An Early-Emerging Explanatory Heuristic Promotes Support for the Status Quo

Larisa J. Hussak and Andrei Cimpian
University of Illinois

People often view their sociopolitical systems as fair and natural despite indisputable biases in their structure. Current theories of this phenomenon trace its roots to a motivation to alleviate anxiety and uncertainty. Here, we propose a complementary cognitive pathway for these system-endorsing attitudes. Specifically, we propose that the fundamental mechanisms through which people explain the world around them may also be a source of such attitudes. These explanatory processes are inadvertently biased to yield inherent or internal facts as explanations for a wide variety of social and natural phenomena, including sociopolitical patterns (e.g., Why are some people rich? Because they are really smart). In turn, this bias toward inherent attributions makes it seem that the observations being explained (such as the societal status quo) are legitimate and thus worthy of support. Four studies with participants as young as 4 years of age provided correlational and experimental evidence for the hypothesized link between explanatory processes and support for the status quo. These findings suggest that the tendency to endorse existing sociopolitical arrangements emerges partly on a foundation laid early in life by a basic component of human cognition.

Keywords: system justification, explanation, inherence heuristic, social cognition, development

Supplemental materials: http://dx.doi.org/10.1037/pspa0000033.supp

After escaping from the North Korean prison camp system into which was born, Shin Dong-hyuk revealed in an episode of *60 Minutes* that, for much of his internment, he never questioned his place in that system. Instead, he believed that "those people who carry guns were born to carry guns. And prisoners . . . were born as prisoners" (Cooper, 2012; see Choe, 2015, for updated details of Shin's story). In other words, the social hierarchy in which he was embedded seemed to him to be exactly as it should be, with each person occupying the position they were born to occupy. Although Shin's experiences are unique in many respects, his attitude regarding the legitimacy of his social setting is surprisingly common. A robust tendency to uphold existing sociopolitical structures—even those that may be harmful to one's own welfare—has been documented in a variety of contexts and participant populations (e.g., Jost & Banaji, 1994; Jost, Banaji, & Nosek, 2004; Jost, Pelham, Sheldon, & Sullivan, 2003; Newheiser, Dunham, Merrill, Hoosain, & Olson, 2014; Nosek et al., 2007; Olson, Dweck, Spelke, & Banaji, 2011; cf. Brandt, 2013; Sengupta, Osborne, & Sibley, 2014). This support of the status quo takes many forms.

People sometimes develop implicit (or even explicit) preferences toward high-status groups, preferences that legitimize the privileged position of these groups in society (e.g., Newheiser et al., 2014; Nosek et al., 2007). People also tend to rationalize inequalities by appealing to stereotypes (e.g., negative stereotypes about low-status groups; Jost & Banaji, 1994) or by subscribing to ideologies that make such inequalities appear inevitable (e.g., meritocratic beliefs; LeVine & Campbell, 1972; Sidanius & Pratto, 1999). Whatever its precise form, the general tendency to imbue current sociopolitical systems with legitimacy seems to be widespread.

On reflection, it's rather remarkable that beliefs about the legitimacy of the status quo are as common as they are. Research across the academic spectrum suggests that—contrary to these beliefs—most sociopolitical systems exhibit more than a fair amount of arbitrariness and bias (e.g., Diamond, 1998; Foucault, 1978; Sidanius & Pratto, 1999; Unger, 1983; Watts, 2011). Also puzzling is the fact that attitudes that endorse the status quo emerge early in development: Even preschool children seem prone to perpetuate existing inequalities by, for example, preferentially distributing resources to advantaged rather than disadvantaged groups (Olson et al., 2011). These considerations raise an obvious question: Why would people so often, and from such a young age, consistently adopt system-supporting attitudes?

Here, we propose that system-legitimizing beliefs emerge in part as a byproduct of the basic cognitive mechanisms people rely on to explain the world around them. More specifically, our claim is that

the explanatory processes people typically employ have certain quirks that—when these processes are used to explain broad societal patterns—bias their output toward system-supporting intuitions. This view suggests that there are important cognitive inputs into a phenomenon that, as we summarize below, has been largely conceptualized as a motivated tendency.

Motivated Origins of System Justification

Theorizing on the tendency to uphold current sociopolitical conditions has suggested that people are motivated to see their societal systems in a positive light, just as they are motivated to maintain a positive image of their own selves and their in-groups (Jost & Banaji, 1994): ". . . [P]revailing conditions, be they social, political, economic, sexual, or legal, are accepted, explained, and justified simply because they exist" (p. 11). Doing so, however, often comes at a cost: Accepting the status quo entails accepting that one deserves one's station in life, which—for the majority of people who are disadvantaged by the system—is in conflict with the motive to protect and enhance one's self-image. Why would people defend the system if doing so inflicts psychological and material harm?

This question was not resolved until later formulations of the theory, in which defending the status quo was hypothesized to help people "cope with and adapt to unjust or unpleasant realities that appear to be inevitable" (Jost & Hunyady, 2002, p. 146; see also Cichocka & Jost, 2014; Jost & Hunyady, 2005; Liviatan & Jost, 2011). From this perspective, the tendency to support current societal arrangements emerges as people attempt to alleviate the unpleasant feelings that may arise when contemplating the structures of one's society and one's position in these structures (e.g., feelings of uncertainty and uncontrollability, of threat and anxiety, of discontent) by endorsing the belief that society is fair and just, and thus that one's position in it is warranted. Because system-justifying beliefs fulfill this important palliative function, people are motivated to endorse them, even if doing so sometimes comes at the price of a hit in self-esteem.

This palliative account is supported by a wealth of evidence. For example, the defense of the status quo is most vigorous among those individuals who are most motivated to avoid the affective consequences of contemplating an unfair society (for a review, see Jost & Hunyady, 2005). Even more convincingly, experimental manipulations that heighten these affective consequences (e.g., by making people feel dependent on their social systems) lead to corresponding increases in endorsement of palliative, system-endorsing beliefs (Kay et al., 2009; see also Jost & Hunyady, 2005; Jost, Kivetz, Rubini, Guermandi, & Mosso, 2005).

In the present research, we argue that this exclusive focus on the role of motivation in the defense of the status quo has led researchers to overlook important sources of system support that are not motive-driven but rather have to do with biases in the default information-processing mechanisms by which humans interpret the world. Thus, we seek to provide evidence for a complementary pathway to system justification, one that is rooted in the basic cognitive processes that enable people to generate explanations for what they observe.

Prior Evidence for a Cognitive Pathway to System Support

Preliminary support for a link between the process of extracting understanding from the world and the tendency to endorse the status quo can be found in the work on psychological essentialism (e.g., Dar-Nimrod & Heine, 2011) and the correspondence bias (e.g., Gilbert & Malone, 1995).

Psychological Essentialism

People implicitly assume that the members of natural kinds (e.g., dogs) and many social groups (e.g., African Americans) share a deep, microstructural essence that is passed on from generation to generation and that gives rise to category-typical features and behaviors (e.g., Dar-Nimrod & Heine, 2011; Gelman, 2003, 2004; Haslam, Rothschild, & Ernst, 2000; Hirschfeld, 1995; Medin & Ortony, 1989; Rhodes, Leslie, & Tworek, 2012; Rothbart & Taylor, 1992; Taylor, Rhodes, & Gelman, 2009). These essentialist tendencies are likely to influence how people make sense of social patterns, including status and socioeconomic disparities. Specifically, essentialism may lead people to attribute such patterns to the presumed biological essences of the groups involved, thus casting existing hierarchies as natural and legitimate (e.g., Haslam, Rothschild, & Ernst, 2002; Keller, 2005; Williams & Eberhardt, 2008).

However, the research to date has invoked essentialist beliefs as means of status-quo rationalization that is *downstream* of palliative motivations (e.g., Brescoll et al., 2013; Morton, Postmes, Haslam, & Hornsey, 2009; Kraus & Keltner, 2013; see also Keller, 2005; Roets & Van Hiel, 2011). For instance, Brescoll et al. (2013) found that inducing feelings of system threat (which arguably heightened palliative needs) caused participants to rely on essentialist beliefs significantly more than when exposed to system-affirming information (see also Morton et al., 2009). These findings are therefore more consistent with the claim that essentialism is a vessel through which palliative motives are expressed: When we are anxious about our place in society, we essentialize to reaffirm the naturalness of existing hierarchies and thereby alleviate our anxieties.

The Correspondence Bias

People have a robust bias to attribute others' behaviors to corresponding internal dispositions rather than contextual or situational forces (for reviews, see Gawronski, 2004; Gilbert & Malone, 1995; Jones, 1979; Ross, 1977; Trope & Gaunt, 2007). This correspondence bias may also legitimize the hierarchies observed in the world (e.g., Ross et al., 1977), as individuals' successes and failures are understood as arising from internal traits and thus as reflecting a sort of natural order. Indeed, the overattribution of individuals' outcomes to dispositional traits has been associated with conservative ideology (e.g., Altemeyer, 1998; Skitka, Mullen, Griffin, Hutchinson, & Chamberlin, 2002; Sniderman, Brody, & Tetlock, 1991) and victim-blaming behaviors (e.g., Lerner, 1980; Lerner & Simmons, 1966).

As was the case with essentialism, however, the literature that has explored the link between the correspondence bias and endorsement of the status quo has conceived of internal attributions as downstream—or as a byproduct—of motives, such as the need

for cognitive closure (e.g., Jost, Kruglanski, & Simon, 1999) or the desire to see the world as fair and just (e.g., Dalbert, 2001; Hafer & Bègue, 2005). In other words, correspondent attributions that uphold societal conditions might simply be a cognitive tool in the service of various motives.

Interim Conclusion

So far, the research linking explanatory inferences with system justification has portrayed these inferences as mere means of achieving some motivated end. Here, we propose instead that the cognitive processes by which people explain the world might in and of themselves give rise to system-supporting attitudes, whether or not motives are present. To characterize these processes, we will go beyond the mechanisms previously identified in the literature to propose what we see as a more satisfactory account: namely, the *inherence heuristic* (Cimpian & Salomon, 2014a, 2014b).

Characterizing the Explanatory Underpinnings of System Support

Although essentialist and correspondent inferences could in principle legitimize the status quo even without prompting by motives (e.g., Gelman, 2003; Gilbert, Pelham, & Krull, 1988), these inferences are nevertheless limited in important respects. For example, the set of social groups that are essentialized is relatively small, leaving out many groups that figure prominently in people's reasoning about their societies (e.g., Midwesterners, the middle class, citizens of America, doctors; see Haslam et al., 2000, 2002; Kraus & Keltner, 2013; Lickel et al., 2000). Consider also that the correspondence bias was formulated to account specifically for explanations of individuals' behaviors. In contrast, many of the judgments that defend the status quo in everyday life pertain to broad facts and might thus be based on different information than those concerning individual actions, especially because broader groups lack some of the unity and coherence that individuals are assumed to possess (e.g., Hamilton & Sherman, 1996; Kashima et al., 2005; McConnell, Sherman, & Hamilton, 1997; but see Nier, Bajaj, McLean, & Schwartz, 2013). In sum, essentialism and the correspondence bias lack some of the inferential machinery needed for a complete cognitive account of system support.

Essentialist and correspondent inferences legitimize the status quo because they promote a focus on internal explanations. However, rather than simply being the product of special-purpose mechanisms such as these, the overreliance on internal explanations may actually be due to the more general cognitive process by which people come up with in-the-moment explanations (Cimpian, 2015; Cimpian & Salomon, 2014a, 2014b). In many everyday circumstances, explaining proceeds heuristically. That is, people generate explanations by relying on information that is easily accessible in memory rather than on effortful searches through the space of possible judgments to identify the optimal explanation. In this respect, explanations are similar to numerous other heuristic judgments that are generated during ordinary cognitive activity (e.g., Epley & Gilovich, 2006; Evans, 2006, 2008; Kahneman, 2011; Stanovich, 1999; Stanovich & West, 2000). Importantly, the fact that the process of explaining relies on information that is easily retrieved from memory gives rise to certain commonalities in the content of the explanations generated. Memory is organized such that, when explaining an observation

involving entity *X*, the information that is most easily activated usually consists of *inherent*, or constitutive, facts about *X* (e.g., Higgins, 1996; Hussak & Cimpian, 2014; Lewis, 1983; McRae, Cree, Seidenberg, & McNorgan, 2005; Weatherson & Marshall, 2014). For instance, a quick explanation for why the Mona Lisa is so popular might appeal exclusively to the inherent artistic qualities of the painting itself (e.g., the subject's captivating smile). Such an explanation overlooks the possibility that other, noninherent factors contributed to the Mona Lisa's popularity, although these factors are often a crucial part of an accurate explanation. In the Mona Lisa's case, for example, it was its 1911 theft from the Louvre museum which propelled it to international fame (Watts, 2011). In sum, the heuristic process that generates explanations for a wide range of everyday observations is likely to bias the content of these explanations toward an overreliance on inherent facts, and is thus termed the *inherence heuristic* (Cimpian, 2015; Cimpian & Salomon, 2014a, 2014b).

To clarify, inherent facts are those that describe what an entity is like, in and of itself (e.g., Barr & Caplan, 1987; Lewis, 1983; Weatherson & Marshall, 2014).[1] For example, the fact that a laptop is rectangular and has metallic components describes inherent properties of this entity. In contrast, the fact that the laptop is stored in a neoprene sleeve or was made in Taiwan are noninherent (or extrinsic) facts about it—facts that involve entities other than the laptop itself. Inherent facts dominate the output of the inherence heuristic simply because they are highly accessible in memory (i.e., because they are "low-hanging fruit," retrieval-wise)—and not because people seek them out preferentially for the purpose of constructing explanations.[2] This bias in the output of the inherence heuristic also makes it relevant to the tendency to support the status quo: Any sociopolitical arrangement that is explained in inherent terms is also likely to be seen as reasonable and fair—just as it seems reasonable that, given its (supposedly) unmatched artistic qualities, the Mona Lisa should be the most famous painting in the world. In effect, the typical output of the inherence heuristic legitimizes the observations it is explaining, casting them as byproducts of how the relevant entities are constituted.

The inherence heuristic supplies in-the-moment explanations for a broad range of observations, including those that are the usual targets of essentialist and correspondent inferences (e.g., why women are underrepresented in science, why Jim is a CEO) but also many others that fall outside the scope of these previously studied inferences but are nevertheless relevant to the defense of the status quo (e.g., why *The Star-Spangled Banner* is sung before sporting events). As such, we propose that it provides the most complete characterization of a cognitive pathway to system support. Consistent with this claim,

---

[1] In this account, *inherence* is a psychological, not metaphysical, construct. Although it is unclear whether inherent features truly exist in the world (e.g., Weatherson & Marshall, 2014), this construct has psychological reality (e.g., Hussak & Cimpian, 2014; Prasada & Dillingham, 2006, 2009).

[2] Note that, because the outputs generated by this heuristic process vary depending on what is accessible in memory, the pull of inherent explanations is not inescapable. For instance, the operation of the inherence heuristic can be influenced by contextual and cultural factors, which can increase the memory accessibility of various noninherent facts, and thus their prevalence in explanations (Choi, Nisbett, & Norenzayan, 1999; Cimpian & Salomon, 2014a; Morris & Peng, 1994). However, we argue that, in its basic form, the process by which many everyday explanations are generated introduces a degree of bias in their content, leading them to appeal to inherent facts more often than might be warranted.

inherence-biased heuristic explanations have recently been hypothe-sized to be the root cause of other cognitive phenomena that make the status quo appear desirable. For example, the system-legitimizing existence and longevity biases investigated in prior work—biases that lead people to view existing and long-standing states of affairs, respectively, as legitimate—might themselves stem from a "heuristic tendency to ascribe existence and longevity to inherent features" (Eidelman & Crandall, 2014, p. 54; see also Eidelman, Crandall, & Pattershall, 2009; Eidelman, Pattershall, & Crandall, 2010). This provides further reason to adopt the inherence heuristic as a unified framework for understanding the cognitive underpinnings of system support.

The Present Research

We proposed that people interpret societal patterns via an in-herence heuristic even when there is little need to rationalize these patterns; in turn, the typical output of this heuristic makes the status quo appear natural and reasonable, and thereby worthy of support. The key prediction of this proposal is that judgments legitimizing the status quo should emerge reliably even in the absence of motives to see the status quo in a positive light. To test this prediction, we designed our studies so as to reduce, as much as possible, the influence of such motives. Note, however, that this strategy is not trivial to carry out, in part because it is notoriously challenging to determine whether any particular judgment is gen-erated simply as a result of run-of-the-mill cognitive activity or, alternatively, because of some ulterior motive (e.g., Ross, 1977; Miller & Ross, 1975; Tetlock & Levi, 1982). Even so, the moti-vated account of system justification is actually quite specific about the benefits of system-justifying judgments: "they reduce anxiety, guilt, dissonance, discomfort, and uncertainty for people who are in positions that are either advantaged or disadvantaged" (Jost & Hunyady, 2002, p. 114). Thus, rather than trying to reduce every single source of motivation, we can take on the more modest task of reducing the specific sort of palliative benefits that are provided by system-supporting judgments.

We did so in two complementary ways. First, we asked partic-ipants to reason about societal systems to which they did not belong (e.g., the Blarks and the Orps on the fictional planet Teeku). This feature of the design was intended to minimize the personal involvement of our participants: When reasoning about alien planets, one should derive no benefit from defending what-ever status quo is in force on these planets. Second, we tested not just adults but also children as young as 4 years of age. In principle, it is possible that adults would draw explicit analogies between the fictional societies described in our tasks and their own experiences, which might allow palliative motives to influence their judgments. However, young children's analogical reasoning abilities are limited (e.g., Gentner & Rattermann, 1991; Richland, Morrison, & Holyoak, 2006), insofar as children often fail to see the deeper relational similarities across superficially different con-texts. If children are less likely to recognize the structural parallels between their own societies and the novel ones described in our studies, then their judgments should correspondingly be less in-fluenced by palliative needs.

In sum, we chose our stimuli and participants so as to limit the influence of palliative motives. Owing to these methodological choices, the system-endorsing attitudes adopted by the participants

in our studies would provide evidence for a cognitive pathway into the tendency to defend the status quo. We formulate three specific predictions as follows:

Prediction 1

Both adults and children should explain unfamiliar sociopoliti-cal patterns predominantly in terms of the inherent features of their constituents rather than by appealing to noninherent facts (e.g., extrinsic, historical; Studies 1 through 3).

Prediction 2

The extent of adults' and children's reliance on inherent explana-tions for unfamiliar sociopolitical patterns should be predictive of their tendency to view these patterns as fair and just (Studies 1 and 2).

Prediction 3

An experimental manipulation of children's explanations for unfa-miliar sociopolitical patterns should have a downstream effect on the extent to which children view these patterns as legitimate (Study 4).

Study 1

Study 1 provided a test of our first two predictions in a sample of adult participants. That is, we tested (1) whether participants would explain unfamiliar status disparities in inherent terms and (2) whether this preference would in turn predict the degree to which they endorse these disparities.

Method

Participants. We recruited 101 adult participants (41 males, 60 females; M_{age} = 34.16 years, SD = 12.16) from Amazon's MTurk service. Participants completed all tasks online in a single session and were paid $0.75. Five additional participants were tested but excluded from the final sample because they had IP addresses outside of the United States (n = 1), failed the catch questions in the Inherence Heuristic Scale (n = 3; see the follow-ing section), or indicated during debriefing that they had not paid attention during the study (n = 1).

Materials and procedure. Four vignettes describing status disparities on alien planets were created (e.g., on planet Teeku, "the Blarks have a lot more money than the Orps"). They included four pictures of unfamiliar planets (one for each disparity) and eight pictures of people to represent the two groups on each of the four planets (e.g., the Blarks and the Orps). The two individuals representing the groups on a certain planet were matched in terms of age, race, and gender, and differed only in their costume. Moreover, the assignment of each picture to the high- and the low-status group was counterbalanced across subjects, so that no perceptual cues consistently co-occurred with social status. The group's name was printed beneath each picture, and the high-status group always appeared on the left.

Two explanations were provided for each disparity, in random order: an explanation that appealed to inherent features (e.g., "Maybe the Blarks are smarter, or are better workers than the Orps are, or there's something else about them") and an explanation that appealed to extrinsic or historical facts (e.g., "Maybe the Blarks won a war, or

Table 1

Sample Inherent and Extrinsic Explanations Presented for the Disparities in Studies 1, 2, and 4

Study	Inherent explanation	Extrinsic explanation
1 and 2	. . . maybe the Blarks have a lot more money than the Orps because the Blarks are smarter, or are better workers than the Orps are, or there's something else about them that made them get a lot of money.	. . . maybe the Blarks have a lot more money than the Orps because of things that happened a long time ago, like maybe the Blarks won a war, or they found gold, or something else happened that made them get a lot of money.
4	There are a lot of things that are the same about the Blarks and the Orps. They live in the same neighborhoods, go to the same schools, and are both very friendly. But there's one really important thing that's different about the Blarks and the Orps. The Blarks are really really smart, and are much better workers than the Orps are. They are a lot smarter, and are much better workers than the Orps. Because of this, the Blarks have a lot more money than the Orps. They have a lot more money because they're smarter and are better workers.	There are a lot of things that are the same about the Blarks and the Orps. They are both very smart, they like the same sorts of things, and are both very friendly. But there's one really important thing that's different about the Blarks and the Orps. The Blarks happen to live in a town that has much better jobs, and a lot more banks. The town where the Blarks live happens to have much better jobs and a lot more banks. Because of this, the Blarks have a lot more money than the Orps. They have a lot more money because they happen to live in a town with better jobs and a lot more banks.

found gold, or something else happened a long time ago"; see Table 1 and the online supplemental materials). The inherent and extrinsic explanations were carefully formulated to meet several criteria: First, they were relatively broad, so as to capture a range of inherent ("there's something about them") and extrinsic ("something happened a long time ago") intuitions. Second, they were matched on length and in-principle plausibility (see the pilot studies section). Third, they were worded simply, so that they could be used with children as well (Study 2). Participants read the inherent and extrinsic explanation for each disparity and indicated their agreement with each explanation on a four-point scale (e.g., ". . . is [it] right or not right to think that the Blarks have a lot more money because of something about them [vs. something that happened a long time ago]?"; 1 = *really not right* to 4 = *really right*).

To assess defense of the status quo, we asked participants to rate their liking for the high- and low-status groups (e.g., "How favorable is your impression of the Blarks [Orps]?") and the fairness of the disparity between the two groups (e.g., "How fair do you think it is that the Blarks have a lot more money than the Orps?"), each on nine-point scales. Liking for the low-status groups was subtracted from liking for the high-status groups, and then this difference was standardized and averaged with participants' ratings on the fairness items (also standardized) to derive a single composite measure of system support ($\alpha = .71$).

Finally, participants completed three individual difference measures: the General System Justification Scale (Kay & Jost, 2003), the Need for Cognition Scale (Cacioppo, Petty, & Kao, 1984), and the Inherence Heuristic Scale (Salomon & Cimpian, 2014). The General System Justification Scale is composed of seven statements that measure the extent to which people see their own social systems as fair and just (e.g., "In general, you find society to be fair"). This scale served as a control in our analyses, allowing us to further investigate whether participants' explanatory tendencies predict their support for unfamiliar status disparities above and beyond their (potentially motivated) tendency to view their own sociopolitical systems in a positive light. The Need for Cognition Scale (Cacioppo, Petty, & Kao, 1984) is an 18-item measure that assesses participants' attitudes regarding effortful thinking (e.g., "The notion of thinking abstractly appeals to me"). This scale was also included as a control: Our proposal is of a unique link between heuristic explanations and system support—a link that should not

boil down to a link between heuristic thinking in general and system support. Thus, we expected to find a relationship between participants' explanatory preferences and their tendency to endorse the alien status disparities even when statistically adjusting for their preference for effortful thinking. The Inherence Heuristic Scale (Salomon & Cimpian, 2014) contains 15 statements designed to capture participants' reliance on heuristic, inherence-based explanations (e.g., "It seems natural to use red in a traffic light to mean 'stop'"). We included this scale to explore the relationship between participants' broader tendencies to explain inherently (as measured with this scale) and their explanatory preferences for the status-relevant stimuli in the present task. Four catch items, designed to elicit either strong disagreement (e.g., "It seems right to kill other people for fun") or strong agreement (e.g., "It seems ideal for hotel rooms to have bathrooms"), were included in the Inherence Heuristic Scale to identify participants who were not paying attention or who adopted a fixed response pattern (e.g., high agreement). Participants who provided unexpected answers (e.g., agreeing that it is right to kill people for fun) on two or more of these catch items were excluded from further analyses (as in Salomon & Cimpian, 2014). Item order was randomized for all
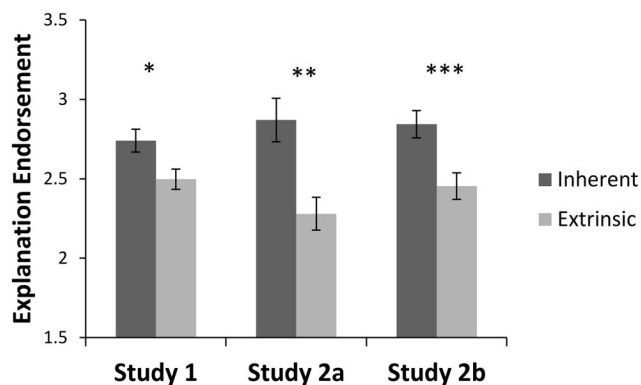

Figure 1. Adults' (Study 1) and 8-year-olds' (Studies 2a and 2b) endorsement of inherent and extrinsic explanations for social disparities (1 = *really not right* to 4 = *really right*). Error bars represent ±1 standard error. * $p < .05$. ** $p < .01$. *** $p < .001$.

Table 2
Mean Endorsement of Explanations and System-Supporting Beliefs in Studies 1 and 2

Participant	Inherent Explanation Endorsement	Extrinsic Explanation Endorsement	Disparity Fairness Rating	High-Status Group Preference
Adults (Study 1)	2.74 (.72)	2.50 (.64)	4.10 (1.56)	−.11 (1.70)
8-year-olds (Study 2a)	2.87 (.75)	2.28 (.57)	—	—
8-year-olds (Study 2b)	2.86 (.65)	2.43 (.65)	2.93 (.99)	−.26 (1.53)

Note. For adults (Study 1), disparity fairness and group liking were assessed using nine-point scales. For children (Study 2b), we used six-point scales. Inherent and extrinsic explanation endorsement was assessed using four-point scales for both adults and children. High-status group preference was calculated by subtracting low-status group liking from high-status group liking. Standard deviations are indicated in parentheses.

scales, as was the order of the scales themselves. Participants used nine-point scales to indicate their agreement with the scale items.

Pilot studies. Two separate samples of adults (both $Ns = 30$) were recruited from MTurk for the purpose of verifying that the stimulus explanations met several key criteria. The first pilot study was conducted to verify that the inherent explanations used in the main task were, in fact, more inherent than the extrinsic ones. Participants were first given information about the difference between inherent explanations (e.g., "An inherent explanation is one that explains something using intrinsic, internal, or person-specific reasons") and extrinsic explanations (e.g., "An extrinsic explanation is one that explains something using environmental, external, or historical reasons"). Then, participants were presented with the explanations from the main task and asked to rate them on a nine-point scale in terms of how inherence-based they were. As expected, participants rated our inherent explanations ($M = 7.47$) as significantly more inherent than our extrinsic explanations ($M = 2.76$), $t(29) = 9.76$, $p < .001$.

The second pilot study was conducted in order to rule out the possibility that differences in explanation ratings on the main task could simply be due to differences in the a priori, in-principle plausibility of the explanations. Although we predict that the inherent explanations will seem more plausible than the extrinsic ones when participants are trying to make sense of the specific sociopolitical disparities presented in the main task, this difference should not be due to mismatches in whether these explanations could, in the abstract, account for such disparities. For example, participants should agree that, in principle, historical events could adequately explain status disparities, even though such events might not ultimately be chosen as the actual explanations for

observed disparities (in the main task). We thus asked adults to rate the in-principle plausibility of each explanation (e.g., "Imagine that Group A have a lot more money than Group B. In principle, could the following fact adequately explain this difference? Group A are a lot smarter and are a lot better workers than Group B"). Responses were recorded on a four-point scale (1 = *definitely no* to 4 = *definitely yes*). Participants rated the inherent and extrinsic explanations as equivalent in their in-principle plausibility ($Ms = 3.1$ and 3.3, respectively), $t(28) = 1.09$, $p = .28$. These results suggest that any differences in ratings on the main task cannot be attributed to differences in the in-principle plausibility of the inherent and extrinsic explanations provided to participants.

Results and Discussion

To test Prediction 1 (that of a tendency to explain sociopolitical patterns in inherent terms), we compared participants' evaluations of the inherent and extrinsic explanations. As predicted, the inherent explanations ($M = 2.74$, $SD = .72$) were rated significantly higher than the extrinsic ones ($M = 2.50$, $SD = .64$), despite their equal in-principle plausibility, $t(100) = 2.52$, $p = .013$, $d = .35$ (see Figure 1 and Table 2).[3] These results suggest that people may indeed have a tendency to explain sociopolitical patterns (even ones in which they have no personal stake) in terms of inherent facts about the entities that make up these patterns.

To test Prediction 2 (that of a link between inherent explanations and support for the status quo), we examined whether participants' preference for inherent (vs. extrinsic) explanations of status disparities, calculated as a difference score, was related to their beliefs that such disparities were fair and defensible. Consistent with our argument, participants' preference for inherent explanations of novel sociopolitical patterns significantly predicted their tendency to uphold these patterns, $r(99) = .51$, $p < .001$ (see Figure 2). Moreover, this relationship remained significant even when statistically adjusting for participants' (potentially motivated) tendency to uphold the structure of their *own* society (assessed with the General System Justification Scale), $r(98) = .47$, $p < .001$ (see Table 3 for the full correlation matrix). This result provides further evidence that the process of explaining may be a source of system-legitimizing cognitions that is independent of the palliative motivation to support the status quo. Similarly, controlling for the habitual tendency to engage in effortful thinking (as measured with the Need for Cognition Scale) had no effect on the
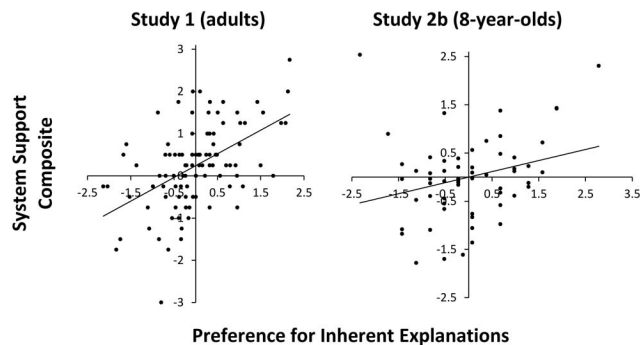

Study 1 (adults)   **Study 2b (8-year-olds)**

Figure 2. Participants' system support as a function of their preference for inherent explanations of social disparities in Studies 1 and 2b.

---

[3] For this and all future pairwise comparisons, we report Cohen's d as a measure of effect size.

Table 3
Correlations Between the Measures in Study 1

Measure	1	2	3	4	5
1. Preference for inherent explanations	—	.51**	.28**	.25*	−.11
2. System support composite		—	.30**	.34**	−.11
3. Inherence Heuristic Scale			—	.33**	−.35**
4. General System Justification Scale				—	−.04
5. Need for Cognition Scale					—

*$p < .05$. **$p < .01$.

relationship between participants' explanations and their support for the status quo, $r(98) = .51$, $p < .001$. Thus, this relationship is not simply parasitic on a relationship between general heuristic thinking and system support; rather, heuristic explanations are uniquely predictive of people's endorsement of the status quo. Notably, the hypothesized relationship also remained significant when adjusting for both control scales simultaneously, $r(97) = .46$, $p < .001$.

Finally, we examined whether participants' habitual tendency to rely on the inherence heuristic (assessed with the Inherence Heuristic Scale) may have enhanced their support for the disparities in Study 1 by increasing the likelihood that they explained these particular disparities in inherent terms. Indeed, a bootstrapped product-of-coefficients mediation analysis (10,000 replications) revealed a significant indirect path linking participants' scores on the Inherence Heuristic Scale with their support for the novel disparities via their explanations for these disparities (specifically, the extent to which they preferred inherent explanations) ($ab = .08$ [.02, .17]). This path remained significant even when adjusting for participants' views about the fairness of their own sociopolitical systems ($ab = .07$ [.02, .16]). Likewise, the indirect path remained significant when Need for Cognition was used as a control variable ($ab = .08$ [.02, .17]), and when both control variables were included simultaneously ($ab = .06$ [.003, .14]). These results bolster our claim of a link between the cognitive process of explanation and the tendency to support the status quo.

Studies 2a and 2b

The goal of Study 2 was to provide a stronger test of our proposal by investigating whether the hypothesized link between heuristic explanations and system support is present in childhood.

Method

Participants. Participants in Study 2a were thirty 7- and 8-year-old children ($M_{age} = 8.34$ years, $SD = 0.48$). Participants in Study 2b were sixty 7- and 8-year-old children ($M_{age} = 8.19$ years, $SD = 0.47$). Children this age have sufficient linguistic skill to meet the demands of our task, but their analogical reasoning abilities are still immature (e.g., Richland et al., 2006), making it unlikely that their judgments about alien systems would be based on a sophisticated relational mapping onto their own circumstances. Participants were recruited from a small city in the Midwestern United States and were tested either in a university lab ($n = 42$) or in a quiet room at their school ($n = 48$). Five additional children were tested but excluded from the final sample because they refused to complete the study.

Materials and procedure. Participants in Studies 2a and 2b received the same vignettes as in Study 1 and rated the same inherent and extrinsic explanations. Children's agreement with the explanations was measured with a visual four-point "thumbs down" versus "thumbs up" scale (1 = *really not right* to 4 = *really right*). The only difference between Studies 2a and 2b was that only the latter study measured children's support for the novel disparities. Specifically, a six-point scale was used in Study 2b to assess children's ideas about the fairness of each disparity (e.g., "Is it fair that the Blarks have a lot more money than the Orps?"; "Is it okay that the Blarks have a lot more money than the Orps?") and their liking of each group (e.g., "Do you like the Blarks [Orps]?"; $\alpha = .78$).

Results and Discussion

Study 2a tested only the first prediction of our account—that concerning the content of children's explanations. Like the adults in Study 1, children evaluated the inherent explanations for status disparities ($M = 2.87$, $SD = .75$) more positively than the extrinsic ones ($M = 2.28$, $SD = .57$), $t(29) = 2.92$, $p = .007$, $d = .89$ (see Figure 1 and Table 2). Thus, even children seem prone to view status differences as due to the inherent traits of the relevant groups, not as emerging from extrinsic circumstances or historical events.

In Study 2b, we replicated this advantage for inherent explanations ($M = 2.86$, $SD = .65$) over extrinsic explanations ($M = 2.43$, $SD = .65$), $t(59) = 4.05$, $p < .001$, $d = .66$ (see Figure 1) but also assessed children's attitudes regarding the status quo (see Table 2). The results revealed again that higher endorsement of inherent over extrinsic explanations predicted stronger system support, $r(58) = .27$, $p = .039$ (see Figure 2). For children as well, then, the process of explaining is linked with their attitudes toward sociopolitical patterns.

Studies 3a and 3b

In Study 3, we explored whether explanations for status disparities display an inherence skew even (1) in younger children (specifically, 4- and 5-year-olds) and (2) when children generate their own explanations as opposed to evaluating experimenter-provided ones. The younger the children, the less plausible it is to suppose that their reasoning would be influenced by anxieties stemming from an analogical projection of their own position in the societal hierarchy onto the alien status disparities. As a result, recruiting these younger participants afforded an even stronger test of our proposal. Eliciting children's spontaneous explanations served the same purpose: Because our claims concern the link between the explanations that people themselves generate and their subsequent endorsement of system-endorsing attitudes, it is important to show that the hypothesized bias toward inherence is found in participants' spontaneous production as well.

Method

Participants. Participants in Study 3a were twenty 4- and 5-year-old children ($M_{age} = 5.10$ years, $SD = 0.52$) and twenty 7- and 8-year-old children ($M_{age} = 8.05$ years, $SD = 0.40$). Participants in Study 3b were twenty 4- to 8-year-old children ($M_{age} = $

6.66 years, $SD = 1.34$). Participants were recruited from a small city in the Midwestern United States and were tested either in a university lab ($n = 24$) or in a quiet room at their school ($n = 36$). Three additional children were tested but excluded from the final sample because they refused to complete the study ($n = 2$) or failed to provide any explanations ($n = 1$).

Materials and procedure. Participants in Study 3a heard the same disparity vignettes as in Studies 1 and 2 but were prompted to provide their own explanations for the disparities (e.g., "Why do you think the Blarks have a lot more money than the Orps?"). The procedure in Study 3b was identical, except that children were told about two individuals (instead of groups) who lived on each planet (e.g., Blark and Orp).

Coding. Children's explanations were coded into three categories: inherent (e.g., "Because they work harder"), extrinsic (e.g., "Maybe the Blarks have a lot more places they can go and work, and the Orps don't have as many buildings to work at"), or nonsensical (e.g., "They get more"). To assess reliability, all explanations were coded independently by a second, hypothesis-blind researcher. The average agreement for the inherent and extrinsic explanations was 91.3% for Study 3a and 86.3% for Study 3b (κs = .81 and .72, respectively). Disagreements were resolved via discussion.

Results and Discussion

In Study 3a, we compared the proportions of the four novel disparities for which children generated inherent versus extrinsic explanations. Our main prediction was that inherent explanations would be more frequent than extrinsic explanations in both 5- and 8-year-olds' reasoning. To test this prediction, we entered each child's proportions of inherent and extrinsic explanations as a within-subject variable in a mixed-design analysis of variance (ANOVA) that also included children's age (5- vs. 8-year-olds) as a between-subjects factor. Consistent with our proposal, children in Study 3a generated significantly more inherent ($M = .53$, $SD = .27$) than extrinsic ($M = .31$, $SD = .27$) explanations for the novel status disparities, $F(1, 38) = 9.66$, $p = .004$, $\eta^2 = .20$ (see Table 4). This effect did not differ by age group, $F(1, 38) = .03$, $p = .864$. In fact, inherent explanations were more prevalent than extrinsic ones for both the 5-year-olds ($M_{inherent} = .45$, $SD_{inherent} = .28$ vs. $M_{extrinsic} = .24$, $SD_{extrinsic} = .25$; $t(19) = 2.17$, $p = .043$, $d = .79$) and the 8-year-olds ($M_{inherent} = .62$,

Table 4
Proportion of Explanations Generated in Study 3

Study and group	Inherent	Extrinsic	Nonsensical
Study 3a			
5-year-olds	.45 (.28)	.24 (.25)	.39 (.25)
8-year-olds	.62 (.24)	.38 (.29)	.11 (.15)
Study 3b			
4–8-year-olds	.54 (.28)	.49 (.27)	.06 (.18)

Note. The values in this table represent the proportion of trials on which an explanation was coded as being inherent, extrinsic, or nonsensical. Because explanation codes were assigned independently (i.e., an explanation could be coded as containing both inherent and extrinsic components), the proportions do not necessarily add up to 1. Standard deviations are indicated in parentheses.
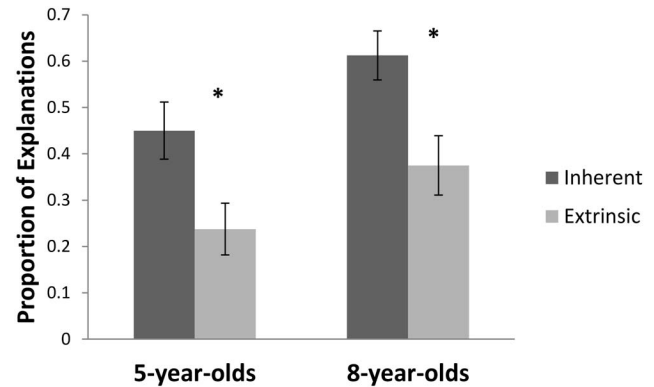

Figure 3. The proportion of trials on which children generated inherent and extrinsic explanations of social disparities in Study 3a. (Both bars are lower for the 5-year-olds than for the 8-year-olds because the younger children generated more nonsensical explanations.) Error bars represent ±1 standard error. * $p < .05$.

$SD_{inherent} = .24$ vs. $M_{extrinsic} = .38$, $SD_{extrinsic} = .29$; $t(19) = 2.23$, $p = .038$, $d = .90$; see Figure 3).

Study 3b was conducted to ensure that the inherence bias in Study 3a was a genuine reflection of how children typically make sense of large-scale sociopolitical patterns, and not the result of any surface features of the stimuli or shallow affective associations with high versus low status. In this study, we asked children to explain status disparities between particular individuals (e.g., "Blark has a lot more money than Orp").

On the basis of prior theorizing about the operation of the inherence heuristic (Cimpian & Salomon, 2014a, 2014b), we predicted that these items would not elicit as strong an inherence bias as the disparities between groups did (Study 3a), largely because extrinsic information (e.g., past events, external circumstances) is more readily accessible when reasoning about specific individuals than about broad patterns—and thus more easily incorporated into quick heuristic explanations (e.g., Cimpian & Markman, 2009, 2011; Hussak & Cimpian, 2014). This is a fairly counterintuitive prediction: Probability-wise, it is actually more likely that a specific individual would possess a certain inherent trait (e.g., intelligence) than that an entire group would. And yet, extrinsic information (about context, history, etc.) is more likely to be cognitively represented, and is thus more accessible to heuristic processes, at the level of individuals than at the level of groups. For example, it is easier to think about what a particular girl did yesterday, about where she comes from, and so on, than it is to think about what girls in general did yesterday, about where girls in general come from, and so on (Cimpian & Markman, 2011). As a result, extrinsic information may be called to mind more readily when reasoning heuristically about individuals (vs. groups), leading to a reduction in the magnitude of the typical inherence bias.[4] Although inherent information may still be accessible and thus

---

[4] It is important to keep in mind that this reduction is relative to the case when people are explaining broad patterns. In an absolute sense, inherent facts may be overly accessible (and therefore likely to bias explanatory intuitions) even when considering specific events (Cimpian & Salomon 2014a, 2014b; see also, e.g., Gilbert et al., 1988).

prevalent in children's explanations even in these cases, we predicted that the boost in accessibility afforded to extrinsic information by the individual-specific format of the vignettes would result in a more even split between inherent and extrinsic explanations.

As predicted, children's spontaneous explanations in Study 3b no longer appealed to inherent ($M = .54$, $SD = .28$) more than extrinsic ($M = .49$, $SD = .27$) factors, $t(19) = .55$, $p = .59$, $d = .18$ (see Table 4). The fact that children tailored their explanations to the nature of the observations to be explained (status disparities between groups vs. individuals) in precisely the way predicted by the inherence heuristic account suggests that our experimental paradigm successfully taps into the cognitive processes by which children make sense of the world. Together, Studies 3a and 3b reinforce our claims of an inherence bias in people's explanations for sociopolitical patterns, a bias that is present even in preschool children.

Study 4

In Study 4, we tested our claim of a causal link between explanations and system support (Prediction 3). Would manipulating how children explain sociopolitical patterns also affect their tendency to uphold these patterns? More precisely, would providing children with inherent explanations for a certain status disparity lead them see it as more legitimate and fair than if the same disparity had been explained in extrinsic terms?

Method

Participants. Participants were twenty 4- and 5-year-old children ($M_{age} = 5.29$ years, $SD = .50$) and twenty 7- and 8-year-old children ($M_{age} = 8.27$ years, $SD = .44$). Participants were recruited from a small city in the Midwestern United States and were tested either in a university lab ($n = 16$) or in a quiet room at their school ($n = 24$). Ten additional children were tested but excluded from the final sample because they refused to complete the task ($n = 6$) or answered two or more manipulation check questions incorrectly ($n = 4$; see the following section).

Materials and procedure. We introduced participants to the status disparities used in Studies 1 through 3a. For two of the
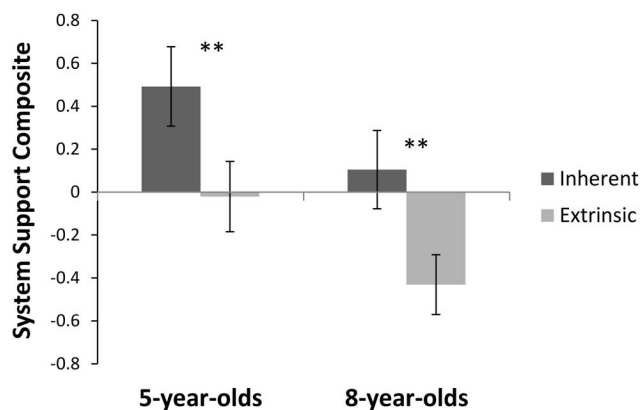

Figure 4. Five- and 8-year-olds' system support following inherent and extrinsic explanations in Study 4. Error bars represent ±1 standard error. ** $p < .01$.

disparities, children were provided with an inherent explanation (e.g., the Blarks "are smarter and better workers"); for the other two disparities, children heard an extrinsic explanation (e.g., the Blarks "live in a town with better jobs and a lot more banks"; see Table 1 and the online supplemental materials). Each disparity received an inherent explanation for half of the participants and an extrinsic explanation for the other half. After children heard each explanation, they were asked to repeat it to the experimenter as a comprehension check. If children were unable to repeat the explanation (either fully or partially), the experimenter reread it and asked again. If children could not repeat the explanation after three attempts, the experimenter moved on to the next trial.

After passing the comprehension check, children were asked how much they liked each group, whether they thought the disparity between them was fair (six-point scales), and whether they thought the high-status group deserved their advantage (*yes/no*). Responses to these questions about status quo endorsement were combined into a standardized composite score ($\alpha = .72$). Question order was counterbalanced.

As a manipulation check, at the end of each trial we asked children to recall the explanation provided on that trial. The

Table 5

Mean Endorsement of System-Supporting Beliefs Following Inherent and Extrinsic Explanations in Study 4

Explanation and group	Disparity fairness ("Is it fair . . .?")	Disparity fairness ("Is it ok . . .?")	High-status group deservingness	High-status group preference	System support composite
Inherent					
5-year-olds	3.52 (1.88)	4.25 (1.77)	.73 (.41)	.83 (2.82)	.49 (.83)
8-year-olds	2.85 (1.72)	3.33 (1.69)	.56 (.41)	.43 (2.08)	.10 (.81)
Extrinsic					
5-year-olds	2.23 (1.48)	2.75 (1.76)	.53 (.47)	.93 (2.07)	−.02 (.73)
8-year-olds	2.33 (1.23)	2.98 (1.45)	.35 (.37)	−1.28 (1.67)	−.43 (.62)

Note. Disparity fairness ratings were assessed using a six-point scale. High-status group deservingness was assessed with a dichotomous *yes/no* question. High-status group preference was calculated as the difference score between liking for the high- and the low-status groups (each assessed using a six-point scale). The system support composite was calculated by (1) standardizing the relevant measures (e.g., participants' average rating of the fairness of the disparities) and then (2) averaging each participant's standardized scores across these measures. Standard deviations are indicated in parentheses.

experimenter provided no feedback at this point and simply proceeded with the study. However, any trials for which children failed to answer this question correctly were excluded from the analyses (6.9% of all trials).

Pilot study. We assessed whether the inherent and extrinsic explanations were equivalent in their in-principle plausibility, using the same method as in Study 1. Adults ($N = 30$) were recruited from MTurk and were asked to rate the explanations in terms of their in-principle plausibility on a four-point scale. The inherent and extrinsic explanations were equivalent on this dimension (Ms = 3.0 and 3.2, respectively), $t(28) = .53$, $p = .60$.

Results and Discussion

In this study, we compared children's support for disparities that had been explained in terms of inherent versus extrinsic factors. We averaged children's support for the two disparities explained inherently and, separately, for the two disparities explained extrinsically and then entered these two averages as a within-subject factor (inherent vs. extrinsic) in a mixed-design ANOVA, along with children's age (5- vs. 8-year-olds; between subjects).

As predicted, exposure to inherent (vs. extrinsic) explanations for status disparities resulted in greater support for these disparities, $M_{inherent} = .30$, $SD_{inherent} = 1.18$ versus $M_{extrinsic} = -.23$, $SD_{extrinsic} = 1.05$, $F(1, 38) = 22.62$, $p < .001$, $\eta^2 = .37$ (see Table 5). This difference did not vary by age, $F(1, 38) = .01$, $p = .91$: Both the 5-year-olds ($M_{inherent} = .49$, $SD_{inherent} = .83$ vs. $M_{extrinsic} = -.02$, $SD_{extrinsic} = .73$) and the 8-year-olds ($M_{inherent} = .10$, $SD_{inherent} = .81$ vs. $M_{extrinsic} = -.43$, $SD_{extrinsic} = .62$) were significantly more likely to endorse status disparities for which they heard inherent explanations: $t(19) = 3.15$, $p = .005$, $d = .65$, for the 5-year-olds, and $t(19) = 3.60$, $p = .002$, $d = .73$, for the 8-year-olds (see Figure 4).

It is interesting to note that the 5-year-olds were somewhat more likely than the 8-year-olds to endorse system-supporting attitudes overall ($M_{fives} = .24$, $SD_{fives} = .69$ vs. $M_{eights} = .16$, $SD_{eights} = .64$), $F(1, 38) = 3.56$, $p = .067$, $\eta^2 = .09$. This developmental trend is compatible with our account, insofar as the inherence heuristic—and heuristic reasoning in general—has a more pervasive influence earlier in development (Cimpian & Salomon, 2014b; Cimpian & Steinberg, 2014). This claim should be interpreted with caution, however, because in Study 3a the younger children did not generate more inherent explanations for status disparities than the older children.

These results suggest that, even for young children, understanding a sociopolitical pattern as being the result of some feature of the groups that comprise it leads to greater endorsement of this pattern relative to understanding it as the product of extrinsic forces. Together with the evidence that inherent explanations are common in people's understanding of macrosocietal features (Studies 1 through 3), these findings support the claim that explanation-generating processes provide an independent path for the development of attitudes that uphold the status quo.

General Discussion

Political thought is characterized by a prevailing tendency to view the status quo as fair and natural. The present work suggests that this tendency emerges in part as a byproduct of the cognitive processes through which people explain the world (Cimpian, 2015; Cimpian & Salomon, 2014a, 2014b; see also Eidelman & Crandall, 2014). These processes lead people to overuse easily accessible inherent facts in their explanations for a wide range of observations, from broad natural phenomena to specific human behaviors. When such inherence-biased explanations are generated to make sense of existing sociopolitical arrangements, they portray these arrangements as fair, natural, and legitimate. This proposal received consistent support across four studies. First, we found a marked tendency to explain large-scale social disparities in inherent terms (Studies 1, 2, and 3a). Second, this tendency was predictive of participants' support for the status quo (Studies 1 and 2b). Third, manipulating this explanatory skew toward inherence led to subsequent changes in the extent to which people endorsed the status quo (Study 4). In sum, our findings provide strong evidence that the cognitive processes underlying explanation are an independent, and potentially prolific, source of support for the status quo. To clarify, however, we view this perspective as complementing, not competing with, those proposing that system-legitimizing cognitions arise because they serve the palliative function of reducing anxiety and uncertainty about one's station in life. In all likelihood, there are multiple ways to arrive at judgments that defend the status quo. Some of these may be primarily driven by motives, whereas others may be driven more strongly by information-processing factors.

The claim of a primarily cognitive source for the judgments documented in our studies is licensed by the fact that we designed these studies so as to reduce the influence of palliative motives. First, we asked participants about unfamiliar disparities on alien planets—stimuli that lower participants' personal involvement and the possibility of self-relevant negative emotions. Under these circumstances, it seems less likely that participants would derive a palliative benefit from defending the status quo. Second, we recruited young children. Children are a useful test case because, relative to adults, they should have more difficulties analogically projecting whatever understanding they have of their own societal position onto a world that is superficially different. As a result, self-relevant negative emotions should be even less influential in their judgments. However, we cannot claim to have completely eliminated the possibility of such projections, or of motivated influences more generally.

In addition to documenting a cognitive foundation for status-quo support, the present research sought an adequately general and parsimonious way to characterize this foundation. In the end, we adopted the inherence heuristic account as a theoretical framework. What is the value of doing so? Could these studies have been motivated and interpreted just as well from the perspective of the alternative cognitive accounts summarized in the introduction? The inherence heuristic approach is in fact better able to account for the present findings than either essentialism or the correspondence bias. Consider, first, that the individuals representing the unfamiliar groups in our stimuli were matched for race, gender, and body type, differing mainly in clothing. Novel groups marked by such superficial features are not spontaneously essentialized by children (Rhodes et al., 2012); thus, essentialism per se cannot explain why children made so many inherent attributions for the differential status of these groups. Second, participants' status-supporting judgments in Study 1 were uniquely predicted by a scale measuring individual differences in reliance on the inherence

heuristic. Given the discriminant validity of this scale with multiple measures of essentialism (Salomon & Cimpian, 2014), the predictive relationships between inherent explanations and system support cannot be accounted for by essentialism per se. Third, the fact that the bias toward internal explanations was lower when children explained status disparities between individuals than when they explained disparities between groups (Studies 3a and 3b) is not predicted, and cannot be easily accommodated, by either essentialism or the correspondence bias. In contrast, such a difference was explicitly discussed and predicted in prior theorizing about the inherence heuristic (Cimpian & Salomon, 2014a, 2014b). Finally, it is unclear how the developmental trend whereby older children were less likely to endorse the status quo than younger ones (Study 4) can be accommodated by work on essentialism, where the trend is usually toward stronger, more coherent essentialist beliefs with age (e.g., Gelman, Heyman, & Legare, 2007; but see Rhodes & Gelman, 2009). In contrast, it is well documented that heuristic reasoning of the sort that underlies the inherence heuristic decreases with age (e.g., Cimpian & Steinberg, 2014; Toplak, West, & Stanovich, 2014). In sum, the advantages of adopting the inherence heuristic as a mechanistic framework extend beyond the theoretical argument laid out in the introduction: Without this framework, it becomes unclear how to interpret many important aspects of the present results.

Looking toward the future, it would be worthwhile to examine whether, and how, the cognitive mechanism proposed here might interact with various motivated processes to bring about system-supporting attitudes. Although we took care to lower palliative motives in our tasks, such motives may influence individuals' (especially adults') heuristic explanations outside the lab. According to the inherence heuristic account, affective or motivational factors may, at times, modulate the operation of the heuristic processes identified here (Cimpian & Salomon, 2014a, 2014b). For example, any anxiety or discomfort that is evoked by one's societal rank could erode the amount of cognitive resources (such as working memory) available to the reasoner (e.g., Schmader, Johns, & Forbes, 2008). Lower cognitive resources would in turn translate into looser supervision of heuristic processes by analytic, working memory-dependent processes (e.g., Epley & Gilovich, 2006). In the case of the inherence heuristic, this could result in a stronger inherence bias in the explanations people adopt for observed sociopolitical patterns, and thus stronger intuitions about the legitimacy of the status quo. In this manner, palliative motivations and heuristic processes could in fact interact to promote status quo endorsement. Future research along these lines would provide further insight into the complex mechanisms underlying system-justifying beliefs.

It is also important to investigate the contextual influences that are likely to moderate the relationship between the inherence heuristic and status-quo-defending beliefs. Because the content of the explanations generated by the inherence heuristic varies systematically according to information that is easily accessible in memory, any context that promotes effortless retrieval of extrinsic (historical, situational, etc.) facts might correspondingly lower the inherence skew in heuristic explanations and, as a result, the extent to which they legitimize existing societal arrangements. For example, if cultures vary in the extent to which they highlight extrinsic influences (e.g., Choi et al., 1999; Morris & Peng, 1994), spontaneous explanations for observed sociopolitical patterns may

likewise vary in the support they provide for the status quo. One's social class may also influence the content of the information available in memory for the purpose of generating explanations. For instance, individuals from low socioeconomic status backgrounds might be more likely to have access to information about contextual barriers to success (e.g., education, family history), which might in turn reduce the extent to which they explain status disparities by appealing to system-legitimizing inherent traits (e.g., Kluegel & Smith, 1986; Kraus, Piff, & Keltner, 2009). As suggested by these examples, future investigations of the relationship between the inherence heuristic and system-supporting beliefs would benefit from attending to the influence of context on people's spontaneous explanations for their social world.

Although the tendency to uphold the status quo may provide relief from tension and uncertainty, it also reinforces harmful stereotypes of the disadvantaged; it reproduces long-standing inequalities; and it propagates the belief that unfair policies and practices are just. It is worrying to think that this tendency is present even in 4-year-old children (as our own data suggest). By revealing how an early emerging heuristic shortcut contributes to this tendency, the present research also suggests how one could instill a more balanced, open-minded stance toward the sociopolitical status quo. The heuristic tendencies of the human mind do not impose a hard limit on its output: Facile intuitions (which usually disguise themselves as common sense) can indeed be revised, and prior research has identified many metacognitive strategies whose adoption promotes analytic, rational thought (e.g., Baron, 1994; Stanovich, 2009). By learning to scrutinize one's heuristic intuitions, one gains the ability to recognize potential shortcomings in the structure of society and thus to avoid the pitfalls of an unquestioning endorsement of the status quo.

References

Altemeyer, B. (1998). The "other" authoritarian. *Advances in Experimental Social Psychology, 30,* 47–92. http://dx.doi.org/10.1016/S0065-2601(08)60382-2

Baron, J. (1994). *Thinking and deciding* (2nd ed.). New York, NY: Cambridge University Press.

Barr, R. A., & Caplan, L. J. (1987). Category representations and their implications for category structure. *Memory & Cognition, 15,* 397–418. http://dx.doi.org/10.3758/BF03197730

Brandt, M. J. (2013). Do the disadvantaged legitimize the social system? A large-scale test of the status-legitimacy hypothesis. *Journal of Personality and Social Psychology, 104,* 765–785. http://dx.doi.org/10.1037/a0031751

Brescoll, V. L., Uhlmann, E. L., & Newman, G. E. (2013). The effects of system-justifying motives on endorsement of essentialist explanations for gender differences. *Journal of Personality and Social Psychology, 105,* 891–908. http://dx.doi.org/10.1037/a0034701

Cacioppo, J. T., Petty, R. E., & Kao, C. F. (1984). The efficient assessment of need for cognition. *Journal of Personality Assessment, 48,* 306–307. http://dx.doi.org/10.1207/s15327752jpa4803_13

Choe, S. (2015, January 18). Prominent North Korean defector recants parts of his story of captivity. *The New York Times.* Retrieved from http://nyti.ms/15o94pa

Choi, I., Nisbett, R. E., & Norenzayan, A. (1999). Causal attribution across cultures: Variation and universality. *Psychological Bulletin, 125,* 47–63. http://dx.doi.org/10.1037/0033-2909.125.1.47

Cichocka, A., & Jost, J. T. (2014). Stripped of illusions? Exploring system justification processes in capitalist and post-Communist societies. *Inter-*

national Journal of Psychology, 49, 6–29. http://dx.doi.org/10.1002/ijop
.12011

Cimpian, A. (2015). The inherence heuristic: Generating everyday explanations. In R. Scott & S. Kosslyn (Eds.), *Emerging trends in the social and behavioral sciences* (pp. 1–15). Hoboken, NJ: Wiley and Sons. http://dx.doi.org/10.1002/9781118900772.etrds0341

Cimpian, A., & Markman, E. M. (2009). Information learned from generic language becomes central to children's biological concepts: Evidence from their open-ended explanations. *Cognition, 113,* 14–25. http://dx .doi.org/10.1016/j.cognition.2009.07.004

Cimpian, A., & Markman, E. M. (2011). The generic/nongeneric distinction influences how children interpret new information about social others. *Child Development, 82,* 471–492. http://dx.doi.org/10.1111/j .1467-8624.2010.01525.x

Cimpian, A., & Salomon, E. (2014a). Author's reply: Refining and expanding the proposal of an inherence heuristic in human understanding. *Behavioral and Brain Sciences, 37,* 506–527. http://dx.doi.org/10.1017/ S0140525X14000028

Cimpian, A., & Salomon, E. (2014b). The inherence heuristic: An intuitive means of making sense of the world, and a potential precursor to psychological essentialism. *Behavioral and Brain Sciences, 37,* 461–480. http://dx.doi.org/10.1017/S0140525X13002197

Cimpian, A., & Steinberg, O. D. (2014). The inherence heuristic across development: Systematic differences between children's and adults' explanations for everyday facts. *Cognitive Psychology, 75,* 130–154. http://dx.doi.org/10.1016/j.cogpsych.2014.09.001

Cooper, A. (2012, December 2). *Three generations of punishment. 60 Minutes.* New York, NY: CBS Broadcasting.

Dalbert, C. (2001). *The justice motive as a personal resource: Dealing with challenges and critical life events.* New York, NY: Kluwer Academic/ Plenum Press Publishers. http://dx.doi.org/10.1007/978-1-4757-3383-9

Dalbert, C., & Yamauchi, L. A. (1994). Belief in a just world and attitudes toward immigrants and foreign workers: A cultural comparison between Hawaii and Germany. *Journal of Applied Social Psychology, 24,* 1612–1626. http://dx.doi.org/10.1111/j.1559-1816.1994.tb01565.x

Dar-Nimrod, I., & Heine, S. J. (2011). Genetic essentialism: On the deceptive determinism of DNA. *Psychological Bulletin, 137,* 800–818. http://dx.doi.org/10.1037/a0021860

Diamond, J. (1998). *Guns, germs, and steel: The fates of human societies.* New York, NY: Norton & Co.

Eidelman, S., & Crandall, C. S. (2014). The intuitive traditionalist: How biases for existence and longevity promote the status quo. *Advances in Experimental Social Psychology, 50,* 53–104. http://dx.doi.org/10.1016/ B978-0-12-800284-1.00002-3

Eidelman, S., Crandall, C. S., & Pattershall, J. (2009). The existence bias. *Journal of Personality and Social Psychology, 97,* 765–775. http://dx .doi.org/10.1037/a0017058

Eidelman, S., Pattershall, J., & Crandall, C. S. (2010). Longer is better. *Journal of Experimental Social Psychology, 46,* 993–998. http://dx.doi .org/10.1016/j.jesp.2010.07.008

Epley, N., & Gilovich, T. (2006). The anchoring-and-adjustment heuristic: Why the adjustments are insufficient. *Psychological Science, 17,* 311–318. http://dx.doi.org/10.1111/j.1467-9280.2006.01704.x

Evans, J. St. B. T. (2006). The heuristic-analytic theory of reasoning: Extension and evaluation. *Psychonomic Bulletin & Review, 13,* 378–395. http://dx.doi.org/10.3758/BF03193858

Evans, J. St. B. T. (2008). Dual-processing accounts of reasoning, judgment, and social cognition. *Annual Review of Psychology, 59,* 255–278. http://dx.doi.org/10.1146/annurev.psych.59.103006.093629

Foucault, M. (1978). *The history of sexuality: An introduction.* New York, NY: Random House.

Gawronski, B. (2004). Theory-based bias correction in dispositional inference: The fundamental attribution error is dead, long live the correspon-

dence bias. *European Review of Social Psychology, 15,* 183–217. http:// dx.doi.org/10.1080/10463280440000026

Gelman, S. A. (2003). *The essential child: Origins of essentialism in everyday thought.* New York, NY: Oxford University Press. http://dx .doi.org/10.1093/acprof:oso/9780195154061.001.0001

Gelman, S. A. (2004). Psychological essentialism in children. *Trends in Cognitive Sciences, 8,* 404–409. http://dx.doi.org/10.1016/j.tics.2004.07 .001

Gelman, S. A., Heyman, G. D., & Legare, C. H. (2007). Developmental changes in the coherence of essentialist beliefs about psychological characteristics. *Child Development, 78,* 757–774. http://dx.doi.org/10 .1111/j.1467-8624.2007.01031.x

Gentner, D., & Rattermann, M. (1991). Language and the career of similarity. In *Perspectives on language and thought: Interrelations in development* (pp. 225–277). New York, NY: Cambridge University Press. http://dx.doi.org/10.1017/CBO9780511983689.008

Gilbert, D. T., & Malone, P. S. (1995). The correspondence bias. *Psychological Bulletin, 117,* 21–38. http://dx.doi.org/10.1037/0033-2909.117 .1.21

Gilbert, D. T., Pelham, B. W., & Krull, D. S. (1988). On cognitive busyness: When person perceivers meet persons perceived. *Journal of Personality and Social Psychology, 54,* 733–740. http://dx.doi.org/10 .1037/0022-3514.54.5.733

Hafer, C. L., & Bègue, L. (2005). Experimental research on just-world theory: Problems, developments, and future challenges. *Psychological Bulletin, 131,* 128–167.

Hamilton, D. L., & Sherman, S. J. (1996). Perceiving persons and groups. *Psychological Review, 103,* 336–355. http://dx.doi.org/10.1037/0033-295X.103.2.336

Haslam, N., Rothschild, L., & Ernst, D. (2000). Essentialist beliefs about social categories. *The British Journal of Social Psychology, 39* (Pt. 1), 113–127. http://dx.doi.org/10.1348/014466600164363

Haslam, N., Rothschild, L., & Ernst, D. (2002). Are essentialist beliefs associated with prejudice? *The British Journal of Social Psychology, 41* (Pt. 1), 87–100. http://dx.doi.org/10.1348/014466602165072

Higgins, E. T. (1996). Knowledge activation: Accessibility, applicability, and salience. In E. Higgins & A. Kruglanski (Eds.), *Social Psychology: Handbook of Basic Principles* (pp. 133–168). New York, NY: Guilford Press.

Hirschfeld, L. A. (1995). Do children have a theory of race? *Cognition, 54,* 209–252. http://dx.doi.org/10.1016/0010-0277(95)91425-R

Hussak, L. J., & Cimpian, A. (2014, November). *Facts about inherent features are highly accessible in memory: Evidence for an inherence heuristic in explanation.* Poster presented at the Annual Meeting of the Psychonomic Society, Long Beach, CA.

Jones, E. E. (1979). The rocky road from acts to dispositions. *American Psychologist, 34,* 107–117. http://dx.doi.org/10.1037/0003-066X.34.2 .107

Jost, J. T., & Banaji, M. R. (1994). The role of stereotyping in system-justification and the production of false consciousness. *The British Journal of Social Psychology, 33,* 1–28. http://dx.doi.org/10.1111/j .2044-8309.1994.tb01008.x

Jost, J. T., Banaji, M. R., & Nosek, B. A. (2004). A decade of system justification theory: Accumulated evidence of conscious and unconscious bolstering of the status quo. *Political Psychology, 25,* 881–919. http://dx.doi.org/10.1111/j.1467-9221.2004.00402.x

Jost, J. T., & Hunyady, O. (2002). The psychology of system justification and the palliative function of ideology. *European Review of Social Psychology, 13,* 111–153. http://dx.doi.org/10.1080/ 10463280240000046

Jost, J. T., & Hunyady, O. (2005). Antecedents and consequences of system-justifying ideologies. *Current Directions in Psychological Science, 14,* 260–265. http://dx.doi.org/10.1111/j.0963-7214.2005.00377.x

Jost, J. T., Kivetz, Y., Rubini, M., Guermandi, G., & Mosso, C. (2005). System-justifying functions of complementary regional and ethnic stereotypes: Cross-national evidence. *Social Justice Research, 18,* 305–333. http://dx.doi.org/10.1007/s11211-005-6827-z

Jost, J. T., Kruglanski, A. W., & Simon, L. (1999). Effects of epistemic motivation on conservatism, intolerance and other system-justifying attitudes. In L. Thompson, J. Levine, & D. Messick (Eds.), *Shared cognition in organizations: The management of knowledge* (pp. 91–116). Mahwah, NJ: Lawrence Erlbaum.

Jost, J. T., Pelham, B. W., Sheldon, O., & Sullivan, B. N. (2003). Social inequality and the reduction of ideological dissonance on behalf of the system: Evidence of enhanced system justification among the disadvantaged. *European Journal of Social Psychology, 33,* 13–36. http://dx.doi.org/10.1002/ejsp.127

Kahneman, D. (2011). *Thinking, fast and slow.* New York, NY: Farrar, Straus & Giroux.

Kashima, Y., Kashima, E., Chiu, C., Farsides, T., Gelfand, M., Hong, Y., . . . Yzerbyt, V. Y. (2005). Culture, essentialism, and agency: Are individuals universally believed to be more real entities than groups? *European Journal of Social Psychology, 35,* 147–169.

Kay, A. C., Gaucher, D., Peach, J. M., Laurin, K., Friesen, J., Zanna, M. P., & Spencer, S. J. (2009). Inequality, discrimination, and the power of the status quo: Direct evidence for a motivation to see the way things are as the way they should be. *Journal of Personality and Social Psychology, 97,* 421–434. http://dx.doi.org/10.1037/a0015997

Kay, A. C., & Jost, J. T. (2003). Complementary justice: Effects of "poor but happy" and "poor but honest" stereotype exemplars on system justification and implicit activation of the justice motive. *Journal of Personality and Social Psychology, 85,* 823–837. http://dx.doi.org/10.1037/0022-3514.85.5.823

Keller, J. (2005). In genes we trust: The biological component of psychological essentialism and its relationship to mechanisms of motivated social cognition. *Journal of Personality and Social Psychology, 88,* 686–702. http://dx.doi.org/10.1037/0022-3514.88.4.686

Kluegel, J. R., & Smith, E. R. (1986). *Beliefs about inequality: Americans' views of what is and what ought to be.* Hawthorne, NY: Aldine De Gruyter.

Kraus, M. W., & Keltner, D. (2013). Social class rank, essentialism, and punitive judgment. *Journal of Personality and Social Psychology, 105,* 247–261. http://dx.doi.org/10.1037/a0032895

Kraus, M. W., Piff, P. K., & Keltner, D. (2009). Social class, sense of control, and social explanation. *Journal of Personality and Social Psychology, 97,* 992–1004. http://dx.doi.org/10.1037/a0016357

Lerner, M. (1980). *The belief in a just world: A fundamental delusion.* New York: Springer. http://dx.doi.org/10.1007/978-1-4899-0448-5

Lerner, M. J., & Simmons, C. H. (1966). Observer's reaction to the "innocent victim": Compassion or rejection? *Journal of Personality and Social Psychology, 4,* 203–210. http://dx.doi.org/10.1037/h0023562

LeVine, R., & Campbell, D. (1972). *Ethnocentrism: Theories of conflict, ethnic attitudes, and group behavior.* New York, NY: Wiley.

Lewis, D. (1983). Extrinsic properties. *Philosophical Studies, 44,* 197–200. http://dx.doi.org/10.1007/BF00354100

Lickel, B., Hamilton, D. L., Wieczorkowska, G., Lewis, A., Sherman, S. J., & Uhles, A. N. (2000). Varieties of groups and the perception of group entitativity. *Journal of Personality and Social Psychology, 78,* 223–246. http://dx.doi.org/10.1037/0022-3514.78.2.223

Liviatan, I., & Jost, J. T. (2011). Special issue: System justification theory: Motivated social cognition in the service of the status quo. *Social Cognition, 29,* 231–237. http://dx.doi.org/10.1521/soco.2011.29.3.231

McConnell, A. R., Sherman, S. J., & Hamilton, D. L. (1997). Target entitativity: Implications for information processing about individual and group targets. *Journal of Personality and Social Psychology, 72,* 750–762. http://dx.doi.org/10.1037/0022-3514.72.4.750

McRae, K., Cree, G. S., Seidenberg, M. S., & McNorgan, C. (2005). Semantic feature production norms for a large set of living and nonliving things. *Behavior Research Methods, Instruments, & Computers, 37,* 547–559. http://dx.doi.org/10.3758/BF03192726

Medin, D., & Ortony, A. (1989). Psychological essentialism. In S. Vosniadou & A. Ortony (Eds.), *Similarity and analogical reasoning* (pp. 179–195). New York, NY: Cambridge University Press. http://dx.doi.org/10.1017/CBO9780511529863.009

Miller, D. T., & Ross, M. (1975). Self-serving biases in the attribution of causality: Fact or fiction? *Psychological Bulletin, 82,* 213–225. http://dx.doi.org/10.1037/h0076486

Morris, M. W., & Peng, K. (1994). Culture and cause: American and Chinese attributions for social and physical events. *Journal of Personality and Social Psychology, 67,* 949–971. http://dx.doi.org/10.1037/0022-3514.67.6.949

Morton, T. A., Postmes, T., Haslam, S. A., & Hornsey, M. J. (2009). Theorizing gender in the face of social change: Is there anything essential about essentialism? *Journal of Personality and Social Psychology, 96,* 653–664. http://dx.doi.org/10.1037/a0012966

Newheiser, A. K., Dunham, Y., Merrill, A., Hoosain, L., & Olson, K. R. (2014). Preference for high status predicts implicit outgroup bias among children from low-status groups. *Developmental Psychology, 50,* 1081–1090. http://dx.doi.org/10.1037/a0035054

Nier, J. A., Bajaj, P., McLean, M. C., & Schwartz, E. (2013). Group status, perceptions of agency, and the correspondence bias: Attributional processes in the formation of stereotypes about high and low status groups. *Group Processes & Intergroup Relations, 16,* 476–487. http://dx.doi.org/10.1177/1368430212454925

Nosek, B. A., Smyth, F. L., Hansen, J. J., Devos, T., Lindner, N. M., Ranganath, K. A., . . . Banaji, M. R. (2007). Pervasiveness and correlates of implicit attitudes and stereotypes. *European Review of Social Psychology, 18,* 36–88. http://dx.doi.org/10.1080/10463280701489053

Olson, K. R., Dweck, C. S., Spelke, E. S., & Banaji, M. R. (2011). Children's responses to group-based inequalities: Perpetuation and rectification. *Social Cognition, 29,* 270–287. http://dx.doi.org/10.1521/soco.2011.29.3.270

Prasada, S., & Dillingham, E. M. (2006). Principled and statistical connections in common sense conception. *Cognition, 99,* 73–112. http://dx.doi.org/10.1016/j.cognition.2005.01.003

Prasada, S., & Dillingham, E. M. (2009). Representation of principled connections: A window onto the formal aspect of common sense conception. *Cognitive Science, 33,* 401–448. http://dx.doi.org/10.1111/j.1551-6709.2009.01018.x

Rhodes, M., & Gelman, S. A. (2009). A developmental examination of the conceptual structure of animal, artifact, and human social categories across two cultural contexts. *Cognitive Psychology, 59,* 244–274. http://dx.doi.org/10.1016/j.cogpsych.2009.05.001

Rhodes, M., Leslie, S. J., & Tworek, C. M. (2012). Cultural transmission of social essentialism. *Proceedings of the National Academy of Sciences, USA of the United States of America, 109,* 13526–13531. http://dx.doi.org/10.1073/pnas.1208951109

Richland, L. E., Morrison, R. G., & Holyoak, K. J. (2006). Children's development of analogical reasoning: Insights from scene analogy problems. *Journal of Experimental Child Psychology, 94,* 249–273. http://dx.doi.org/10.1016/j.jecp.2006.02.002

Roets, A., & Van Hiel, A. (2011). The role of need for closure in essentialist entitativity beliefs and prejudice: An epistemic needs approach to racial categorization. *The British Journal of Social Psychology, 50* (Pt. 1), 52–73. http://dx.doi.org/10.1348/014466610X491567

Ross, L. D. (1977). The intuitive psychologist and his shortcomings: Distortions in the attribution process. *Advances in Experimental Social Psychology, 10,* 173–220. http://dx.doi.org/10.1016/S0065-2601(08)60357-3

Ross, L. D., Amabile, T. M., & Steinmetz, J. L. (1977). Social roles, social control, and biases in social-perception processes. *Journal of Personality and Social Psychology, 35,* 485–494. http://dx.doi.org/10.1037/0022-3514.35.7.485

Rothbart, M., & Taylor, M. (1992). Category labels and social reality: Do we view social categories as natural kinds? In G. R. Semin & K. Fiedler (Eds.), *Language, interaction, and social cognition* (pp. 11–36). London, England: SAGE Publications.

Salomon, E., & Cimpian, A. (2014). The inherence heuristic as a source of essentialist thought. *Personality and Social Psychology Bulletin, 40,* 1297–1315. http://dx.doi.org/10.1177/0146167214541659

Schmader, T., Johns, M., & Forbes, C. (2008). An integrated process model of stereotype threat effects on performance. *Psychological Review, 115,* 336–356. http://dx.doi.org/10.1037/0033-295X.115.2.336

Sengupta, N. K., Osborne, D., & Sibley, C. G. (2014). The status-legitimacy hypothesis revisited: Ethnic-group differences in general and dimension-specific legitimacy. Advance online publication. *The British Journal of Social Psychology.*

Sidanius, J., & Pratto, F. (1999). *Social dominance: An intergroup theory of social hierarchy and oppression.* New York, NY: Cambridge University Press. http://dx.doi.org/10.1017/CBO9781139175043

Skitka, L. J., Mullen, E., Griffin, T., Hutchinson, S., & Chamberlin, B. (2002). Dispositions, scripts, or motivated correction? Understanding ideological differences in explanations for social problems. *Journal of Personality and Social Psychology, 83,* 470–487. http://dx.doi.org/10.1037/0022-3514.83.2.470

Sniderman, P. M., Brody, R. A., & Tetlock, P. E. (1991). *Reasoning and choice: Explorations in political psychology.* New York, NY: Cambridge University Press. http://dx.doi.org/10.1017/CBO9780511720468

Stanovich, K. E. (1999). *Who is rational? Studies of individual differences in reasoning.* Mahwah, NJ: Lawrence Erlbaum.

Stanovich, K. E. (2009). *What intelligence tests miss: The psychology of rational thought.* New Haven, CT: Yale University Press.

Stanovich, K. E., & West, R. F. (2000). Individual differences in reasoning: Implications for the rationality debate? *Behavioral and Brain Sciences, 23,* 645–665. http://dx.doi.org/10.1017/S0140525X00003435

Taylor, M. G., Rhodes, M., & Gelman, S. A. (2009). Boys will be boys; cows will be cows: Children's essentialist reasoning about gender categories and animal species. *Child Development, 80,* 461–481. http://dx.doi.org/10.1111/j.1467-8624.2009.01272.x

Tetlock, P. E., & Levi, A. (1982). Attribution bias: On the inconclusiveness of the cognition–motivation debate. *Journal of Experimental Social Psychology, 18,* 68–88. http://dx.doi.org/10.1016/0022-1031(82)90082-8

Toplak, M. E., West, R. F., & Stanovich, K. E. (2014). Rational thinking and cognitive sophistication: Development, cognitive abilities, and thinking dispositions. *Developmental Psychology, 50,* 1037–1048. http://dx.doi.org/10.1037/a0034910

Trope, Y., & Gaunt, R. (2007). Attribution and person perception. In M. Hogg & J. Cooper (Eds.), *The Sage handbook of social psychology* (pp. 176–194). Thousand Oaks, CA: SAGE Publications.

Unger, R. (1983). The critical legal studies movement. *Harvard Law Review, 96,* 561–675. http://dx.doi.org/10.2307/1341032

Watts, D. (2011). *Everything is obvious once you know the answer.* New York, NY: Random House.

Weatherson, B., & Marshall, D. (2014). Intrinsic vs. extrinsic properties. In E. Zalta (Ed.), *The Stanford encyclopedia of philosophy.* Retrieved from http://plato.stanford.edu/entries/intrinsic-extrinsic/

Williams, M. J., & Eberhardt, J. L. (2008). Biological conceptions of race and the motivation to cross racial boundaries. *Journal of Personality and Social Psychology, 94,* 1033–1047. http://dx.doi.org/10.1037/0022-3514.94.6.1033

E-Mail Notification of Your Latest Issue Online!

Would you like to know when the next issue of your favorite APA journal will be available online? This service is now available to you. Sign up at http://notify.apa.org/ and you will be notified by e-mail when issues of interest to you become available!