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The Confident Conservative: Ideological Differences in Judgment and Decision-Making Confidence

Benjamin C. Ruisch
Ohio State University

Chadly Stern
University of Illinois, Urbana–Champaign

In this research, we document the existence of broad ideological differences in judgment and decision-making confidence and examine their source. Across a series of 14 studies (total $N = 4,575$), we find that political conservatives exhibit greater judgment and decision-making confidence than do political liberals. These differences manifest across a wide range of judgment tasks, including both memory recall and "in the moment" judgments. Further, these effects are robust across different measures of confidence and both easy and hard tasks. We also find evidence suggesting that ideological differences in closure-directed cognition might in part explain these confidence differences. Specifically, conservatives exhibit a greater motivation to make rapid and efficient judgments and are more likely to "seize" on an initial response option when faced with a decision. Liberals, conversely, tend to consider a broader range of alternative response options before making a decision, which in turn undercuts their confidence relative to their more conservative counterparts. We discuss theoretical implications of these findings for the role of ideology in social judgment and decision-making.

Keywords: ideology, confidence, epistemic motivation, decision-making

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Confidence—the metacognitive belief that one's judgments, decisions, or attitudes are objectively correct (Dunning, 2012; Peterson & Pitz, 1988)—is a fundamental dimension of metacognition with wide-ranging implications for attitudes and behavior (Wagner, Briñol, & Petty, 2012). In the political realm, for example, more confident individuals are more likely to turn out to vote (Ortoleva & Snowberg, 2015). More generally, highly confident individuals tend to be more persuasive (Sah, Moore, & MacCoun, 2013), more resistant to persuasion (e.g., Babad, Ariav, Rosen, & Salomon, 1987), and to engage in less information seeking before making a decision (Locander & Hermann, 1979).

Research on the psychological underpinnings of political ideology provides reasons to predict that liberals and conservatives might differ in their degree of confidence. This work suggests that those of opposing ideologies may differ in "epistemic motivations" to maintain a stable and secure worldview (e.g., Jost, Glaser, Kruglanski, & Sulloway, 2003). But whether and how differences in the motivation to achieve a stable worldview might translate into actual differences in confidence has not yet been examined, and the question of whether there are ideological differences in judgment and decision-making confidence remains unanswered.

Further, in recent years a growing body of research has challenged the conclusion that liberals and conservatives differ in basic psychological motivations, instead suggesting that these differences are the result of biased stimuli selection, overreliance on self-report measures of epistemic motivation, and other methodological issues (e.g., Choma & Hodson, 2017; Crawford, 2017; Elad-Strenger, Proch, & Kessler, 2020; Fiagbenu, Proch, & Kessler, 2019; Proulx & Brandt, 2017; Taber & Young, 2013). In addition, several lines of research have suggested that it is ideological *extremists*—both conservative and liberal alike—that show greater cognitive rigidity (e.g., Skitka, 2010; Skitka, Bauman, & Sargis, 2005; Toner, Leary, Asher, & Jongman-Sereno, 2013; Zmigrod, Rentfrow, & Robbins, 2020). By this account, it should be ideological extremism, rather than ideological direction (i.e., liberalism vs. conservatism) that will relate to greater confidence.

In sum, then, despite the central role of metacognitive confidence in judgment and decision-making, attitude formation, and behavior (Wagner et al., 2012), the question of whether liberals and conservatives may generally differ in their degree of judgment confidence has not yet been the subject of systematic empirical investigation, and several competing hypotheses can be derived

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Benjamin C. Ruisch, Department of Psychology, Ohio State University; Chadly Stern, Department of Psychology, University of Illinois, Urbana–Champaign.

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Correspondence concerning this article should be addressed to Benjamin C. Ruisch, Department of Psychology, Ohio State University, 110 Lazenby Hall, Columbus, OH 43210. E-mail: ruisch.3@osu.edu

from past work. In this research, we seek to fill this theoretical and empirical gap.

We examined three questions in the present research. First, we investigated whether conservatives exhibit greater confidence in basic (nonpolitical) judgments, perceptions, and beliefs than do liberals. Second, we examined the degree to which this ideological difference would emerge across different types of judgment domains. Third, we examined a potential psychological mechanism underlying this effect, testing whether motivations to make rapid judgments and avoid deliberation would account for any confidence differences between liberals and conservatives.

Ideological Differences in Epistemic Motivation

Although political divisions appear to have been particularly tense in recent years (Pew Research Center, 2017), the psychological divide between the political right and left has long been a subject of research. For example, researchers have explored the extent to which liberals and conservatives differ on a variety of epistemic constructs, such as dogmatism, cognitive and perceptual rigidity, integrative complexity, cognitive reflection, and self-deception (see Jost, 2017, for a review). In addition, a large-scale meta-analysis, reviewing several decades of work, provided empirical support that people who are more politically conservative (vs. liberal) tend to possess chronically stronger epistemic motivations to achieve a sense of order, structure, certainty, and closure in everyday life (Jost, Sterling, & Stern, 2018). Further, these motivations are described as being "domain general," meaning that they do not simply impact political behavior but instead are also expected to guide the ways in which liberals and conservatives engage with nonpolitical aspects of the world.

One epistemic motivation on which liberals and conservatives differ and that could shape judgment processes is "intolerance of ambiguity" (Jost, 2017; Van Hiel, Onraet, Crowson, & Roets, 2016). "Ambiguous" situations are defined as those in which the appropriate or correct judgment is not easily identifiable (Budner, 1962; Frenkel-Brunswik, 1949; Furnham & Marks, 2013). Ambiguity can arise from a number of sources, such as the novelty of a situation (i.e., the appropriate action in a new situation is often unclear), the complexity of a situation (i.e., too many available cues/inputs make the appropriate response difficult to identify), or the (in)solubility of a situation (i.e., more difficult problems require more difficult behavioral responses; Budner, 1962).

Research suggests that political conservatives (vs. liberals) tend to be more averse to ambiguity, experiencing greater discomfort and anxiety when faced with ambiguous situations or stimuli (Okimoto & Gromet, 2016; Van Hiel et al., 2016). Conservatives' greater dislike of ambiguity leads them to tend to prioritize quick and efficient judgments versus engaging in extensive deliberation (Jost et al., 2003; Jost et al., 2018). In other words, conservatives tend to be more likely to "seize" on their initial judgments as a means of addressing ambiguity in the task at hand, whereas liberals may be more inclined to consider a broader range of possible response options (Jost & Amodio, 2012; Kruglanski, Pierro, Mannetti, & De Grada, 2006). Thus, ideology is linked to basic epistemic motivations, such that conservatives place greater emphasis on making rapid judgments to resolve ambiguity.

Ease of Processing and Subjective Confidence

The extent to which people make rapid and efficient judgments may, in turn, impact how confident they feel about those judgments. Past work has shown that although people's feelings of confidence sometimes closely correspond to the objective accuracy of their judgments (Dunning, 2012; Lichtenstein, Fischhoff, & Phillips, 1982; Moore & Healy, 2008), the strength of this association is often surprisingly modest or even nonexistent (Koriat, 2008, 2012). Therefore, factors other than the veridicality of judgments shape people's metacognitive appraisals concerning the accuracy of their judgments.

One factor that has been shown to impact subjective confidence is ease of processing. Responses and judgments that are generated more quickly tend to be experienced as more "cognitively fluent" (Alter & Oppenheimer, 2009). The relative feeling of ease that accompanies faster judgments leads people to feel more certain that their response is correct. Indeed, people seem to hold the lay belief that a response that takes less mental effort to generate is more accurate than one that is more effortful (Alter & Oppenheimer, 2009; Finn & Tauber, 2015; Koriat & Ackerman, 2010; Schwarz, 2004; Tormala, Petty, & Briñol, 2002). Importantly, the rapidity with which a judgment is made exerts a strong effect on confidence even when it is not a valid cue to accuracy. For example, task instructions that are difficult to read (e.g., in an unfamiliar font, Alter, Oppenheimer, Epley, & Eyre, 2007), information that is cognitively taxing to process (e.g., lower- vs. higher-volume auditory stimuli; Rhodes & Castel, 2009), and information from a less engaging source (e.g., a hesitant and awkward instructor; Carpenter, Wilford, Kornell, & Mullaney, 2013; Toftness, Carpenter, Geller, Lauber, Johnson, & Armstrong, 2018) all lead people to feel less subjectively confident without impacting judgment accuracy. Thus, judgments that are made in a quick and efficient manner tend to lead to greater feelings of confidence that one's judgment is correct.

Conservatism and Confidence

Integrating research on liberal-conservative motivational differences and the relationship between cognitive processing and subjective confidence, we predicted that conservatives would possess greater confidence in their judgments and decisions than would liberals. Specifically, to the extent that conservatives possess a stronger motivation to resolve ambiguity, we anticipated that they would make more rapid and efficient judgments and, in turn, feel greater certainty that the judgments they made were accurate.

Some previous research tentatively hints at this possibility. In one unpublished study, Krochik, Jost, and Nosek (2007) assessed participants' preferences for various pairs of objects or concepts (e.g., cats vs. dogs, love vs. money) and found that conservative participants expressed greater certainty regarding which of the two they preferred. Similarly, in research examining the effects of confidence on political behavior (e.g., voter turnout and partisan identity), Ortoleva and Snowberg (2015) found that conservatives expressed greater confidence in two types of political knowledge (unemployment and inflation rates in the United States), as well as four nonpolitical trivia questions (the year of Shakespeare's birth, the year the telephone was invented, and the populations of Spain and California). These studies provide some tentative support for our hypothesized association between conservatism and confi-

dence. However, because these studies were limited to a few specific judgment domains (personal preferences and trivia-style knowledge), they cannot answer the question of whether there may be broader, domain-general ideological differences in judgment and decision-making confidence. Further, previous research has not examined the psychological mechanism(s) that may underlie this association, should it exist. We directly addressed these questions in the present research.

Political Conservatism Versus Ideological Extremity

As noted above, some past research has suggested that ideological *extremity* (rather than liberalism-conservatism) might be more important for understanding certain judgment and decision-making processes (e.g., Greenberg & Jonas, 2003). For example, past research has shown that more ideologically extreme individuals tend to hold their political attitudes with greater moral conviction (Skitka, 2010; Skitka et al., 2005) and feel that their political beliefs are superior to those of others (Toner et al., 2013). Importantly, however, these studies have generally been limited to the political domain (and typically only to a subset of "hot-button" political issues; e.g., Toner et al., 2013), and so cannot answer the question of whether more ideologically extreme individuals tend to feel that their judgments are superior in general. Further, these studies did not directly assess confidence and so cannot speak to our present hypothesis. Nevertheless, this past research raises the question of whether it may be ideological extremity, rather than conservatism, that is associated with greater judgment and decision-making confidence. To directly test this question, in our studies we measured both conservatism and ideological extremity and examined their associations with confidence across a wide range of basic, nonpolitical judgment and decision-making tasks. This allowed us to determine whether conservatism or extremity (or both) was associated with greater confidence.

The Present Research

Across 14 studies (total $N = 4{,}575$), we tested the prediction that conservatives would exhibit greater confidence across a range of basic judgment and decision-making domains, and that the motivation to make rapid and efficient judgments would, at least in part, explain the conservatism–confidence relationship. In Studies 1A–1F, we tested the existence and breadth of ideological differences in judgment confidence using a wide range of tasks (e.g., memory of everyday environments, quantity estimates, pattern memory). In Studies 2A and 2B, we tested a possible boundary condition of this relationship, examining whether task complexity impacted the relationship between conservatism and confidence. In Studies 3A and 3B, we examined whether the conservatism–confidence relationship was limited to subjective feelings of confidence, or whether the relationship also emerged in other related judgments (e.g., probability estimates). In Study 4, we tested whether the conservatism–confidence relationship emerged even when participants were provided with an objective benchmark by which to evaluate their responses. In Study 5, we examined a behavioral consequence of ideological differences in confidence. Finally, in Studies 6A and 6B we examined a potential mechanism behind the conservatism–confidence relationship by testing whether the motivation to make quick and efficient judgments helped explain this association. All study materials, data, syntax, and preregistration information are available at https://osf.io/qea96/. This research was approved by the Institutional Review Boards at Cornell University and University of Illinois, Urbana–Champaign.

Analytic Strategy and Statistical Power

We preregistered nine of our 14 studies (Studies 1C, 1D, 2A, 3A, 3B, 4, 5, 6A, and 6B). In keeping with our preregistered analysis plans, we tested our primary predictions using both linear regression and mixed-effect models. For brevity and ease of interpretation, we report results of regression analyses in the main text and include results of mixed models in the online supplemental materials. Both sets of results are nearly identical, and overall conclusions are the same. For regression analyses, we report standardized beta coefficients. We list all predictors and control variables included in the models (if no covariates are stated, none were included). All participants who provided complete, analyzable data are included in analyses.

We took four approaches to maximizing statistical power. First, we conducted power analyses to determine sample sizes for all studies except Studies 1A and 1E. In addition, we used observed effect sizes in power analyses to ensure that studies programmatically progressed in a highly powered manner. All power analyses were conducted using G Power 3.1 (Faul, Erdfelder, Lang, & Buchner, 2007). Second, we collected large sample sizes to obtain stable effect size observations, based on simulation studies indicating that correlational effect sizes typically tend to achieve stability around 250 participants (Schönbrodt & Perugini, 2013). Thirteen of our 14 studies involved samples comparable to or larger than 250. Third, we conducted a random-effects meta-analysis of the present studies to calculate an average effect size. Fourth, we conducted additional multilevel models for each study (see the online supplemental materials) that include both participant and stimulus as random factors (Judd, Westfall, & Kenny, 2017).

Overview of Studies 1A–1F: Testing the Conservatism–Confidence Relationship

In Studies 1A–1F, we tested the existence and scope of the hypothesized association between political conservatism and judgment/decision-making confidence. We included a wide range of paradigms that were designed to assess people's confidence in their most basic perceptions, judgments, and decisions. These tasks differed on a number of dimensions (e.g., quantitative vs. nonquantitative; memory recall vs. in-the-moment judgments) and included both naturalistic (e.g., memories from everyday life) and controlled judgments (e.g., a dot estimation task). Using this broad range of paradigms allowed us to more decisively conclude that any observed ideological differences in confidence were not specific to a particular decision domain or judgment type. To further ensure the generalizability of observed effects, we also collected data from a range of different participant samples.

Study 1A

Method

In Study 1A, we tested our hypothesis that political conservatives would exhibit greater judgment confidence. We used a simple

recollection task in which participants recalled pieces of information from their everyday environments and reported confidence in their memories.

Participants. We recruited 160 participants (38% female; M_{age} = 33.07, *SD* = 8.08) from Amazon's Mechanical Turk (Mturk; Buhrmester, Kwang, & Gosling, 2011). This sample size provided 80% power to detect an effect as small as r = .22.

Procedure.

Recall task. After completing a short questionnaire on an unrelated hypothesis (the mindful attention questionnaire; Brown & Ryan, 2003), participants completed a short "Everyday Attention Quiz" in which they were asked to recall subtle elements of their everyday environments. There were 12 questions in total, which asked participants to recall objects and features from six different domains: their neighborhood, the house of a friend, their neighbor's house, their closest friend, their usual barbershop or salon, and a restaurant they regularly visit. For each question, participants were asked to type their response into an empty text box or to check a box indicating that they did not know the answer.

Confidence ratings. After answering each recall question, participants were asked "How confident are you that your answer is correct?" and rated their confidence on a scale from 1 (*not confident at all*) to 9 (*very confident*). This measure is adapted from previous research (Briñol, Petty, Valle, Rucker, & Becerra, 2007).

Political ideology. Participants provided their political orientation using a 1 (*extremely liberal*) to 7 (*extremely conservative*) scale. They reported their ideology in general, for social/cultural issues, and for economic issues. We created an average of these responses (α = .95) to calculate a single ideology score for each participant (*M* = 3.40, *SD* = 1.68).

Ideological extremity. Following past research (e.g., Brandt, Evans, & Crawford, 2015), in all studies we measured ideological extremity by "folding over" the general ideology measure to assess the distance from participants' reported ideology to the midpoint of the scale, resulting in a 4-point extremity scale ranging from 0 (*moderate*) to 3 (*extremely* [*liberal/conservative*]).

Personal importance. We also sought to rule out the possibility that importance of politics could account for any ideological differences in confidence. To do so, we assessed the degree to which participants generally viewed politics as important. Participants answered the question "How important is politics to you personally?" on a scale from 1 (*extremely unimportant*) to 7 (*extremely important*).

Candidate support. We also assessed importance in a specific domain of politics. Participants indicated the strength of their support for the candidate for whom they voted in the 2016 U.S. Presidential Election, on a scale from 1 (*not strong at all*) to 7 (*extremely strong*). Participants who reported not voting were coded as a "1" for this measure.

Additional measures. Participants also rated their current mood and provided demographic information.

Results

We first recoded "I don't know" responses to the memory questions (13.8% of total responses) as missing values for confidence and excluded them from analyses (similar results are obtained if these responses are instead recoded as a "1" for confidence). The confidence judgments were reliable (α = .84), and so we averaged them into a single score.

Consistent with our hypothesis, political ideology was significantly associated with confidence (β = .20), $t(158)$ = 2.63, p = .009, such that more conservative participants felt more certain of the accuracy of their recollections. This relationship remained significant when statistically adjusting for the demographic factors of age, gender, education, income, race (White vs. non-White), and country of birth (U.S.-born vs. non-U.S.-born; β = .19), $t(152)$ = 2.35, p = .02, indicating that none of these factors accounted for the conservatism–confidence relationship. Demographic factors do not explain our effects in this or any subsequent study and are therefore not discussed further in the main text. Further analyses of demographic variables are provided in the online supplemental materials for interested readers.

We also found that ideological extremity, importance of politics in general, and candidate support were not associated with confidence, either with ($ps \geq .36$) or without ($ps \geq .32$) conservatism as a covariate. Further, we found that the relationship between conservatism and confidence remained significant when adjusting for these constructs, β = .18, $t(155)$ = 2.15, p = .03.

Study 1B

Method

Study 1A provided preliminary support for the hypothesis that conservatives are more confident in their judgments. In Study 1B, we provided a more controlled test to examine the generalizability of this effect and to rule out potential confounds (e.g., that there may be ideological differences in actual knowledge of everyday environments). Further, in this study we used a task assessing "in-the-moment" judgments to ensure that conservatives' greater confidence was not limited to recollection-based tasks.

Participants. We conducted a power analysis based on an expected correlation of around r = .20, the effect size from Study 1A. This resulted in a recommended sample size of 191 to achieve 80% power, which we increased to 250 to further heighten power. This target sample size was used for this and all remaining studies in which we examined the basic conservatism–confidence association (i.e., did not examine potential moderating factors or mechanisms).[1] Based on this power analysis, for this study we requested 250 participants from Mturk. We received 249 responses (50% female, 0.4% "other" gender; M_{age} = 37.57, *SD* = 13.09).

Materials. We collected 20 photographs from an online image search. Images were chosen that contained simple depictions of landscapes with unambiguous, clearly identifiable features (a tree, a person, a car, an animal, or a building/structure). Photographs contained no political content.

Procedure. Each participant viewed three randomly selected photographs. For each photograph, they were asked to estimate the distance, in feet, from the camera to a specified point in the image (e.g., a tree, a house, a dog) and to type their estimate into a blank

[1] The exact number of participants fluctuates slightly across studies because of some incomplete survey responses and a few participants who completed the study without recording their participation through Mechanical Turk.

text box that appeared below the image. To prevent participants from trying to measure or otherwise calculate the distances, we included a timer on the page that allowed participants 20 s to make each estimate. If they did not complete their estimate within the allotted time, the survey page advanced and they were shown a message reminding them of the 20-s limit and encouraging them to make their responses more quickly (0.8% of all responses were not made within the allotted time).

After providing each estimate, participants reported their confidence in their response using the same measure as Study 1A. Confidence judgments were reliable ($\alpha = .89$), so we averaged them into a single score. Lastly, participants reported their political orientation ($M = 4.73$, $SD = 2.42$) using the general item from Study 1A: "Where on the following scale of political orientation would you place yourself?," measured on a 1 (*extremely liberal*) to 9 (*extremely conservative*) scale. Similar single-item measures of ideology have been widely used in past research (e.g., Graham, Haidt, & Nosek, 2009; Jost, 2006). We use this measure in all subsequent studies.

Results

Political ideology was associated with confidence ($\beta = .15$), $t(247) = 2.33$, $p = .02$, with more conservative participants expressing greater certainty in their judgments. Ideological extremity was not significantly associated with confidence ($\beta = .08$), $t(247) = 1.20$, $p = .23$, and the relationship between conservatism and confidence remained significant when adjusting for extremity ($\beta = .16$), $t(246) = 2.54$, $p = .01$. These results demonstrated that the conservatism–confidence relationship was not specific to recollection-based judgments.

Study 1C

Method

Study 1B provided additional support for the conservatism–confidence link. However, a post hoc power analysis revealed that observed power in this study was relatively low (64%). To address this issue, in Study 1C we conducted a preregistered replication of Study 1B using a larger sample. To further assess the generalizability of the conservatism–confidence association, for this study we recruited a sample from a different source to ensure that the observed relationships were not specific to Mturk participants.

Participants. We collected 916 participants from a research participant panel managed by Qualtrics (83% female, 0.1% "other" gender; $M_{age} = 35.79$, $SD = 13.19$).[2] This sample size provided 99.5% power to detect the effect size observed in Study 1B ($r = .15$).

Procedure. Participants first completed a short task that was preregistered for use in an unrelated research project (see full study materials at OSF site). They then completed the distance estimation task, following the procedure outlined in Study 1B above. On 59 trials (2.1% of all trials), the time limit expired before a judgment was made. Confidence judgments were reliable ($\alpha = .87$), and so we averaged them into a single score. Participants also indicated their political orientation ($M = 5.05$, $SD = 2.05$) and provided demographic information.

Results

Replicating Study 1B, political ideology was associated with confidence ($\beta = .13$), $t(910) = 4.03$, $p < .001$. More conservative individuals expressed greater certainty in their distance judgments. Observed power was 98%. Ideological extremity was not associated with confidence ($\beta = .05$), $t(910) = 1.36$, $p = .17$, and the conservatism–confidence relationship remained significant when adjusting for ideological extremity ($\beta = .13$), $t(909) = 4.01$, $p < .001$.

Study 1D

Method

In Study 1D, we made two advances. First, because we did not create the stimuli for studies 1A-1C, we could not rule out the possibility that the observed ideological differences in confidence might stem from differences in accuracy. To address this possibility, we used a task in which we could also assess objective accuracy. Second, we collected a different participant sample (college students, university staff, and community members) to ensure that the conservatism–confidence association generalized beyond online samples.

Participants. We recruited 250 (38% female, 0.8% no gender provided, $M_{age} = 23.16$, $SD = 8.31$) students, teachers, staff, and community members from a popular pedestrian thoroughfare on a university campus in the northeastern United States.

Procedure. Research assistants set up a table and asked passersby to participate in the study in exchange for a piece of chocolate. Individuals who chose to participate were guided to a specific fixed point on the sidewalk, given a paper survey packet, and instructed to estimate the distance from themselves to each of three visible points in the distance: a large building (177.58 feet/54.13 m away), a blue light post (218.08 feet/66.47 m away), and a clocktower (346.17 feet/105.51 m away). After making each estimate, participants rated their confidence in their response on the same 9-point scale as in the previous studies. Confidence judgments were highly reliable ($\alpha = .97$), so we averaged them into a single score. Participants then indicated their political orientation ($M = 4.16$, $SD = 2.02$), age, gender, and whether they were born in the United States.

Results

We again found that ideology was associated with confidence ($\beta = .47$), $t(248) = 8.46$, $p < .001$. More conservative participants expressed greater certainty in their judgments. To assess task accuracy, we calculated the absolute difference between participants' estimates and the correct distance value, such that higher scores indicated lower accuracy (i.e., greater deviation from the correct answer). We then z-scored these three accuracy values ($\alpha = .87$) and averaged them into a single accuracy score. Importantly, conservatives were not more accurate in their estimates ($\beta = .03$), $t(248) = .53$, $p = .60$, and adjusting for accuracy did not attenuate the strength of the relationship between conservatism

[2] As specified in the preregistration plan, we requested 800 participants from Qualtrics. We received 916 responses.

and confidence (β = .48), $t(247) = 8.47$, $p < .001$. As in our previous studies, ideological extremity was not associated with greater confidence—and, in fact, was significantly associated with lower confidence (β = −.22), $t(248) = -3.56$, $p < .001$, although this relationship was not significant when adjusting for ideology, $p = .31$. Adjusting for ideological extremity also did not attenuate the relationship between conservatism and confidence (β = .51), $t(247) = 7.56$, $p < .001$.

Study 1E

Method

In Study 1E, we tested this relationship in yet another judgment domain to further examine the breadth of this effect. For this study, we chose a simpler, more "minimalistic" judgment task in which participants estimated various quantities of dots presented on a computer screen. This task allowed us to remove some of the complexity present in the previous paradigms to examine whether the effect would emerge in even more basic judgments.

Participants. We set a target sample size of 250 participants, whom we recruited from Mturk (57% female; $M_{age} = 37.40$, $SD = 11.58$).

Procedure. We used a simple dot estimation task adapted from the social identity literature (e.g., Tajfel, Billig, Bundy, & Flament, 1971). In this task, participants viewed three images depicting random constellations of small black dots on a white background (the number of dots on each page ranged from 169 to 230). For each image, participants estimated the number of dots by typing their estimate into a text box that appeared at the bottom of the screen. We included a timer on the task (15 s) to ensure that participants provided their estimates of the number of dots, rather than trying to count them. On 24 trials (3.2% of all trials), the time limit expired before a judgment was made. After each estimate, participants indicated their degree of confidence in their judgment using the same measure as in the previous studies. Confidence judgments were highly reliable (α = .90), and so we averaged them into a single score. They then provided information about their political ideology ($M = 4.54$, $SD = 2.31$) and demographics.

Results

Political ideology was associated with confidence (β = .24), $t(248) = 3.85$, $p < .001$, with more conservative individuals expressing greater certainty in their estimates. To assess task accuracy, we calculated the absolute difference between participants' estimates and the correct number of dots, such that higher scores indicated lower accuracy. We then z-scored these three accuracy values (α = .69) and averaged them into a single index of objective accuracy. Conservatism was significantly associated with lower accuracy (β = .16), $t(248) = 2.55$, $p = .01$, and the relationship between conservatism and confidence remained significant when adjusting for accuracy (β = .23), $t(247) = 3.72$, $p < .001$. As in our previous studies, we found that ideological extremity was not associated with greater confidence—and, in fact, was significantly associated with lower confidence (β = −.18), $t(248) = -2.96$, $p = .003$, an effect that remained significant when adjusting for ideology (β = −.14), $t(247) = -2.25$, $p = .03$. The relationship between conservatism and confidence remained significant when adjusting for ideological extremity (β = .21), $t(247) = 3.31$, $p = .001$.

Study 1F

Method

Most of our previous studies (with the exception of Study 1A) used tasks involving numerical judgments (i.e., estimates of quantities and distance). As such, in Study 1F we examined confidence in a nonnumerical type of judgment to further verify that ideological differences in confidence would extend to other forms of judgment and decision-making.

Participants. We recruited 250 participants from Mechanical Turk.

Procedure. Participants completed a task in which they recalled portions of patterns of colored squares. Each pattern consisted of nine small squares of different colors displayed in a 3 × 3 matrix on a white background (see Figure 1). For each trial, participants were first given 5 s to study the pattern. After 5 s, the pattern disappeared, and a blank white screen was presented for two seconds. The same pattern of colored squares then appeared again, but this time with one square missing. Participants were asked to recall the color of the missing square, and to indicate the color of that square by clicking on a point on a graded color wheel. After each judgment, participants indicated their level of confidence in their response using the same measure as in the previous studies. They then provided their political orientation ($M = 4.32$, $SD = 2.27$). No demographic information was collected in this study.

Results

The reliability of participants' confidence judgments was somewhat lower in this study (α = .56). However, there were no differences in the strength of the relationship between conservatism and confidence as a function of the specific pattern/trial ($p =$

Figure 1. Sample pattern used in Study 1F. See the online article for the color version of this figure.

.26), and so we collapsed across the three confidence judgments to create a single confidence score.

We once again found that ideology was associated with confidence ($\beta = .20$), $t(248) = 3.17$, $p = .002$. More conservative individuals expressed greater certainty in their memories. To assess accuracy in the task, we calculated the distance from the participant's response to the correct response (i.e., the distance from the point that the participant clicked on the color wheel to the point where the correct color was located, measured in pixels). We collapsed across these three values to create a single index of accuracy. Importantly, conservatives were not more accurate in their responses ($\beta = .04$), $t(248) = 0.62$, $p = .54$, and adjusting for accuracy did not attenuate the relationship between conservatism and confidence ($\beta = .21$), $t(247) = 3.48$, $p < .001$. Ideological extremity was not associated with greater confidence, either without ($\beta = -.04$), $t(248) = -0.66$, $p = .51$, or with ($\beta = .03$), $t(247) = 0.41$, $p = .68$, conservatism as a covariate. Conservatism also remained significantly associated with confidence when adjusting for ideological extremity ($\beta = .21$), $t(247) = 3.12$, $p = .002$.

Discussion: Studies 1A–1F

Studies 1A through 1F provided support for the hypothesized association between conservatism and confidence across a range of different judgment domains. Conversely, we observed no support for the ideological extremity hypothesis: in none of these studies was ideological extremity associated with greater confidence (and in two studies, extremity was associated with lower confidence). These results provide consistent support for the idea that conservatives might generally feel and express greater confidence in their judgments and decisions than do liberals.

Studies 2A and 2B

In Studies 2A and 2B, we tested whether a high degree of task difficulty is necessary for this effect to emerge. That is, in our previous studies, the tasks that participants were asked to perform were likely perceived as difficult (e.g., guessing the exact number of dots; selecting a precise color from a graded color wheel). This raises the possibility that the conservatism–confidence link might emerge only for tasks that are very difficult, which would limit the generalizability of this effect. Indeed, previous research has argued that motivated judgment processes are most likely to emerge when tasks are ambiguous and difficult (vs. clear and simple; Kruglanski, 1980; Kunda, 1990). We therefore examined whether the conservatism–confidence relationship is constrained to highly difficult tasks.

Study 2A

Method

In Study 2A, we revisited the dot estimation task from Study 1E. In our original study, each dot set consisted of a relatively large number of dots (ranging from 169 to 230 dots in total), likely making this a difficult task for participants. In this study we systematically varied the degree of task difficulty by having participants judge a range of dot sets of varying complexity. We anticipated that the conservatism–confidence association would be stronger for more difficult (i.e., ambiguous) trials—but that it might emerge on less complex trials as well.

Participants. We preregistered a target sample size of 300 participants (80% power to detect an effect of $r = .16$), whom we recruited from Mturk (44% female, 0.3% "other" gender; $M_{age} = 37.54$, $SD = 11.53$).

Procedure. We created 10 new images consisting of varying numbers of dots, ranging from 30 to 165 dots in total and increasing in increments of 15. As in Study 1E, one randomly selected image was presented in each trial. For each of these 10 images, participants first estimated the number of dots on the screen, and then indicated their degree of confidence in their estimate using the same measure from the previous studies. We gave participants 15 s to make each judgment. On 25 trials (0.8% of all trials), the time limit expired before a judgment was made. Confidence judgments were highly reliable ($\alpha = .95$), and so we averaged them into a single score. After the estimation task, participants provided information about their political ideology ($M = 4.25$, $SD = 2.34$) and demographics.

Results

Ideology was associated with confidence ($\beta = .14$, $t(298) = 2.44$, $p = .02$), with more conservative individuals expressing greater certainty in their estimates. To assess task accuracy, we calculated the absolute difference between participants' estimates and the correct number of dots, such that higher scores indicated lower accuracy. We then z-scored these values and averaged them into a single accuracy score ($\alpha = .84$). Conservatives were not more accurate in the task ($\beta = .03$), $t(298) = .50$, $p = .62$, and adjusting for accuracy did not attenuate the size of the conservatism–confidence relationship ($\beta = .14$), $t(297) = 2.40$, $p = .02$. As before, ideological extremity was not associated with greater confidence in the task—and once again was associated with lower confidence ($\beta = -.12$), $t(298) = -2.07$, $p = .04$, although this association was not significant when adjusting for ideology ($\beta = -.09$), $t(297) = -1.48$, $p = .14$. The relationship between conservatism and confidence became marginally significant when adjusting for extremity ($\beta = .12$), $t(297) = 1.96$, $p = .051$.

To examine whether task difficulty moderated the conservatism–confidence relationship, we conducted a model using the MIXED procedure in which we specified ideology, number of dots in each trial, and their interaction term as fixed effect predictors, and confidence as the dependent variable. This interaction was not significant ($p = .26$), indicating that task complexity (i.e., the number of dots in the trial) did not impact the size of this relationship. Rather, the relationship between conservatism and confidence emerged to a similar degree across easier and more difficult trials.

Study 2B

Method

The results of Study 2A demonstrated that the conservatism–confidence association emerged not only under conditions of high task difficulty, but also on easier tasks as well.

However, although we varied the complexity of individual trials, we used a within-subjects design whereby all participants completed all trials—both easy and hard. As a result, the task itself may still have been perceived as quite difficult. In Study 2B, we conducted a conceptual replication to more conclusively determine whether a high degree of task difficulty is necessary for the conservatism–confidence link to emerge. We used a between-subjects design in which participants were randomly assigned to either a low or high difficulty task.

Participants. We conducted a power analysis based on 80% power to detect an effect of $r = .14$, the effect size observed in Study 2A. This recommended a sample of 395, which we increased to 400. We recruited participants from Mturk.

Procedure. As in Study 1F, participants first viewed a pattern consisting of nine colored squares. They were given five seconds to study the pattern, after which it disappeared for two seconds. The pattern then reappeared with one square missing, and participants indicated the color of the missing square. Those who were assigned to the high difficulty condition ($n = 191$) provided their response on the same measure used in Study 1F, in which they were asked to select the missing color from a graded color wheel. Those who were assigned to the low difficulty condition ($n = 209$) selected the missing color from one of six discrete color options (see Figure 2). Participants completed three trials of this task and then indicated their political orientation ($M = 4.41$, $SD = 2.36$). No demographic information was collected in this study.

Results

As in our previous color pattern study (Study 1F), the reliability of confidence judgments was somewhat low ($\alpha = .65$). However, there were no differences in the strength of the relationship between conservatism and confidence as a function of the specific pattern/trial ($p = .72$), and so we collapsed across the three judgments to create a single confidence score.

Ideology was associated with confidence ($\beta = .18$), $t(398) = 3.57$, $p < .001$, with more conservative individuals reporting greater confidence in their memories of the missing color. To assess accuracy in the high difficulty (color wheel) condition, we calculated the distance from the participant's response to the correct response in the same manner as in Study 1F. To assess accuracy in the low difficulty (discrete options) condition, we coded correct choices as "0" and incorrect choices as "1," such that higher scores indicated greater inaccuracy, consistent with the high difficulty condition. The relationship between ideology and accuracy did not differ as a function of the specific pattern/trial (high difficulty condition: $p = .49$; low difficulty condition: $p = .99$), and so we z-scored and collapsed across these values to create a single accuracy score. There was no relationship between ideology and accuracy ($\beta = .03$), $t(398) = 0.57$, $p = .58$, and adjusting for accuracy did not attenuate the strength of the relationship between conservatism and confidence ($\beta = .18$), $t(397) = 3.72$, $p < .001$. Ideological extremity once again was not associated with greater confidence—without conservatism as a covariate, extremity was associated with lower confidence ($\beta = -.10$), $t(398) = -2.06$, $p = .04$; with conservatism as a covariate, this relationship was not significant ($\beta = -.06$), $t(397) = -1.18$, $p = .24$. The relationship between conservatism and confidence remained significant when adjusting for extremity ($\beta = .16$), $t(397) = 3.13$, $p = .002$.

To examine whether task difficulty moderated the conservatism–confidence relationship, we conducted a linear regression analysis with ideology, condition (high vs. low difficulty), and their interaction term specified as predictors, and with confidence specified as the dependent variable. As in Study 2A, this interaction was not significant ($p = .86$), indicating that the difficulty of the task did not moderate the size of this effect. Rather, the relationship between conservatism and confidence emerged to a similar degree for both the low-difficulty ($\beta = .17$), $t(396) = 2.44$, $p = .02$, and high-difficulty ($\beta = .19$), $t(396) = 2.60$, $p = .01$, versions of the task.

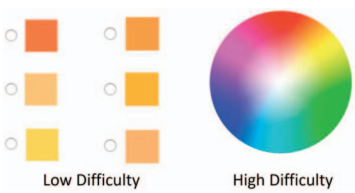

Figure 2. Example response scales for the low and high difficulty conditions, Study 2B. See the online supplemental materials for images used in the study. See the online article for the color version of this figure.

Discussion: Studies 2A and 2B

The results of these two studies further demonstrate the robustness of the association between conservatism and confidence. And while the null effects of our task-difficulty manipulations in these studies do not entirely rule out the possibility that degree of difficulty might moderate the relationship between conservatism and confidence, the fact that the size of this effect was similar for all judgments (in Study 2A, whether involving 30 dots or 165 dots; and in Study 2B, whether responding on a graded color wheel or selecting from among six discrete response options) indicates that the threshold of difficulty required for the association between conservatism and confidence to emerge is relatively low.

Studies 3A and 3B

In Studies 3A and 3B, we investigated whether the conservatism–confidence relationship is limited to self-expressions of subjective confidence, or whether it would also emerge on other conceptually similar measures of certainty. Specifically, we examined people's estimates of the objective probability that their judgment is correct. Using a different assessment of confidence also allowed us to rule out the alternative explanation that there may be ideological differences in how the confidence scale itself was interpreted. That is, even though the scale that we used in our previous studies is both widely used (Wegener, Downing, Krosnick, & Petty, 1995) and anchored by clear descriptive phrases that indicate different levels of subjective confidence, liberals and conservatives may differ in their interpretations of what these terms mean (e.g., conservatives may have a lower threshold for what it means to be "very confident"). Asking participants to instead provide estimates of the likelihood that their response is correct using a simple numerical probability judgment allowed us to rule out this possible alternative explanation by avoiding subjective and valenced terms.

Study 3A

Method

In Study 3A, we tested whether conservatives' greater confidence would also emerge in their estimates of the objective probability that their judgment was correct.

Participants. We set a target sample size of 250 participants from Mturk. We received 249 responses.

Procedure. Participants completed a single trial of the color pattern memory task from Study 2B, in which they briefly studied a pattern of nine colored squares, which then disappeared and reappeared with one color missing. Participants were then asked to choose the missing color from a set of six discrete color options. After making their choice, they were asked, "If you had to guess, what do you think is the probability that you answered this question correctly?" Participants estimated the likelihood that their answer was correct on a scale ranging from 0% to 100%. Two participants did not provide a probability judgment. Participants then indicated their political orientation ($M = 4.25$, $SD = 2.07$). No demographic information was collected.

Results

Political ideology was significantly associated with likelihood estimates ($\beta = .15$), $t(245) = 2.30$, $p = .02$. More conservative participants estimated a higher likelihood that their response was objectively correct. There was no relationship between conservatism and accuracy in the task (logistic regression: $B = .02$), $\chi^2(1) = .07$, $p = .79$, and adjusting for task accuracy did not attenuate the relationship between conservatism and confidence ($\beta = .15$), $t(244) = 2.33$, $p = .02$. Ideological extremity was not associated with probability judgments, either with ($\beta = -.02$), $t(244) = -0.35$, $p = .72$, or without ($\beta = -.07$), $t(245) = -1.18$, $p = .24$, conservatism as a covariate. The relationship between conservatism and confidence remained significant when adjusting for extremity ($\beta = .14$), $t(244) = 2.00$, $p = .05$.

Study 3B

Method

The results of Study 3A provided support for our prediction that conservatives' greater confidence would also emerge in estimates of the probability that their answer was correct. In Study 3B, we sought to conceptually replicate Study 3A using a different paradigm.

Participants. We set a target sample size of 250 participants from Mturk. We received 252 responses (38% female, 0.4% "other" gender; $M_{age} = 34.25$, $SD = 9.30$).

Procedure. Participants completed the dot estimation task from Study 1E, in which they made estimates for three sets of dots. On 28 trials (3.7% of all trials), the time limit expired before a judgment was made. After making each estimate, participants rated the probability that their estimate was correct, using the same measure from Study 3A. Participants' probability judgments were highly reliable ($\alpha = .95$), so we averaged them into a single score. Lastly, participants indicated their political ideology ($M = 4.04$, $SD = 2.15$) and provided demographic information.

Results

Ideology was marginally associated with probability judgments ($\beta = .12$), $t(250) = 1.87$, $p = .06$, with conservatives estimating a greater probability that their responses were correct. To assess task accuracy, we calculated the absolute difference between participants' estimates and the correct number of dots, such that higher scores indicated lower accuracy. We then z-scored these values ($\alpha = .72$) and averaged them into a single accuracy score. Conservatives were not more accurate in the task ($\beta = .10$), $t(250) = 1.55$, $p = .12$, and adjusting for accuracy did not attenuate the size of the conservatism–confidence relationship ($\beta = .12$), $t(249) = 1.85$, $p = .07$.

Ideological extremity was again not associated with greater confidence—and was marginally associated with lower confidence; without conservatism as a covariate: $\beta = -.12$, $t(250) = -1.91$, $p = .06$; with conservatism as a covariate: $\beta = -.08$, $t(249) = -1.21$, $p = .23$. The relationship between conservatism and confidence was not significant when adjusting for extremity ($\beta = .08$), $t(249) = 1.14$, $p = .26$.

Discussion: Studies 3A and 3B

The results of Studies 3A and 3B demonstrated that the association between conservatism and confidence is not limited to a specific measure of subjective confidence. These findings indicate that our previous results do not simply reflect ideological differences in interpretation of our dependent measure. Rather, as hypothesized, they indicate that more conservative individuals tend to be more certain in the accuracy of their judgments and decisions.

Study 4

Method

In Study 4, we sought to test whether differing interpretations of what it means to be "correct" may contribute to the conservatism–confidence relationship. Specifically, if liberals and conservatives differ in the stringency of the criteria that they adopt for what it means to be correct (e.g., if conservatives have a less strict definition), then this could explain our observed effects. To rule out this possibility, we gave participants an exact benchmark by which to judge their response. If our previously observed effects were due, in whole or in part, to ideological differences in interpretations of what it means to be correct, then giving participants a precise benchmark by which to evaluate their judgments should attenuate or eliminate the association between conservatism and confidence. Conversely, if more conservative individuals are truly more certain of the accuracy of their judgments, then the conservatism–confidence association should be robust to this change.

Participants. We set a target sample size of 250 participants from Mturk. We received 253 responses (50% female; $M_{age} = 34.75$, $SD = 9.54$).

Procedure. Participants completed the dot estimation task from Study 3B, in which they made estimates for three sets of dots. On 24 trials (3.2% of all trials), the time limit expired before a judgment was made. After making each estimate, participants

provided their judgment of the likelihood that their answer was within 10 dots of the correct answer. They provided their response on a 0–100% scale. Probability judgments were highly reliable ($\alpha = .91$), and so we averaged them into a single score. Lastly, participants reported their political orientation ($M = 4.26$, $SD = 2.19$).

Results and Discussion

Ideology was significantly associated with probability judgments ($\beta = .28$), $t(251) = 4.55$, $p < .001$, with conservatives estimating a greater probability that their responses were within 10 dots of the correct answer. To assess task accuracy, we calculated the absolute difference between participants' estimates and the correct number of dots, such that higher scores indicated lower accuracy. Unlike our previous dot estimation studies, reliability of these accuracy scores was quite low ($\alpha = .24$). However, closer inspection of participants' estimates revealed that these results were skewed by a few extreme estimates (in particular, one participant who guessed 200,000 dots for an image containing 169 dots). When these extreme responses are excluded, the accuracy scores showed acceptable reliability ($\alpha = .71$).[3] Therefore, we collapsed across these three values to create a single accuracy score. Conservatives were not more accurate in the task ($\beta = -.10$), $t(251) = -1.53$, $p = .13$, and adjusting for accuracy did not attenuate the size of the conservatism–confidence relationship ($\beta = .29$), $t(250) = 4.75$, $p < .001$. Ideological extremity was again not associated with greater confidence—and was associated with lower confidence, $\beta = -.14$, $t(251) = -2.18$, $p = .03$; with conservatism as a covariate: $\beta = -.07$, $t(250) = -1.07$, $p = .29$. The relationship between conservatism and confidence also remained significant when adjusting for ideological extremity ($\beta = .26$), $t(250) = 4.11$, $p < .001$. Thus, conservatism was associated with greater confidence even when participants were given an exact benchmark by which to judge the correctness of their response, ruling out an alternative explanation for the conservatism–confidence relationship.

Study 5

Method

In Study 5, we turned to the downstream consequences of ideological differences in confidence, examining whether they would have implications for liberals' and conservatives' behavior. To test this question, we gave participants the opportunity to place a bet on their judgments. We predicted that conservatives' greater confidence would lead them to be more likely to bet money on the accuracy of their own response. In addition to testing a behavioral implication of these ideological differences in confidence, this study also allowed us to more conclusively rule out alternative interpretations of the conservatism–confidence association, such as that the relationship stems from ideological differences in self-presentational strategies (e.g., conservatives wanting to appear more confident to others).

Participants. We set a target sample size of 250 participants from Mturk. We received 248 complete responses (54% female, 0.8% "other" gender; $M_{age} = 39.23$, $SD = 12.12$).

Procedure. Participants completed a single trial of a color pattern memory task (adapted from our previous studies) in which they briefly studied a pattern of nine colored squares, which then disappeared and reappeared with one color missing. Participants selected the missing color from one of four discrete color options. Participants were then given the opportunity to place a bet on their judgment, for a chance to win a $.20 bonus payment. They had the option of either (a) betting for their answer (in which case they would receive the bonus payment if they got the answer correct) or (b) betting against their answer (in which case they would receive the bonus payment if they got the answer incorrect). This feature of our experimental design allowed us to ensure that any ideological differences in betting behavior were not due to ideological differences in financial risk-taking (e.g., willingness to bet in general; Choma, Hanoch, Hodson, & Gummerum, 2014). Importantly, because there were four possible response options, the optimal choice for individuals who were not certain of the accuracy of their response would be to bet against their own answer. Thus, only individuals with a high degree of confidence should bet for their own answer. Participants then indicated their gender, age, and political orientation ($M = 4.21$, $SD = 2.38$).

Results

Political ideology was significantly associated with betting behavior (logistic regression: $B = .15$), $\chi^2(1) = 5.93$, $p = .01$, such that more conservative participants were more likely to bet for (vs. against) their own response. As in our previous studies, we also verified that this relationship was not explained by ideological differences in task accuracy: there was no relationship between conservatism and accuracy in the task ($B = .03$), $\chi^2(1) = .33$, $p = .57$, and adjusting for task accuracy did not attenuate the relationship between conservatism and betting for (vs. against) one's own response ($B = .19$), $\chi^2(1) = 7.54$, $p = .006$. Ideological extremity was not associated with betting decisions, either with ($B = -.07$), $\chi^2(1) = .36$, $p = .55$, or without ($B = -.15$), $\chi^2(1) = 2.15$, $p = .14$, conservatism as a covariate. The relationship between conservatism and betting decisions remained significant when adjusting for extremity ($B = .14$), $\chi^2(1) = 4.00$, $p = .05$. This finding indicates that ideological differences in confidence have implications for behavior, and that the observed differences are likely to reflect genuine differences in confidence (vs., e.g., self-presentational strategies).

Studies 6A and 6B

In Studies 6A and 6B, we turned our attention to testing a potential mechanism underlying the association between conservatism and confidence. We hypothesized that conservatives' greater confidence might be explained in part by ideological differences in closure-directed cognition. Specifically, we predicted that when making a judgment or decision about a difficult or ambiguous task, conservatives would be more motivated to "seize and freeze" on an initial response, while liberals would consider a broader range of possible response options. We predicted that

[3] Because the survey instructions explicitly informed participants that 300 was the maximum number of dots that the images contained, for this reliability analysis we excluded responses higher than 300.

these ideological differences in deliberation would in part explain the conservatism–confidence relationship. We examined this prediction using both a self-report measure of need for closure and a behavioral measure of closure-directed cognition.

Study 6A

Method

In Study 6A, we provided an initial test of our proposed mechanism that ideological differences in closure-directed cognition would in part explain the conservatism–confidence relationship. We predicted that conservatives would express greater motivation to make quick and efficient decisions, and that this would help explain their greater confidence.

Participants. We recruited participants through Qualtrics' panel service, requesting an equal number of political liberals and conservatives and an approximately equal number of men and women. We preregistered our requested sample size of 341 "qualifying participants" (participants who passed an included attention check). This yielded a total sample (including those who failed the attention check) of 462 participants. Three participants did not complete our dot estimation task, and therefore could not be included in analyses, leaving an analyzable sample of 459 participants (52% female, 0.2% "other" gender, 0.4% no gender reported; M_{age} = 38.55, SD = 13.69; 80% power to detect an effect of r = .13).

Procedure.

Political ideology. Participants first provided demographic information and indicated their political ideology (M = 5.00, SD = 2.55).

Motivation for quick judgments. To assess motivation to make quick and efficient judgments, participants completed the six-item decisiveness subscale of the need for closure scale (Roets & Van Hiel, 2007) using a 1 (*completely disagree*) to 6 (*completely agree*) response scale. Sample items include "When I am confronted with a problem, I'm dying to reach a solution very quickly," and "I would rather make a decision quickly than sleep on it." We created a composite by averaging across these items (α = .85).

Confidence task. Participants then completed a modified version of the dot task from our previous studies. They first made estimates for 10 randomly generated sets of dots and then rated their confidence in each estimate on the 9-point confidence measure used in our previous studies. On 226 trials (4.9% of all trials) the time limit expired before a judgment was made or the participant did not make a judgment. Confidence judgments were highly reliable (α = .95), and so we averaged them into a single score.

Other measures. Finally, participants answered an attention check question and were asked to provide their opinion about what they believed was the purpose of the study.

Results and Discussion

For our preregistered analyses, we originally planned to exclude participants who failed the attention check. However, for consistency with our other studies (in which no attention check was included), we included all participants in our primary analyses. We nevertheless also report all statistics excluding participants who failed the attention check. All findings are the same when excluding these participants.

We again found that ideology was associated with confidence (β = .20), $t(457)$ = 4.36, $p < .001$, with more conservative participants expressing greater certainty in their estimates. To assess task accuracy, we calculated the absolute difference between participants' estimates and the correct number of dots, such that higher values indicated lower accuracy. We averaged these scores into a single accuracy score (α = .90; see Footnote 3). There was no association between ideology and accuracy (β = .06), $t(457)$ = 1.32, p = .19, and adjusting for accuracy did not meaningfully attenuate the relationship between conservatism and confidence (β = .19), $t(456)$ = 4.23, $p < .001$. Unlike our previous studies, ideological extremity was significantly associated with greater confidence, both with (β = .12), $t(456)$ = 2.61, p = .009, and without (β = .12), $t(457)$ = 2.65, p = .008, conservatism as a covariate. Importantly, however, political orientation remained a significant predictor of confidence when adjusting for ideological extremity (β = .20), $t(456)$ = 4.34, $p < .001$.

We also found that conservatism was associated with greater decisiveness (β = .19), $t(457)$ = 4.17, $p < .001$. To examine whether decisiveness accounted, in part, for the relationship between conservatism and confidence, we conducted a mediation analysis using Model 4 of the PROCESS macro with 5,000 bias-corrected bootstrap samples (Hayes, 2018). We specified ideology as the exogenous variable, motivation for quick judgments as the mediator variable, and confidence as the outcome variable. The indirect effect was significant: ab = .03, SE = .01, 95% CI [.01, .06], R^2 = .02. This finding suggests that conservatives' greater confidence might be, at least in part, explained by their greater desire to reach a rapid and final judgment (see Figure 3).

Excluding participants who failed the attention check, the conservatism–confidence association (β = .16), $t(340)$ = 2.89, p = .004, the conservatism–decisiveness association (β = .13), $t(340)$ = 2.34, p = .02, and the indirect effect (ab = .02, SE = .01, 95% CI [.002, .04], R^2 = .01) were also all significant.

Study 6B

Method

The results of Study 6A suggested that conservatives' greater need to reach a rapid and final decision might in part explain their greater levels of confidence. In Study 6B, we provided a concep-

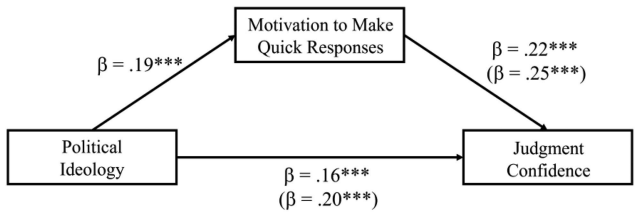

Figure 3. Model illustrating conservatism predicting greater confidence through the motivation for rapid judgments (Study 6A). Coefficients are standardized regression coefficients. Values in parentheses represent direct relationships; values without parentheses represent relationships after including all variables in the model. *** $p < .001$.

tual replication and extension using a behavioral measure of efficient cognition. Using this measure, we directly tested the prediction that conservatives would be more likely to seize and freeze on an initial response, rather than considering a broader range of possible response options. Past work has suggested that comparing a wider range of response options increases the probability that no single response option will be clearly superior to the others, which in turn increases the difficulty of making a judgment (Alter & Oppenheimer, 2009; Mills, Meltzer, & Clark, 1977; Schwarz, 2004). Thus, we predicted that consideration of fewer alternative judgment options would explain, in part, conservatives' greater confidence.

Participants. We preregistered a target sample size of $N = 350$ from Mturk (80% power to detect an effect of $r = .15$). We received 354 responses. Nine participants either did not complete the dot estimation task ($n = 8$) or did not provide a confidence judgment ($n = 1$), leaving 345 participants for analyses (50% female, 0.3% "other" gender; $M_{age} = 36.70$, $SD = 11.58$).

Procedure.

Judgment confidence. Participants completed a single trial of the dot estimation task, in which they viewed a set of dots (randomly selected from one of five randomly generated patterns) and estimated the number of dots that appeared on the page. After making their estimate, they rated their level of confidence in their response using the 9-point confidence measure from the previous studies.

Consideration of alternative responses. Next, participants completed a measure adapted from Gilovich, Medvec, and Savitsky (2000) in which they were asked to list all of the possible responses (i.e., other possible dot quantities) that they considered before providing their final estimate. They entered these responses into a blank text box, or clicked a box indicating that they did not consider any alternative responses.

Political ideology. Participants reported their political ideology ($M = 4.23$, $SD = 2.33$) in the same manner as in the previous studies.

Results and Discussion

Ideology was associated with confidence ($\beta = .18$), $t(343) = 3.43$, $p = .001$, with more conservative participants expressing greater confidence in their dot estimates. To assess task accuracy, we calculated the absolute difference between participants' estimates and the correct number of dots, such that higher scores indicated lower accuracy. Conservatives were not more accurate in the task ($\beta = .01$), $t(343) = 0.25$, $p = .80$, and adjusting for accuracy did not attenuate the relationship between conservatism and confidence ($\beta = .18$), $t(342) = 3.41$, $p = .001$. We once again found that ideological extremity was not significantly associated with greater confidence, either with ($\beta = .10$), $t(342) = 1.75$, $p = .08$, or without ($\beta = .04$), $t(343) = 0.66$, $p = .51$, conservatism as a covariate. Conservatism remained significantly associated with confidence when adjusting for ideological extremity ($\beta = .21$), $t(342) = 3.80$, $p < .001$.

Consistent with our predictions, we also found that more conservative participants listed fewer alternative responses ($\beta = -.14$), $t(343) = -2.71$, $p = .007$, indicating that they considered fewer possible response options before making their judgment. To examine whether consideration of alternative options accounted, in part, for the relationship between conservatism and confidence, we conducted a mediation analysis using Model 4 of the PROCESS macro with 5,000 bias-corrected bootstrap samples (Hayes, 2018). We specified ideology as the exogenous variable, number of alternatives considered as the mediator variable, and confidence as the outcome variable. The indirect effect was significant: $ab = .01$, $SE = .007$, 95% CI [.001, .03], $R^2 = .01$. This finding suggests that conservatives' greater tendency to make rapid and final decisions might explain, in part, their higher levels of judgment confidence (see Figure 4).

Discussion of Studies 6A and 6B

These studies suggest that ideological differences in epistemic motivation might partially explain the conservatism–confidence relationship. We found that both a self-report scale and a measure of "seizing and freezing" significantly mediated the relationship between conservatism and confidence. The results of these two studies therefore provide convergent support for our hypothesized mechanism.

Internal Meta-Analysis of Conservatism–Confidence Relationship

Following the recent best-practices recommendations of a number of researchers (e.g., Goh, Hall, & Rosenthal, 2016; Lakens & Etz, 2017; McShane & Böckenholt, 2017), we conducted an internal, "within-paper" meta-analysis to optimize statistical power in determining the mean effect size of our studies (Braver, Thoemmes, & Rosenthal, 2014; Cohn & Becker, 2003), as well as to examine potential moderators of the conservatism–confidence relationship. We used a random-effects model to better extrapolate these effects beyond the current studies to the general population (Hedges & Vevea, 1998). The average effect size across these studies was $\beta = .20$, $SE = .03$, $z = 7.92$, $p < .001$, and the 95% CI for the effect size was $\beta = .15, .25$ (see Figure 5).

Cochran's Q-test suggested that there was heterogeneity in our observed effect sizes, $Q(13) = 41.64$, $p < .001$, and so we examined potential moderators. We found no differences in effect sizes as a function of task type ($p = .80$), whether the task required a numerical or non-numerical judgment ($p = .52$), or whether the sample was from Mturk or other sources ($p = .19$). However, we did find that the effect size observed in Study 1D (the real-world distance estimation task) was significantly larger than effect sizes

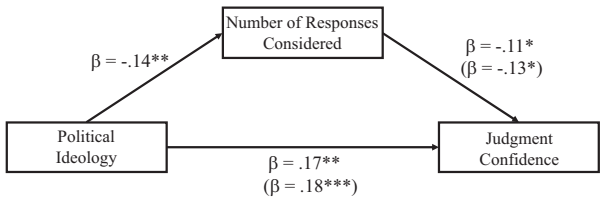

Figure 4. Model illustrating conservatism predicting greater confidence through the consideration of alternative responses (Study 6B). Coefficients are standardized regression coefficients. Values in parentheses represent direct relationships; values without parentheses represent relationships after including all variables in the model. * $p < .05$. ** $p < .01$. *** $p < .001$.

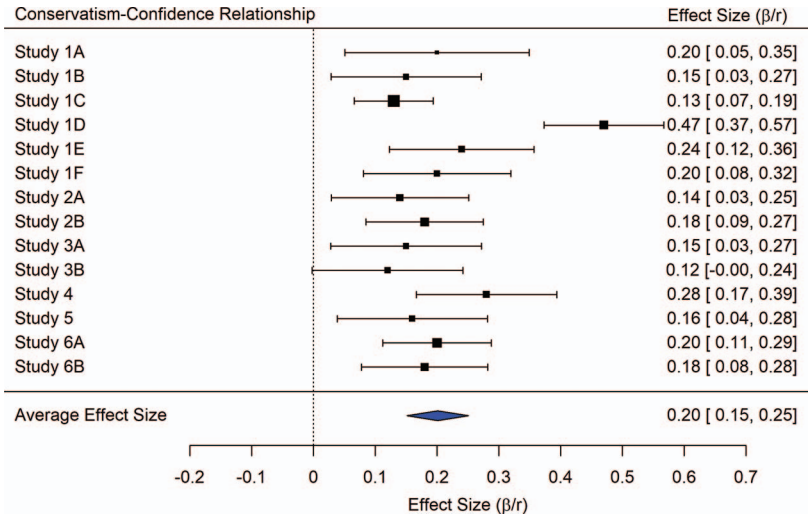

Figure 5. Forest plot of effect sizes of conservatism–confidence relationship, Studies 1A–6B. Average effect size (β/*r*) based on a random-effects meta-analysis model. See the online article for the color version of this figure.

observed in the other studies (estimated difference: $\beta = .30$, $SE = .05$, $z = 5.76$, $p < .001$). When this difference is accounted for, the residual variance among the effect sizes becomes nonsignificant, $Q(12) = 8.50$, $p = .74$. This suggests that Study 1D accounts for most of the variance among the observed effect sizes. Importantly, however, the estimated average effect size does not change substantially when this study is excluded from the meta-analysis: $\beta = .17$, $SE = .01$, $z = 11.76$, $p < .001$.

Although these judgment tasks were nonpolitical in nature, the highly polarized political landscape in the United States raises the possibility that liberals' and conservatives' confidence could be shaped by which political party is currently in power. To test this question, we took advantage of a naturally occurring political power manipulation—the end of Barack Obama's (liberal) administration and the beginning of Donald Trump's (conservative) administration. There was no significant difference in effect sizes between studies conducted during the Obama (Studies 1A, 1B, 1E) versus Trump (all other studies) presidencies ($p = .94$), suggesting that the association between conservatism and confidence is similarly strong regardless of the political party currently in power.

We also examined the overall size of the relationship between ideological extremity and confidence. We first tested the relationship between extremity and confidence without political orientation as a control variable. This analysis revealed a small but statistically significant *negative* relationship between ideological extremity and confidence, such that more ideologically extreme individuals tended to be less confident in their judgments. The average effect size was $\beta = -.06$, $SE = .03$, $z = -2.05$, $p = .04$, and the 95% CI for the effect size was $\beta = -.11, -.0003$ (see Figure 6). We also examined the relationship between ideological extremity and confidence after adjusting for political orientation. This effect size was nonsignificant and was very close to zero: The estimated average effect size was $\beta = -.0003$, $SE = .02$, $z = 0.01$, $p = .99$, and the 95% CI for the effect size was $\beta = -.04, .04$. Finally, we also examined the strength of the relationship between conservatism and confidence with ideological extremity as a control variable. The average effect size was $\beta = .20$, $SE = .03$, $z = 6.77$, $p < .001$, and the 95% CI for the effect size was $\beta = .14, .25$.

General Discussion

Across 14 studies (total $N = 4{,}575$), we found that political conservatism was associated with greater judgment and decision-making confidence. This conservatism–confidence relationship emerged across a range of judgment and decision-making domains, including distance estimates, memory judgments, and quantity estimates (Studies 1A–1F). We found that this association was of a similar strength under conditions of both low and high task difficulty (Studies 2A and 2B). Importantly, we also found that this relationship was robust across different operationalizations of confidence, such as when participants reported the probability that their responses were objectively correct (Studies 3A and 3B) and when they indicated confidence in their judgment against an objective benchmark (Study 4). Further, these ideological differences in confidence appear to have behavioral consequences, with conservatives being more likely to place bets *for* (vs. against) the accuracy of their own response (Study 5). In examining the factors that underlie this relationship, we found that conservatives reported a greater motivation to reach a rapid and final decision (Study 6A) and considered fewer alternative options before making a final judgment (Study 6B). We also found evidence suggesting that this desire to quickly reach closure in judgments might in part explain conservatives' greater confidence. Overall, the present research broadly contributes to understanding the role of ideology and motivation in basic social–cognitive judgments.

Linking Ideological Differences in Motivation to Judgment Confidence

In this research we have sought to answer calls emphasizing the need for greater integration and organization of the large body of research on ideological differences in cognition, motivation, and

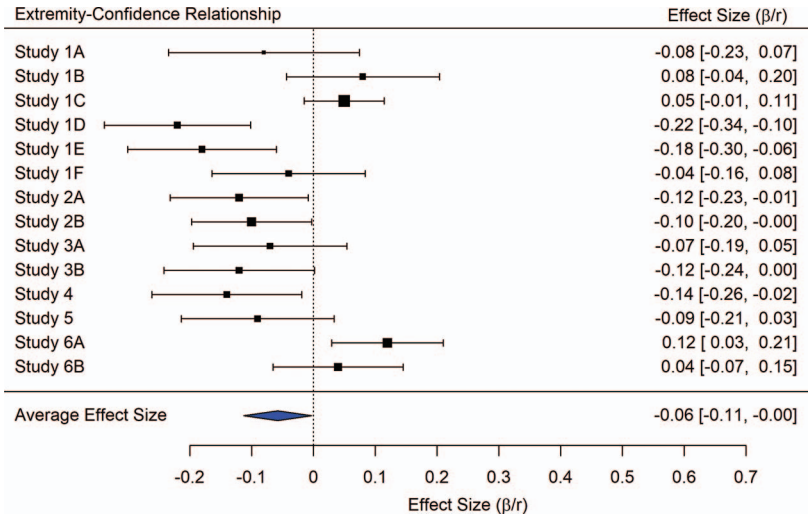

Figure 6. Forest plot of effect sizes of ideological extremity-confidence relationship, without conservatism as a covariate, Studies 1A–6B. Average effect size (β/*r*) based on a random-effects meta-analysis model. See the online article for the color version of this figure.

behavior (e.g., Taber & Young, 2013). Rather than simply adding another entry to the list of psychological differences between liberals and conservatives, in this research—and the theoretical framework that we have constructed to support it—we have sought to situate the present findings within several branches of research on ideological differences.

Of greatest importance to the present research, past theory has argued that closure-directed cognition stems from a psychological motivation or "need" for a clear and rapid answer to a problem or decision. This more closed thinking style (i.e., "seizing and freezing") is theorized to reduce ambiguity and heighten certainty (Kruglanski & Webster, 1996). Therefore, to the extent that conservatives are more chronically oriented toward making quick decisions, theory predicts that they should be inclined to experience greater certainty in their perceptions and judgments of the world. However, no past research, to our knowledge, has empirically examined whether or how closure-directed cognition actually heightens certainty in one's own judgments and decisions. As a result, there has been a theoretical gap in the literature regarding whether and how a greater desire for certainty among conservatives may translate into actually experiencing greater certainty. Our work provides insight into this question by bridging the divide between research and theory on ideological differences in epistemic motivations to attain certainty (e.g., intolerance of ambiguity and need for closure) with work from the judgment and decision-making literature on deliberation and fluency. Specifically, we found evidence suggesting that "seizing and freezing" on judgments minimizes the degree to which an individual considers possible alternative response options, and that this reduced consideration of alternatives might, in turn, heighten confidence in one's response.

Our findings also contribute to the theoretical framework of ideology as motivated social cognition (Jost et al., 2003; Jost et al., 2018). Previous research has highlighted that conservatives tend to be more oriented toward closure as a means of avoiding ambiguity than are liberals. Here, we extend this perspective by linking ideological differences in epistemic motivation to processes relating to how people render judgments and form metacognitive appraisals. Generally speaking, our findings suggest that conservatives might be more likely to anchor on an initial judgment that comes to mind, whereas liberals might be more inclined to question, and possibly change, an initial judgment before making a final decision (Jost & Krochik, 2014).

Moving forward, the development of a more comprehensive theoretical understanding of ideological differences in confidence will require further investigation of the impact and implications of these differences. Research suggests that confidence is a fundamental dimension of human metacognition (Wagner et al., 2012) with widespread implications. For example, more confident individuals are more resistant to persuasion (Babad et al., 1987) and tend to seek less information before making a decision (Locander & Hermann, 1979). The observed ideological differences in confidence may therefore lead to liberal-conservative asymmetries in these domains. In addition, confidence may shape other politically relevant aspects of cognition and behavior. For example, individuals who are more confident in a given topic or position may be less likely to "vet" or verify information that agrees with their views. If true, this may shed light on the recent epidemic of "fake news" and help explain why these fictitious news stories seem to have found greater purchase among more conservative individuals (Guess, Nyhan, & Reifler, 2018; Pennycook & Rand, 2018). Future research could examine whether conservatives' greater confidence impacts these types of downstream consequences.

It is also necessary to highlight that social–cognitive outcomes (e.g., confidence judgments) are generally explained through multiple psychological mechanisms (Higgins, 1998). Here, we examined the explanatory role of closure-directed cognition, but it is important to consider additional mechanisms that could operate in parallel with closure-directed cognition to explain the conservatism–confidence relationship. We speculate about three possible mechanisms. First, self-deception and self-enhancement can lead people to view themselves and their abilities in an overly positive light (Schwardmann &

van der Weele, 2019; von Hippel & Trivers, 2011). Past work suggests that conservatives report greater self-deception (Jost, 2017) and display greater self-enhancement (Wojcik & Ditto, 2015), which may also lead to their greater confidence. Second, misjudging one's skills can also contribute to greater confidence (Baron & Jost, 2019; Kruger & Dunning, 1999). Here, we found that liberals and conservatives generally possessed comparable degrees of accuracy. However, in situations where conservatives might be less accurate, these misjudgments could further amplify ideological differences in confidence. Third, a desire for social conformity (i.e., authoritarianism; Feldman, 2003) could heighten confidence by downplaying alternative perspectives that other people provide. Given that conservatives tend to place greater value on social conformity (Jost, van der Linden, Panagopoulos, & Hardin, 2018), this motivation could also contribute to their greater confidence. It would be generative for future research to examine whether these and other mechanisms provide additional insight into the roots of the conservatism–confidence link.

Ideological Direction, Ideological Extremity, and Political Confidence

This work also takes a step toward resolving an ongoing ambiguity in the literature regarding the relative influence of ideological direction (i.e., a person's degree of liberalism vs. conservatism) and ideological extremity on judgment and decision making. In this work, we found consistent evidence that ideological direction was associated with greater judgment confidence. As noted in the introduction, however, some previous research has suggested that ideological extremity—rather than direction—may play a more impactful role in guiding some metacognitive appraisals (e.g., perceived belief superiority; Toner et al., 2013), at least for certain "hot button" political beliefs and judgments. In this research we did not find that ideological extremity predicted greater judgment confidence. In fact, across the present studies the meta-analytic effect size of the relationship between extremity and confidence was either very close to zero (with ideology as a covariate) or even negative (without ideology as a covariate). Importantly, however, we do not view our findings as being at odds with this past research. Rather, we believe it is possible to develop an integrative perspective concerning when ideological direction will play a more or less important role than ideological extremity in guiding judgment confidence. For example, it may be that for conditions under which ideological identity is activated (e.g., when answering questions about hot-button political issues), extremity may also shape metacognitive judgments such as confidence. Future research may wish to examine this possibility.

Moderators and Boundary Conditions of the Conservatism–Confidence Association

In the present research, we examined the relationship between ideology and judgment confidence using tasks that differed on several dimensions, including both naturalistic judgments and more controlled tasks; memory recall and in-the-moment judgments; and quantitative and nonquantitative judgments. The meta-analysis indicated that the size of the conservatism–confidence relationship did not differ based on task type, suggesting that conservatives' greater confidence is relatively robust to the specific features of the decision task and is therefore likely to generalize to other judgments. In addition, these tasks were designed to assess simple forms of judgment that seem likely to represent domain-general processes.

Importantly, however, there are a variety of factors that can affect subjective confidence. In particular, previous experience with the task at hand may modulate the strength and direction of the relationship between ideology and confidence. When experience with a given domain is relatively equal between liberals and conservatives, we anticipate that the conservatism–confidence relationship would emerge. However, the overall relevance of the judgment could moderate the size of this relationship. Increased relevance of a judgment amplifies the desire to make an accurate response, as the costs of being wrong are greater (Kruglanski, 1989). In a context where liberals and conservatives view the judgment as highly (and equally) relevant, conservatives might increase their confidence as a means of justifying low levels of deliberation, whereas liberals might decrease their confidence as a result of having considered various alternative options that could be correct. If true, this may help to explain why we observed a significantly larger effect size in Study 1D. Participants in that study made in-person distance estimates to familiar and frequently encountered objects in their local community. In contrast, participants in the other studies either made judgments from memory or about objects that they would likely never see again. Accordingly, the distance judgments in Study 1D may have held greater relevance for individuals and, in turn, produced the larger ideological difference in confidence.

Further, in domains where liberals have considerably greater experience, exposure, or vested interest, the conservatism–confidence relationship may be attenuated, or liberals may even express greater confidence. For example, given that liberals have been shown to express a greater preference for abstract art (Wilson, Ausman, & Mathews, 1973), they may be more confident in their ability to distinguish a Rothko from a Mondrian. Similarly, lifestyle differences between liberals and conservatives (DellaPosta, Shi, & Macy, 2015) might lead liberals to be more certain in their knowledge of what separates a latte from a macchiato. However, it is unlikely that these differences derived from exposure and expertise would reflect meaningful cognitive differences between liberals and conservatives. Similarly, we would be hesitant to conclude general psychological differences if we observed that conservatives were more confident in their knowledge of NASCAR, hunting, or country music (DellaPosta et al., 2015). In this work, we intentionally selected simple judgment domains that were free of explicitly or tacitly political content, and we avoided tasks that might be (even tangentially) related to ideological differences. Nevertheless, future research should seek to identify the domains in which the conservatism–confidence relationship might be attenuated or even reversed. Doing so would surely deepen our understanding of the nature and extent of this effect.

Concluding Remarks

In this work, we documented the existence of broad ideological differences in judgment and decision-making confidence, finding that political conservatives exhibited greater confidence across a wide range of judgment domains. In addition, we found evidence suggesting that these confidence differences might be explained in part by differences in judgment and decision-making style: Con-

servatives exhibited a greater tendency to make quick and efficient decisions, which was associated with greater confidence. Liberals, conversely, tended to consider a wider range of possible responses, which was associated with lower confidence. Given the broad influence of metacognitive confidence (Wagner et al., 2012), we anticipate that these ideological differences in confidence may have the potential to help explain other liberal-conservative asymmetries in cognition and behavior. We hope that these findings will prove generative for future research and theory.

Context. Decades of research on the nature of political ideology has fueled many generative debates regarding how political attitudes and beliefs may relate to basic psychological goals, motivations, and cognitive processes. Some researchers have argued that liberals and conservatives differ on many such dimensions, while others contend that ideological extremity might be a more informative construct than is ideological direction (i.e., liberalism-conservatism) for understanding variability in motivations and judgment processes. We sought to examine the degree to which conservatism would relate to metacognitive judgment and decision-making processes in domains that are devoid of political content. Our results highlight that conservatives (but not ideological extremists) display greater confidence in their judgments on nonpolitical tasks. These findings contribute to broader discussions of how conservatism and epistemic motivation are linked to judgment processes.

References

Alter, A. L., & Oppenheimer, D. M. (2009). Uniting the tribes of fluency to form a metacognitive nation. *Personality and Social Psychology Review, 13,* 219–235. http://dx.doi.org/10.1177/1088868309341564

Alter, A. L., Oppenheimer, D. M., Epley, N., & Eyre, R. N. (2007). Overcoming intuition: Metacognitive difficulty activates analytic reasoning. *Journal of Experimental Psychology: General, 136,* 569–576. http://dx.doi.org/10.1037/0096-3445.136.4.569

Babad, E. Y., Ariav, A., Rosen, I., & Salomon, G. (1987). Perseverance of bias as a function of debriefing conditions and subjects' confidence. *Social Behaviour, 2,* 185–193.

Baron, J., & Jost, J. T. (2019). False equivalence: Are liberals and conservatives in the United States equally biased? *Perspectives on Psychological Science, 14,* 292–303. http://dx.doi.org/10.1177/1745691618788876

Brandt, M. J., Evans, A. M., & Crawford, J. T. (2015). The unthinking or confident extremist? Political extremists are more likely than moderates to reject experimenter-generated anchors. *Psychological Science, 26,* 189–202. http://dx.doi.org/10.1177/0956797614559730

Braver, S. L., Thoemmes, F. J., & Rosenthal, R. (2014). Continuously cumulating meta-analysis and replicability. *Perspectives on Psychological Science, 9,* 333–342. http://dx.doi.org/10.1177/1745691614529796

Briñol, P., Petty, R. E., Valle, C., Rucker, D. D., & Becerra, A. (2007). The effects of message recipients' power before and after persuasion: A self-validation analysis. *Journal of Personality and Social Psychology, 93,* 1040–1053. http://dx.doi.org/10.1037/0022-3514.93.6.1040

Brown, K. W., & Ryan, R. M. (2003). The benefits of being present: Mindfulness and its role in psychological well-being. *Journal of Personality and Social Psychology, 84,* 822–848. http://dx.doi.org/10.1037/0022-3514.84.4.822

Budner, S. (1962). Intolerance of ambiguity as a personality variable. *Journal of Personality, 30,* 29–50. http://dx.doi.org/10.1111/j.1467-6494.1962.tb02303.x

Buhrmester, M., Kwang, T., & Gosling, S. D. (2011). Amazon's Mechanical Turk: A new source of inexpensive, yet high-quality, data? *Perspectives on Psychological Science, 6,* 3–5. http://dx.doi.org/10.1177/1745691610393980

Carpenter, S. K., Wilford, M. M., Kornell, N., & Mullaney, K. M. (2013). Appearances can be deceiving: Instructor fluency increases perceptions of learning without increasing actual learning. *Psychonomic Bulletin & Review, 20,* 1350–1356. http://dx.doi.org/10.3758/s13423-013-0442-z

Choma, B. L., Hanoch, Y., Hodson, G., & Gummerum, M. (2014). Risk propensity among liberals and conservatives: The effect of risk perception, expected benefits, and risk domain. *Social Psychological and Personality Science, 5,* 713–721. http://dx.doi.org/10.1177/1948550613519682

Choma, B. L., & Hodson, G. (2017). Right-wing ideology: Positive (and negative) relations to threat. *Social Cognition, 35,* 415–432. http://dx.doi.org/10.1521/soco.2017.35.4.415

Cohn, L. D., & Becker, B. J. (2003). How meta-analysis increases statistical power. *Psychological Methods, 8,* 243–253. http://dx.doi.org/10.1037/1082-989X.8.3.243

Crawford, J. T. (2017). Are conservatives more sensitive to threat than liberals? It depends on how we define threat and conservatism. *Social Cognition, 35,* 354–373. http://dx.doi.org/10.1521/soco.2017.35.4.354

DellaPosta, D., Shi, Y., & Macy, M. (2015). Why do liberals drink lattes? *American Journal of Sociology, 120,* 1473–1511. http://dx.doi.org/10.1086/681254

Dunning, D. (2012). Confidence considered: Assessing the quality of decisions and performance. In K. Demarree & P. Brinol (Eds.), *Social metacognition* (pp. 63–80). New York, NY: Psychology Press.

Elad-Strenger, J., Proch, J., & Kessler, T. (2020). Is disgust a "conservative" emotion? *Personality and Social Psychology Bulletin, 46,* 896–912.

Faul, F., Erdfelder, E., Lang, A. G., & Buchner, A. (2007). G*Power 3: A flexible statistical power analysis program for the social, behavioral, and biomedical sciences. *Behavior Research Methods, 39,* 175–191. http://dx.doi.org/10.3758/BF03193146

Feldman, S. (2003). Enforcing social conformity: A theory of authoritarianism. *Political Psychology, 24,* 41–74. http://dx.doi.org/10.1111/0162-895X.00316

Fiagbenu, M. E., Proch, J., & Kessler, T. (2019). Of deadly beans and risky stocks: Political ideology and attitude formation via exploration depend on the nature of the attitude stimuli. *British Journal of Psychology*. Advance online publication. http://dx.doi.org/10.1111/bjop.12430

Finn, B., & Tauber, S. K. (2015). When confidence is not a signal of knowing: How students' experiences and beliefs about processing fluency can lead to miscalibrated confidence. *Educational Psychology Review, 27,* 567–586. http://dx.doi.org/10.1007/s10648-015-9313-7

Frenkel-Brunswik, E. (1949). Tolerance of ambiguity as a personality variable. *American Psychologist, 3,* 268.

Furnham, A., & Marks, J. (2013). Tolerance of ambiguity: A review of the recent literature. *Psychology, 4,* 717–728. http://dx.doi.org/10.4236/psych.2013.49102

Gilovich, T., Medvec, V. H., & Savitsky, K. (2000). The spotlight effect in social judgment: An egocentric bias in estimates of the salience of one's own actions and appearance. *Journal of Personality and Social Psychology, 78,* 211–222. http://dx.doi.org/10.1037/0022-3514.78.2.211

Goh, J. X., Hall, J. A., & Rosenthal, R. (2016). Mini meta-analysis of your own studies: Some arguments on why and a primer on how. *Social and Personality Psychology Compass, 10,* 535–549. http://dx.doi.org/10.1111/spc3.12267

Graham, J., Haidt, J., & Nosek, B. A. (2009). Liberals and conservatives rely on different sets of moral foundations. *Journal of Personality and Social Psychology, 96,* 1029–1046. http://dx.doi.org/10.1037/a0015141

Greenberg, J., & Jonas, E. (2003). Psychological motives and political orientation—the left, the right, and the rigid: Comment on Jost et al. (2003). *Psychological Bulletin, 129,* 376–382. http://dx.doi.org/10.1037/0033-2909.129.3.376

Guess, A., Nyhan, B., & Reifler, J. (2018). *Selective exposure to misinformation: Evidence from the consumption of fake news during the 2016 U.S. presidential campaign*. Retrieved from http://www-personal.umich.edu/~bnyhan/fake-news-2016.pdf

Hayes, A. F. (2018). *Introduction to mediation, moderation, and conditional process analysis: A regression-based approach* (2nd ed.). New York, NY: Guilford Press.

Hedges, L. V., & Vevea, J. L. (1998). Fixed-and random-effects models in meta-analysis. *Psychological Methods, 3,* 486–504. http://dx.doi.org/10.1037/1082-989X.3.4.486

Higgins, E. T. (1998). The aboutness principle: A pervasive influence on human inference. *Social Cognition, 16,* 173–198. http://dx.doi.org/10.1521/soco.1998.16.1.173

Jost, J. T. (2006). The end of the end of ideology. *American Psychologist, 61,* 651–670. http://dx.doi.org/10.1037/0003-066X.61.7.651

Jost, J. T. (2017). Ideological asymmetries and the essence of political psychology. *Political Psychology, 38,* 167–208. http://dx.doi.org/10.1111/pops.12407

Jost, J. T., & Amodio, D. M. (2012). Political ideology as motivated social cognition: Behavioral and neuroscientific evidence. *Motivation and Emotion, 36,* 55–64. http://dx.doi.org/10.1007/s11031-011-9260-7

Jost, J. T., Glaser, J., Kruglanski, A. W., & Sulloway, F. J. (2003). Political conservatism as motivated social cognition. *Psychological Bulletin, 129,* 339–375. http://dx.doi.org/10.1037/0033-2909.129.3.339

Jost, J. T., & Krochik, M. (2014). Ideological differences in epistemic motivation: Implications for attitude structure, depth of information processing, susceptibility to persuasion, and stereotyping. In A. J. Elliot (Ed.), *Advances in motivation science* (Vol. 1, pp. 181–231). San Diego, CA: Elsevier. http://dx.doi.org/10.1016/bs.adms.2014.08.005

Jost, J. T., Sterling, J., & Stern, C. (2018). Getting closure on conservatism, or the politics of epistemic and existential motivation. In C. Kopetz & A. Fishbach (Eds.), *The motivation-cognition interface, from the lab to the real world: A festschrift in honor of Arie W. Kruglanski* (Vol. 1, pp. 56–87). New York, NY: Routledge.

Jost, J. T., van der Linden, S., Panagopoulos, C., & Hardin, C. D. (2018). Ideological asymmetries in conformity, desire for shared reality, and the spread of misinformation. *Current Opinion in Psychology, 23,* 77–83. http://dx.doi.org/10.1016/j.copsyc.2018.01.003

Judd, C. M., Westfall, J., & Kenny, D. A. (2017). Experiments with more than one random factor: Designs, analytic models, and statistical power. *Annual Review of Psychology, 68,* 601–625. http://dx.doi.org/10.1146/annurev-psych-122414-033702

Koriat, A. (2008). Subjective confidence in one's answers: The consensuality principle. *Journal of Experimental Psychology: Learning, Memory, and Cognition, 34,* 945–959. http://dx.doi.org/10.1037/0278-7393.34.4.945

Koriat, A. (2012). The self-consistency model of subjective confidence. *Psychological Review, 119,* 80–113. http://dx.doi.org/10.1037/a0025648

Koriat, A., & Ackerman, R. (2010). Choice latency as a cue for children's subjective confidence in the correctness of their answers. *Developmental Science, 13,* 441–453. http://dx.doi.org/10.1111/j.1467-7687.2009.00907.x

Krochik, M., Jost, J. T., & Nosek, B. A. (2007, June). *Ideology informs structure: Social and motivational influences on the attitudinal strength of liberals and conservatives*. Paper presented at the annual meeting of the International Society of Political Psychology, Portland, Oregon.

Kruger, J., & Dunning, D. (1999). Unskilled and unaware of it: How difficulties in recognizing one's own incompetence lead to inflated self-assessments. *Journal of Personality and Social Psychology, 77,* 1121–1134. http://dx.doi.org/10.1037/0022-3514.77.6.1121

Kruglanski, A. W. (1980). Lay epistemo-logic—process and contents: Another look at attribution theory. *Psychological Review, 87,* 70–87. http://dx.doi.org/10.1037/0033-295X.87.1.70

Kruglanski, A. W. (1989). *Lay epistemics and human knowledge: Cognitive and motivational bases*. New York, NY: Plenum Press. http://dx.doi.org/10.1007/978-1-4899-0924-4

Kruglanski, A. W., Pierro, A., Mannetti, L., & De Grada, E. (2006). Groups as epistemic providers: Need for closure and the unfolding of group-centrism. *Psychological Review, 113,* 84–100. http://dx.doi.org/10.1037/0033-295X.113.1.84

Kruglanski, A. W., & Webster, D. M. (1996). Motivated closing of the mind: "seizing" and "freezing". *Psychological Review, 103,* 263–283. http://dx.doi.org/10.1037/0033-295X.103.2.263

Kunda, Z. (1990). The case for motivated reasoning. *Psychological Bulletin, 108,* 480–498. http://dx.doi.org/10.1037/0033-2909.108.3.480

Lakens, D., & Etz, A. J. (2017). Too true to be bad: When sets of studies with significant and nonsignificant findings are probably true. *Social Psychological and Personality Science, 8,* 875–881. http://dx.doi.org/10.1177/1948550617693058

Lichtenstein, S., Fischhoff, B., & Phillips, L. D. (1982). Calibration of probabilities: The state of the art to 1980. In D. Kahneman, P. Slovic, & A. Tversky (Eds.), *Judgment under uncertainty: Heuristics and biases*. Cambridge, UK: Cambridge University Press. http://dx.doi.org/10.1017/CBO9780511809477.023

Locander, W. B., & Hermann, P. W. (1979). The effect of self-confidence and anxiety on information seeking in consumer risk reduction. *Journal of Marketing Research, 16,* 268–274. http://dx.doi.org/10.1177/002224377901600211

McShane, B. B., & Böckenholt, U. (2017). Single-paper meta-analysis: Benefits for study summary, theory testing, and replicability. *Journal of Consumer Research, 43,* 1048–1063. http://dx.doi.org/10.1093/jcr/ucw085

Mills, J., Meltzer, R., & Clark, M. (1977). Effect of number of options on recall of information supporting different decision strategies. *Personality and Social Psychology Bulletin, 3,* 213–218. http://dx.doi.org/10.1177/014616727700300211

Moore, D. A., & Healy, P. J. (2008). The trouble with overconfidence. *Psychological Review, 115,* 502–517. http://dx.doi.org/10.1037/0033-295X.115.2.502

Okimoto, T. G., & Gromet, D. M. (2016). Differences in sensitivity to deviance partly explain ideological divides in social policy support. *Journal of Personality and Social Psychology, 111,* 98–117. http://dx.doi.org/10.1037/pspp0000080

Ortoleva, P., & Snowberg, E. (2015). Overconfidence in political behavior. *The American Economic Review, 105,* 504–535. http://dx.doi.org/10.1257/aer.20130921

Pennycook, G., & Rand, D. G. (2018). Lazy, not biased: Susceptibility to partisan fake news is better explained by lack of reasoning than by motivated reasoning. *Cognition, 188,* 39–50.

Peterson, D. K., & Pitz, G. F. (1988). Confidence, uncertainty, and the use of information. *Journal of Experimental Psychology: Learning, Memory, and Cognition, 14,* 85–92. http://dx.doi.org/10.1037/0278-7393.14.1.85

Pew Research Center. (2017). *The partisan divide on political values grows even wider*. Retrieved from https://www.people-press.org/2017/10/05/the-partisan-divide-on-political-values-grows-even-wider/

Proulx, T., & Brandt, M. J. (2017). Beyond threat and uncertainty: The underpinnings of conservatism. *Social Cognition, 35,* 313–323. http://dx.doi.org/10.1521/soco.2017.35.4.313

Rhodes, M. G., & Castel, A. D. (2009). Metacognitive illusions for auditory information: Effects on monitoring and control. *Psychonomic Bulletin & Review, 16,* 550–554. http://dx.doi.org/10.3758/PBR.16.3.550

Roets, A., & Van Hiel, A. (2007). Separating ability from need: Clarifying the dimensional structure of the Need for Closure Scale. *Personality and Social Psychology Bulletin, 33,* 266–280. http://dx.doi.org/10.1177/0146167206294744

Sah, S., Moore, D. A., & MacCoun, R. J. (2013). Cheap talk and credibility: The consequences of confidence and accuracy on advisor credibility and persuasiveness. *Organizational Behavior and Human Decision Processes, 121,* 246–255. http://dx.doi.org/10.1016/j.obhdp.2013.02.001

Schönbrodt, F. D., & Perugini, M. (2013). At what sample size do correlations stabilize? *Journal of Research in Personality, 47,* 609–612. http://dx.doi.org/10.1016/j.jrp.2013.05.009

Schwardmann, P., & van der Weele, J. (2019). Deception and self-deception. *Nature Human Behaviour, 3,* 1055–1061. http://dx.doi.org/10.1038/s41562-019-0666-7

Schwarz, N. (2004). Metacognitive experiences in consumer judgment and decision making. *Journal of Consumer Psychology, 14,* 332–348. http://dx.doi.org/10.1207/s15327663jcp1404_2

Skitka, L. J. (2010). The psychology of moral conviction. *Social and Personality Psychology Compass, 4,* 267–281. http://dx.doi.org/10.1111/j.1751-9004.2010.00254.x

Skitka, L. J., Bauman, C. W., & Sargis, E. G. (2005). Moral conviction: Another contributor to attitude strength or something more? *Journal of Personality and Social Psychology, 88,* 895–917. http://dx.doi.org/10.1037/0022-3514.88.6.895

Taber, C. S., & Young, E. (2013). Political information processing. In L. Huddy, D. O. Sears, & J. S. Levy (Eds.), *The Oxford handbook of political psychology* (2nd ed., pp. 525–558). Oxford, UK: Oxford University Press. http://dx.doi.org/10.1093/oxfordhb/9780199760107.013.0017

Tajfel, H., Billig, M. G., Bundy, R. P., & Flament, C. (1971). Social categorization and intergroup behaviour. *European Journal of Social Psychology, 1,* 149–178. http://dx.doi.org/10.1002/ejsp.2420010202

Toftness, A. R., Carpenter, S. K., Geller, J., Lauber, S., Johnson, M., & Armstrong, P. I. (2018). Instructor fluency leads to higher confidence in learning, but not better learning. *Metacognition and Learning, 13,* 1–14. http://dx.doi.org/10.1007/s11409-017-9175-0

Toner, K., Leary, M. R., Asher, M. W., & Jongman-Sereno, K. P. (2013). Feeling superior is a bipartisan issue: Extremity (not direction) of political views predicts perceived belief superiority. *Psychological Science, 24,* 2454–2462. http://dx.doi.org/10.1177/0956797613494848

Tormala, Z. L., Petty, R. E., & Briñol, P. (2002). Ease of retrieval effects in persuasion: A self-validation analysis. *Personality and Social Psychology Bulletin, 28,* 1700–1712. http://dx.doi.org/10.1177/014616702237651

Van Hiel, A., Onraet, E., Crowson, H. M., & Roets, A. (2016). The relationship between right-wing attitudes and cognitive style: A comparison of self-report and behavioural measures of rigidity and intolerance of ambiguity. *European Journal of Personality, 30,* 523–531. http://dx.doi.org/10.1002/per.2082

von Hippel, W., & Trivers, R. (2011). The evolution and psychology of self-deception. *Behavioral and Brain Sciences, 34,* 1–16. http://dx.doi.org/10.1017/S0140525X10001354

Wagner, B. C., Briñol, P., & Petty, R. E. (2012). Dimensions of metacognitive judgment: Implications for attitude change. In P. Briñol & K. DeMarree (Eds.), *Social metacognition* (pp. 43–61). New York, NY: Psychology Press.

Wegener, D. T., Downing, J., Krosnick, J. A., & Petty, R. E. (1995). Measures and manipulations of strength-related properties of attitudes: Current practice and future directions. In R. E. Petty and J. A. Krosnick (Eds.), *Attitude strength: Antecedents and consequences* (Vol. 4, pp. 455–487). Hillsdale, NJ: Erlbaum.

Wilson, G. D., Ausman, J., & Mathews, T. R. (1973). Conservatism and art preferences. *Journal of Personality and Social Psychology, 25,* 286–288. http://dx.doi.org/10.1037/h0033972

Wojcik, S. P., & Ditto, P. H. (2015). *Conservative self-enhancement*. Retrieved from https://ssrn.com/abstract=2622348

Zmigrod, L., Rentfrow, P. J., & Robbins, T. W. (2020). The partisan mind: Is extreme political partisanship related to cognitive inflexibility? *Journal of Experimental Psychology: General, 149,* 407–418.

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