Inesi et al., 2011); we suggest only that power strivings are not the lone explanation for the current findings. Future research could pit motivations for power and structure against one another to see how and under what circumstances each relates to preferences for hierarchy.

Given that hierarchy is an important feature of status quo social structures (Jost et al., 2003; Sidanius & Pratto, 1999), one might wonder whether the motivated hierarchy preference documented in the present studies is just a special case of motivated status quo preference. We believe that the weight of the evidence suggests that hierarchy's connection with structure and its ability to promote self-efficacy, documented in Studies 1 and 2, motivate people to embrace hierarchy when their sense of control is threatened. For example, Study 6 manipulated the association of hierarchy with structure but did not manipulate its association with the status quo. The fact that control threat lowered participants' preference for hierarchy when hierarchy was associated with disorder suggests that it is the association of hierarchy with order and not its association with the status quo that motivates people to embrace hierarchy when their control needs are high. Although the association of hierarchy with the status quo may be one reason that hierarchy is preferred when control is threatened, this association is not the only reason that control threat motivates hierarchy preference.

The current work did not investigate other similar existential motivations, such as needs for certainty (Hogg, 2007; McGregor, Zanna, Holmes, & Spencer, 2001; van den Bos, 2009), meaning (Heine, Proulx, & Vohs, 2006), and symbolic immortality (Solomon, Greenberg, & Pyszczynski, 2004). Although threats to personal control have specific and distinguishable effects that are distinct from these other motivations (Shepherd et al., 2011), it is plausible that support for hierarchies might also be driven by psychological needs such as these (e.g., Rast, Hogg, & Giessner, 2012).

In Search of Egalitarianism

Is hierarchy better or worse than equality? Hierarchy is often rife with unfairness and undeserved advantage that can be daunting to challenge. Yet, for some organizational tasks or goals it may also be more efficient than flatter forms of social organization (Abramitzky, 2011; Halevy et al., 2011, 2012; Ronay et al., 2012; Tiedens et al., 2007; Zitek & Tiedens, 2012; but see Deutsch, 1985, 2006; Maner & Mead, 2010). Activists who seek to dismantle illegitimate hierarchies should differentiate between the hierarchies they oppose and hierarchies that are fair and efficient. However, such social arrangements may be less able to serve as a source of structure in times of low personal control.

Our research suggests these attempts to flatten hierarchies (e.g., Kay et al., 2009; Shaer, 2013; Silverman, 2012; Worthy, 1950) will face numerous obstacles, even purely psychological ones, because equality is less appealing as a means of offering structure than hierarchical differentiation. Yet, our findings also suggest

framing strategies that egalitarian reformers might use to counteract resistance stemming from unfulfilled control needs. Study 6 shows that a strategy of highlighting the ways that hierarchy can be unpredictable and disorderly can convert the need for control from being a barrier to being an incentive for supporting egalitarian reform. A second strategy would be to highlight ways that structure and order can be achieved in nonhierarchical designs of organizations and institutions. A third strategy would be to make sure to always affirm an audience's personal control resources whenever proposing egalitarian reforms. Egalitarian reform advocates should expect little success at winning over adherents to their cause if they neglect to use these or some other strategy to address their audience's control needs.

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Appendix

Job Titles Used in Study 6

Job position	Hierarchy-enhancing	Hierarchy-attenuating
High	Communications director, private corporation	Communications director, nonprofit corporation
	Human resources department head for merit policies	Human resources department head for equity policies
	Advertising project lead, corporate marketing	Advertising project lead, nonprofit marketing
	Regional manager, commercial developer	Regional manager, Department of Housing and Urban Development
	Head science librarian, defense contractor	Head librarian, public library
Low	Communications department assistant, private corporation	Communications department assistant, nonprofit corporation
	Human resources officer, merit policies	Human resources officer, equity policies
	Advertising clerk, corporate marketing	Advertising clerk, nonprofit marketing
	Regional office contact, commercial developer	Regional office contact, Department of Housing and Urban Development
	Librarian's assistant, defense contractor	Librarian's assistant, public library

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