The Confident Conservative:

Ideological Differences in Judgment and Decision-Making Confidence

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Abstract

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 13 studies (total $N =$

4,346), we find that political conservatives exhibit greater judgment and decision-making

confidence than do political liberals. We find that these effects manifest across a wide range of

judgment tasks, including both memory recall and "in the moment" judgments. We also find that

these effects are robust across different measures of confidence and across both easy and hard

tasks. Further, we find that these confidence differences are explained in part by ideological

differences in closure-directed cognition. Specifically, conservatives (vs. liberals) 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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"The essence of the liberal outlook lies not in what opinions are held, but in how they are held: instead of being held dogmatically, they are held tentatively, and with a consciousness that new evidence may at any moment lead to their abandonment."

Bertrand Russell

The 2016 U.S. Presidential Election cycle was distinct in recent American history, witnessing an unprecedented level of partisan animosity and culminating in the election of the most polarizing president in the modern political era (Pew Research Center, 2018). Beyond these widely discussed factors, however, the election cycle was also unique for the sharp divergence that it revealed between liberals' and conservatives' political cognition and behavior. Despite a strong start, Senator Bernie Sanders faltered in his race for the Democratic nomination. Although he was viewed as the more progressive candidate and had substantial grassroots support (Confessore & Haberman, 2015; Gambino & Jacobs, 2015; Pollard & Mendolsohn, 2016), Democrats ultimately nominated a centrist candidate with strong establishment ties, Hillary Clinton. Some have argued that a lack of confidence among liberals is to blame for Sanders' political loss, and that liberals' concern that Sanders would ultimately be unable to win the election led them to either cast their vote for Clinton or not to vote at all (Cillizza & Enten, 2018; Shephard, 2019; Weigel, 2019).

Donald Trump, conversely, followed a very different political path. Although he was openly opposed by many high-profile Republican leaders (Yourish, Buchanan, & Parlapiano,

2016), Trump defied the polls (Ceaser, Busch, & Pitney, 2017) to receive the Republican

Presidential nomination and, ultimately, win the presidency. Trump's surprising political

success, in no small part, was driven by the unwavering confidence of his supporters: despite the

apparently overwhelming odds, the opposition from Republican leadership, and the emergence

of a number of political scandals (Leonhardt, 2018), Trump's support among American

conservatives has been remarkably—and unprecedentedly—stable (Pew Research Center, 2018).

The sharp divergence in confidence that liberals and conservatives exhibited for Sanders

and Trump, respectively, appears to have played a central role in the differing political fortunes

of these two figures. But was this confidence gap specific to these particular political candidates

or this specific election? Or might this represent a deeper psychological difference between those

on the right and left that might extend beyond the political realm? In the present research, we

explore this question, examining whether liberals and conservatives may differ broadly in the

degree of confidence that they feel in their judgments and decisions.

Confidence—the meta-cognitive 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 (Wagner, Briñol, & Petty, 2012). In the political

realm, more confident individuals have been shown to hold more extreme viewpoints and to be

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). Thus, investigating whether

liberals and conservatives consistently differ in their levels of judgment confidence holds

important implications for understanding how political belief systems shape basic social

cognition and everyday decision making.

We examined three questions in the present research. First, we tested whether there are

general ideological differences in confidence by examining whether conservatives (versus

liberals) exhibit greater confidence in their basic (i.e., nonpolitical) judgments, perceptions, and

beliefs. Second, we examined potential boundary conditions of this effect and whether this

conservative "confidence advantage" would emerge across a wide range of judgment domains.

Third, we examined the psychological mechanism behind this effect. Specifically, we

investigated whether ideological asymmetries in motivations to make rapid judgments and avoid

deliberation would account for subjective confidence differences between liberals and

conservatives.

Ideological Differences in Epistemic Motivation

The conflict between the political right and left appears to have been intensifying in

recent decades, with increased polarization, heightened animosity, and less willingness to "reach

across the aisle" to engage with those of the opposing ideology (Pew Research Center, 2017).

However, although these political divisions appear to have been particularly tense in recent

years, the divide between the political right and left is nothing new. Indeed, more than 70 years

of research has highlighted robust differences in the basic psychological motivations and goals of

liberals and conservatives. In particular, several large-scale meta-analyses have found that people

who are more politically conservative (versus liberal) tend to possess chronically stronger

"epistemic" motivations to achieve a sense of certainty, stability, and structure in everyday life

(Jost, Glaser, Kruglanski, & Sulloway, 2003; Jost, Sterling, & Stern, 2018). Further, these

motivations are "domain general," meaning that they do not simply impact political behavior but

instead also guide the ways in which liberals and conservatives engage with non-political aspects of the world.

Research examining the relationship between ideology and psychological motivations has taken numerous forms, and epistemic motivations have been operationalized in a variety of different ways (e.g., need for certainty, personal need for structure, intolerance of uncertainty, need for closure). Importantly, however, previous research linking ideology to epistemic motivation has generally centered around the broad construct of "intolerance of ambiguity" (Van Hiel, Onraet, & De Pauw, 2010; 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 the situation (i.e., the appropriate action in a new situation is often unclear), the complexity of the situation (i.e., too many available cues/inputs make the appropriate response difficult to identify), or the (in)solubility of the situation (i.e., more difficult problems require more difficult behavioral responses; Budner, 1962).

Research suggests that political conservatives tend to be more averse to ambiguity than are liberals, and to experience greater discomfort and anxiety when faced with ambiguous situations or stimuli. The relationship between conservativism and avoidance of ambiguity has been documented using various means, including both self-report and behavioral measures (for reviews, see Van Hiel et al., 2010, 2016). For example, political conservatives display lower acceptance of ambiguous or atypical exemplars of a category (Okimoto & Gromet, 2016; Stern & Rule, 2018), are quicker to establish habitual response patterns when faced with ambiguous tasks (Block & Block, 1951; Millon 1957; Zacker 1973), and exhibit less ambiguity in their

categorization of common objects, tending to see the world as falling into distinct, "black-and-white" categories (Young, 2011).

Conservatives' greater dislike of ambiguity leads them, on average, to prioritize making 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 than liberals 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 than do liberals.

Ease of Processing and Subjective Confidence

The extent to which people make rapid and efficient judgments as a means of resolving ambiguity in their environment may, in turn, impact how confident they feel in those judgments. As noted above, confidence refers to the meta-cognitive judgment that one's belief, decision, or response is objectively accurate or correct (Dunning, 2012; Peterson & Pitz, 1988). While people's confidence judgements sometimes correspond to the objective accuracy of their judgments and decisions (Dunning, 2012; Lichtenstein, Fischhoff, & Phillips, 1982; Moore & Healy, 2008), the strength of this association is often surprisingly modest or even nonexistent (Koriat, 2008, 2012). Thus, people's meta-cognitive appraisals concerning the accuracy of their judgments can be shaped by factors other than the veridicality 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 was the correct one. 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). This lay belief is likely based in the fact that in many real-life judgment domains (e.g., declarative knowledge such as trivia questions and other factual information), responses that take less time and effort to generate *do* tend to be more accurate (Koriat, 2008; Koriat & Ackerman, 2010; Robinson, Johnson & Herndon, 1997; Sporer, 1993).

Importantly, however, 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 et al., 2007), information that is cognitively taxing to process (e.g., lower- versus 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 et al., 2018) all lead people to feel less subjectively confident without impacting the actual accuracy of their responses. Thus, judgments that are made in a quick and efficient manner 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 will tend to generally possess greater confidence in their judgments and decisions than will liberals. Specifically, to the extent that conservatives possess a stronger motivation to resolve ambiguity,

we anticipate that they will make more rapid and efficient judgments and, in turn, will tend to feel greater certainty that the judgments they have made are accurate.

Some previous research tentatively hints at this possibility. In one unpublished study described in Jost and Krochik (2014), Krochik, Jost and Nosek (2007) assessed participants' preferences for various pairs of objects or concepts (e.g., cats vs. dogs, love vs. money). They found that more 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 political conservatives expressed greater confidence in two types of political knowledge (unemployment and inflation rates in the U.S.), as well as four non-political 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 confidence. However, because these studies were limited to only 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. Previous research has also not examined the psychological mechanism(s) that may underlie this effect. We directly address these questions in the present research.

Political Conservatism Versus Ideological Extremity

In the present studies, we examine the question of whether directional ideology (i.e., a person's degree of liberalism/conservatism) shapes judgment and decision-making confidence. However, some previous research has suggested that political extremity (rather than ideology)

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, Bauman, & Sargis, 2005) and feel that their political beliefs are superior to those of

others (Toner, Leary, Asher, & Jongman-Sereno, 2013). Importantly, however, because these

studies are generally limited to the political domain (and typically only to a subset of "hot-

button" political issues; e.g., Toner et al., 2013), they cannot answer the question of whether

more ideologically extreme individuals tend to feel that their beliefs are superior *in general*.

Further, because these studies have generally not directly assessed confidence, they cannot speak

to our present hypothesis. Nevertheless, this past research raises the question of whether it may

be ideological extremity, rather than conservatism, that might be associated with greater

judgment and decision-making confidence. To directly address this question, we measure both

conservatism and ideological extremity and examine their associations with confidence across a

wide range of basic, nonpolitical judgment and decision-making tasks, allowing us to determine

whether conservatism or extremity (or both) is associated with greater confidence.

The Present Research

Across 13 studies (total $N = 4,346$), we test the prediction that political conservatives will

exhibit greater subjective confidence across a range of basic judgment and decision-making

domains, and that the motivation to make rapid and efficient judgments will, at least in part,

explain the conservatism-confidence relationship. In Studies 1A-1F, we test 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 test a possible boundary condition of this relationship, examining whether task complexity

impacts the relationship between conservatism and confidence. In Studies 3A and 3B, we examine whether the conservatism-confidence relationship is limited to subjective feelings of confidence, or whether the relationship also emerges in other related judgments (e.g., probability estimates). In Study 4, we test whether the conservatism-confidence relationship emerges even when participants are provided with an objective benchmark by which to evaluate their responses. Finally, we examine the mechanism behind the conservatism-confidence relationship. In Study 5A, we examine the explanatory role of self-reported motivation to make quick and efficient judgments. In Study 5B, we provide convergent evidence for our proposed mechanism using a behavioral measure that indexes the degree of deliberative thought individuals employ before making a judgment. All study materials, data, syntax, and preregistration information are available at [OSF LINK REDACTED].

Analytic Strategy and Statistical Power

We preregistered eight of our 13 studies (Studies 1C, 1D, 2A, 3A, 3B, 4, 5A, and 5B). 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 the results of the regression analyses in the main text and include the results of the mixed models in the supplementary information (SI). Both sets of results are nearly identical. For regression analyses, all predictors are grand mean centered, and we report standardized beta weights. We list all predictors and control variables that were included in the models (if no covariates are stated, none were included). We do not exclude any participants. All participants who provided complete, analyzable data are included in analyses.

We took four approaches to maximizing statistical power in the present research. All of these approaches are consistent with current recommendations for best practices. First, we

conducted power analyses to determine sample sizes for all studies after Study 1A. Additionally, we utilized observed effect sizes in power analyses to ensure that our studies programmatically progressed in a highly powered manner. Second, we collected large sample sizes to obtain stable observations of effect sizes, based on simulation studies indicating that correlational effect sizes tend to achieve stability at sample sizes of around 250 participants (Schönbrodt & Perugini, 2013). Twelve of our thirteen 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 SI) 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. Because our prediction was that there would be general ideological differences in subjective confidence, we included a wide range of different paradigms, which were designed to assess people's confidence in their most basic perceptions, judgments, and decisions. As such, these tasks differed on a number of dimensions (e.g., quantitative vs. non-quantitative; memory recall vs. in-the-moment judgments) and included both more naturalistic judgments (e.g., memories from everyday life) as well as more controlled judgments (e.g., a dot estimation task). Unlike past research, which has disproportionately chosen to examine individual differences in confidence within only a single domain (usually trivia-style general knowledge questions; Moore & Healy, 2008), using this broad range of paradigms allows us to more decisively conclude that any observed ideological differences in confidence are not specific to any particular decision domain or type of judgment.

To further ensure the generalizability of any observed effects, we also collected data from a range of different participant samples.

Study 1A

In Study 1A, we conducted an initial test of our hypothesis that political conservatives would exhibit greater confidence in their judgments and decisions than would liberals. We created 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% women; $M_{age} = 33.07$, $SD = 8.08$) from Amazon's Mechanical Turk, an online platform where people complete short tasks in exchange for payment (for a discussion of Mechanical Turk as a research tool, see Buhrmester, Kwang, & Gosling, 2011). This sample size provided 80% power to detect an effect as small as $r = .22$. All power analyses were conducted using G Power 3.1 (Faul, Erdfelder, Lang, & Buchner, 2007).

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 their favorite restaurant. Full materials are available at the OSF site for this project. 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 at all confident*) to 9 (*very confident*), with the midpoint, 5, labeled "somewhat confident." This measure is adapted from previous research (Briñol, Petty, Valle, Rucker, & Becerra, 2007).

Political ideology. Participants provided information about 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 ($\alpha = .95$) to calculate a single ideology score for each participant ($M = 3.40$, $SD = 1.68$).

Ideological extremity. We measured extremity in three ways: (1) Following past research (Brandt, Evans & Crawford, 2015), we "folded over" the ideology scale to measure the distance from participants' reported ideology to the midpoint of the scale, resulting in a 4-point extremity scale ranging from 0 (*moderate*) to 4 (*extremely* [*liberal/conservative*]); (2) Participants answered the question "How important is politics to you personally?" on a scale from 1 (*extremely unimportant*) to 7 (*extremely important*); (3) Finally, participants were asked to indicate 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 (nearly identical

results are obtained if these responses are instead recoded as a "1" for confidence). These 12 confidence judgments were reliable ($\alpha = .81$), and so we averaged them into a single index of confidence.

Consistent with our hypothesis, we found that political ideology significantly predicted confidence ($\beta = .20$, $t(158) = 2.56$, $p = .01$), 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; $\beta = .18$, $t(152) = 2.29$, $p = .02$), 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 information about analyses with demographic variables is provided in the SI for interested readers.

We then examined the relationship between ideological extremity and confidence. We found that none of the three measures of ideological extremity were significantly associated with confidence (ps > .24). We also averaged these three extremity measures into a single index of ideological extremity. This measure was also not associated with confidence ($p = .30$). Further, we found that the relationship between conservatism and confidence remained significant when controlling for ideological extremity (controlling for the mean of the three extremity measures: $\beta = 0.19$, $t(157) = 2.47$, $p = 0.01$; controlling for all three measures of extremity: $\beta = .18$, $t(155) = 2.11$, $p = 0.04$). Ideological extremity does not explain our effects in this or any subsequent study and is therefore not discussed further in the main text. Further information, detailed results, and meta-analytic effect sizes for the relationship between extremity and confidence are provided in the SI for interested readers.

Study 1B

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 of the conservatism-confidence relationship 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

To determine the sample size for this study, we conducted a power analysis based on an expected correlation of $r = .19$ (the effect size from Study 1A). This resulted in a recommended sample size of 212 to achieve 80% power, which we increased to 250 to maximize statistical power. This target sample size was used for all remaining studies in which we examined the basic association (i.e., did not examine moderating factors) between conservatism and confidence (Studies 1B, 1D, 1E, 1F, 3A, 3B, and 4).[1] Based on this power analysis, for this study we requested 250 participants from Mechanical Turk. We received 249 complete responses (50% women; $M_{age} = 37.57$, $SD = 13.09$).

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). These photos were chosen so that there would

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

be no uncertainty about what task participants were expected to perform, and because these photographs contained no political content (all images are available on the OSF site).

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 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 seconds 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-second limit and encouraging them to make their responses more quickly (0.8% of all responses were not made within the allotted time). Participants then continued with the survey. After providing each estimate, they reported their level of confidence in their response using the same confidence measure used in Study 1A. Participants' confidence judgments were reliable ($\alpha = .89$), so we averaged them into a single index of confidence. Lastly, participants reported their political orientation ($M = 4.73$, $SD = 2.42$) using the general political orientation item from Study 1A: "Where on the following scale of political orientation would you place yourself?", measured on 1 (*extremely conservative*) to 9 (*extremely liberal*) scale. Similar single-item measures of ideology have been widely used and validated in past research (e.g., Graham, Haidt, & Nosek, 2009; Jost, 2006). We use this measure in all subsequent studies.

Results

We again found that political ideology predicted confidence ($\beta = .15$, $t(247) = 2.33$, $p = .02$), with more conservative participants expressing greater certainty in their judgments. These

results provided further support for the hypothesized association between conservatism and

confidence and also demonstrated that this relationship was not specific to recollection-based

judgments.

Study 1C

Study 1B provided additional support for the conservatism-confidence link. However, a

post-hoc power analysis revealed that our achieved/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 participants from Mechanical Turk.

Participants

We collected 916 participants from a research participant panel managed by Qualtrics

(83% women, M_{age} = 35.79, SD = 13.19).[2] This sample size provided us with 99.5% power to

detect an effect of the size observed in Study 1B (r = .15).

Procedure

Participants first completed a short task that was preregistered for usage 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. Participants' confidence judgments

were reliable (α = .87), and so we averaged them into a single index of confidence. Lastly,

participants indicated their political orientation (M = 5.05, SD = 2.05) and provided demographic

information.

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

Results

Replicating Study 1B, political ideology predicted confidence ($\beta = .13$, $t(910) = 4.03$, p < .001), with more conservative individuals expressing greater certainty in their distance judgments. Observed power in this study was 98.2%. These results provide further support for the hypothesized association between conservatism and confidence, while demonstrating that this effect is not specific to participants from Mechanical Turk.

Study 1D

In Study 1D, we further examined the nature and extent of the conservatism-confidence relationship, while testing possible alternative explanations for this association. 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 ideological differences in accuracy. That is, it may be that conservatives are truly more accurate in their distance estimates and memories of everyday life, and this explains their greater confidence in their judgments. To address this possibility, in this study we used a task in which we could also assess objective accuracy. Specifically, we used a modified version of our previous distance estimation paradigm in which participants were asked to estimate distances in the real world. Using this task also allowed us to examine whether the observed ideological differences in confidence would emerge in a more naturalistic judgment context. Additionally, in this study we collected a different participant sample (college students, university staff, and community members) to ensure that the conservatism-confidence association generalized beyond the online samples that we recruited previously. Because there are a large number of international students, faculty, and staff on the university campus where we conducted this study, this sample also allowed us to examine

whether the relationship between conservatism and confidence emerged among participants from countries other than the United States.

Participants

We recruited students, teachers, staff, and community members from a popular pedestrian thoroughfare on a university campus in the northeastern United States. Based on the power analysis described in Study 1B, we collected 250 participants (38% women, $M_{age} = 23.16$, $SD = 8.31$).

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 meters away), a blue lightpost (218.08 feet/66.47 meters away), and a clocktower (346.17 feet/105.51 meters away). Because we expected a large number of participants from outside the U.S., we allowed people to make their distance judgments using either feet or meters, to rule out any possible confounds that could arise regarding familiarity with the measurement system. After making each estimate, participants rated their confidence in their response on the same 9-point scale as in the previous studies. Participants' confidence judgments were highly reliable ($\alpha = .97$), so we averaged them into a single index of confidence. 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 predicted confidence ($\beta = .47$, $t(248) = 8.46$, $p < .001$), with more conservative participants expressing 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 ($\alpha = .72$) and averaged them into a single index of objective accuracy. 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 and confidence ($\beta = .48$, $t(247) = 8.47$, $p < .001$). Further, we found that the strength of the conservatism-confidence relationship was not moderated by whether or not the participant was born in the U.S. ($p = .38$). Rather, the association emerged to a similar degree both for individuals from the U.S. ($n = 157$; $\beta = .51$, $t(155) = 7.02$, $p < .001$) and those from other nations ($n = 93$, $\beta = .40$, $t(91) = 4.21$, $p < .001$), suggesting that the association between conservatism and judgment confidence is not limited to participants from the United States.

Study 1E

Studies 1A-1D provided consistent support for the hypothesized association between conservatism and confidence using three different judgment paradigms, including recollections of everyday environments as well as in-the-moment distance judgments from both static images and real life. 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 we asked participants to estimate various quantities of dots presented on a computer screen. This task allowed us to remove some of the complexity present in the previous paradigms and examine whether this effect would emerge in even more basic

judgments. Additionally, this task again allowed us to assess participants' objective accuracy to

further verify that ideological differences in task performance could not explain the observed

relationships.

Participants

Following the power analysis outlined in Study 1B, we set a target sample size of 250

participants, whom we recruited from Mechanical Turk. We received 251 responses (57%

women, $M_{age} = 37.40$, $SD = 11.58$).

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 229). 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. Once again, we

included a timer on the task (15 seconds) 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 confidence measure as in the previous

studies. Participants' confidence judgments were highly reliable ($\alpha = .90$), and so we averaged

them into a single index of confidence. They then provided information about their political

ideology ($M = 4.54$, $SD = 2.31$) and demographics.

Results

Political ideology was associated with confidence ($\beta = .24$, $t(248) = 3.85$, $p < .001$), 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 (i.e., greater deviation from the

correct answer). We then z-scored these three accuracy values ($\alpha = .69$) and averaged them into a

single index of objective accuracy. Conservatism significantly predicted *lower* accuracy ($\beta =$

$-.16$, $t(248) = 2.55$, $p = .01$), and the relationship between conservatism and confidence remained

significant when adjusting for accuracy ($\beta = .23$, $t(247) = 3.72$, $p < .001$).

Study 1F

In Study 1F, we examined the conservatism-confidence relationship in yet another

judgment domain to further test the breadth of this effect. Most of our previous studies (with the

exception of Study 1) used tasks involving numerical judgments (i.e., estimates of quantities and

distance). As such, in this study, we examined confidence in another non-numerical type of

judgment to further verify that these ideological differences in confidence would extend to other

forms of judgment and decision-making as well.

Participants

Following the power analysis outlined in Study 1B, 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 (Figure 1). For each trial, participants were first given five

seconds to study the pattern. After five seconds, 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 confidence 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.

Figure 1. Sample pattern used in Study 1F.

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 ($p = .26$), and so we

therefore collapsed across the three confidence judgments to create a single index of confidence.

       We once again found that ideology was associated with confidence ($\beta = .20$, $t(248) =$

3.17, $p = .002$), with more conservative individuals expressing 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). Reliability

for these three accuracy scores was quite low ($\alpha = .19$), suggesting that accuracy on one trial was

only weakly related to accuracy on the other trials. However, there were no differences in the

strength of the relationship between ideology and accuracy as a function of the specific pattern (p = .37), and so we therefore collapsed across these three values to create a single index of accuracy. Importantly, conservatives were *not* more accurate in their responses (β = .04, $t(248)$ = 0.62, p = .54), and adjusting for accuracy did not attenuate the relationship between conservatism and confidence (β = .21, $t(247)$ = 3.48, $p < .001$).

Discussion: Studies 1A-1F

Studies 1A through 1F provided robust support for the hypothesized association between conservatism and confidence across a range of very different judgment domains. We found that conservatives were more confident across both controlled experimental studies (e.g., a dot estimation task) and more naturalistic decision-making contexts (e.g., real-world distance estimations); both simple tasks (e.g., estimating dots) and more complex judgments (recalling subtle objects and scenery from everyday life); and both numerical estimates (e.g., dots, distances) and non-numerical judgments (e.g., pattern memory).

Studies 2A and 2B

In Studies 2A and 2B, we tested a possible boundary condition of the conservatism-confidence link: whether a high degree of task difficulty is necessary for the association to emerge. That is, in our previous studies, the tasks that participants were asked to perform were likely to have been perceived as quite 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 and evaluation processes are most likely to emerge when tasks are ambiguous and difficult (versus

clear and simple; Kruglanski, 1980; Kunda, 1990). We therefore examined whether the conservatism-confidence relationship is constrained to highly difficult tasks.

Study 2A

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 229 dots in total), likely making this a difficult task for participants. To examine whether this high degree of difficulty may have amplified our effects, 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 Mechanical Turk (44% women, $M_{age} = 37.54$, $SD = 11.53$).

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 ten images, participants were first asked to estimate the number of dots on the screen, and then to indicate their degree of confidence in their estimate using the same confidence measure from the previous studies. As in Study 1E, we gave participants 15 seconds to make each judgment. On 25 trials (0.8% of all trials), the time limit expired before a judgment was made. Participants' confidence judgments were highly reliable ($\alpha = .95$), and so we averaged them into a single index of confidence. After the estimation task,

participants provided information about their political ideology ($M = 4.25$, $SD = 2.34$) and demographics.

Results

We replicated the relationship observed in our previous studies: ideology predicted 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 (i.e., greater deviation from the correct answer). We then z-scored these three accuracy values ($\alpha = .84$) and averaged them into a single index of objective accuracy. 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 ($\beta = .14$, $t(297) = 2.40$, $p = .02$).

To examine whether the difficulty of the task moderated the size of the conservatism-confidence relationship, we conducted a linear regression analysis with ideology, number of dots in each trial, and their interaction term specified as predictors, and confidence specified 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* moderate 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

The results of Study 2A demonstrate that the association between conservatism and confidence emerges not only under conditions of high task difficulty, but also on easier trials as well. In Study 2B, we conducted a conceptual replication and extension of Study 2A to more

conclusively determine whether a high degree of task difficulty is necessary for the

conservatism-confidence link to emerge. In Study 2A, 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

this study, we therefore used a between-subjects design in which participants were randomly

assigned to *either* a low or high task difficulty condition. To do so, we returned to the pattern

memory task from Study 1F. In our original study, participants were asked to indicate the color

of the missing square by clicking a point on a graded color wheel. Although there was an

objectively correct response for this task, the large number of possible response options

available—and the low probability of getting the answer exactly correct—are likely to have

made this task quite difficult for participants. In this study, participants were randomly assigned

to complete either this original (very difficult) task, or a simplified version of the task with a

limited number of response options. Based on the results of Study 2A, we predicted that

conservatism would predict greater confidence on both the difficult and easy versions of the task.

Participants

To determine the sample size for this study, 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

Mechanical Turk.

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 were asked to indicate the

color of the missing square. Those who had been randomly 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 had been randomly assigned to the low difficulty condition ($n = 209$) were asked to select the missing color from one of six discrete color options (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.
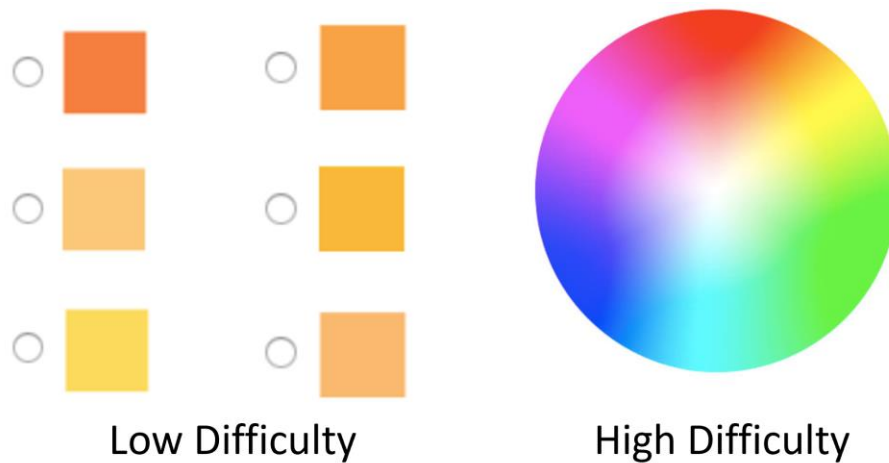

Figure 2. Response scales for the low and high difficulty conditions, Study 2B.

Results

As in our previous color pattern study (Study 1F), the reliability of participants' 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 therefore collapsed across the three confidence judgments to create a single index of confidence.

We again found that ideology predicted 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 for participants 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 2a. To assess accuracy for those in the low difficulty (discrete options) condition, we coded correct choices as "1" and incorrect choices as "0." 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 index of accuracy. There was no relationship between ideology and accuracy ($\beta = .01$, $t(398) = 0.09$, $p = .93$), and adjusting for accuracy did not attenuate the strength of the relationship between conservatism and confidence ($\beta = .18$, $t(397) = 3.59$, $p < .001$).

To examine whether the difficulty of the task moderated the size of 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, we again found that 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.

Discussion: Studies 2A and 2B

The results of these two studies further demonstrate the robustness of the association between conservatism and confidence. 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. However, 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 sought to examine another potential boundary condition of the conservatism-confidence relationship. Specifically, we examined whether it is limited to self-expressions of subjective confidence, or whether it would also emerge on other conceptually similar measures of certainty. That is, all of our previous studies used the same dependent measure, which assessed a subjective sense of certainty that one's answer, judgment, or response is objectively true and correct. In Studies 3A and 3B, we sought to expand on these studies by determining whether conservatives' greater confidence would emerge on another conceptually similar—but superficially distinct—measure of certainty. Specifically, we examined people's estimations of the objective probability that their judgment is correct.

Using a different assessment of confidence allowed us to further examine the extent of the conservatism-confidence link. We were also able to rule out an alternative explanation that there may be ideological differences in how the scale itself was interpreted. That is, even though the scale that we employed 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 "Somewhat confident"). Asking participants to instead provide estimates of the likelihood that their response is correct with a simple numerical probability estimate allows us to rule out this possible alternative explanation by avoiding subjective and valenced terms.

Study 3A

In Study 3A, we provided an initial test of whether conservatives' greater confidence would also emerge in their estimates of the objective probability that their judgment was correct. To examine this question, we returned to the color memory task from Study 2B.

Participants

Following the power analysis outlined in Study 1B, we set a target sample size of 250 participants, whom we recruited from Mechanical Turk. We received 249 complete responses.

Procedure

In this study, 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 in this study.

Results

We found that political ideology was significantly associated with likelihood estimates ($\beta = .15$, $t(245) = 2.30$, $p = .02$), with more conservative participants estimating a higher likelihood that their response was objectively correct. 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 (logistic regression: $B = -.02$, $\chi^2(1)$

= .07, p = .79), and adjusting for task accuracy did not attenuate the relationship between conservatism and confidence (β = .15, $t(244)$ = 2.30, p = .02).

Study 3B

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

Participants

Based on the power analysis outlined in Study 1B, we set a target sample size of 250 participants, whom we recruited from Mechanical Turk. We received 252 responses (38% women, M_{age} = 34.25, SD = 9.30).

Procedure

Participants completed the dot estimation task from Study 1D, 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, they rated the probability that their estimate was objectively correct, using the same measure from Study 3A. Participants' probability judgments were highly reliable (α = .95), so we averaged them into a single index. Lastly, participants indicated their political ideology (M = 4.04, SD = 2.15) and provided demographic information.

Results

Ideology marginally predicted probability judgments (β = .12, $t(250)$ = 1.87, p = .06), with conservatives estimating a greater probability that their responses were objectively 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 (i.e., greater deviation from the correct answer). We then z-scored these three accuracy values ($\alpha = .72$) and averaged them into a single index of objective accuracy. Conservatives were not more accurate in the task ($\beta = .10$, $t(250) = 1.54$, $p = .13$), and adjusting for accuracy did not attenuate the size of the conservatism-confidence relationship ($\beta = .12$, $t(249) = 1.85$, $p = .07$).

Discussion: Studies 3A and 3B

The results of Studies 3A and 3B demonstrated that the association between conservatism and confidence is not limited to measures of subjective confidence. These findings indicate that our previous findings 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, decisions, and beliefs.

Study 4

In Study 4, we examined whether differing interpretations of what it means to be "correct" may contribute to the conservatism-confidence relationship. That is, in all of our previous studies—both those assessing subjective confidence and those asking for probability estimates—we asked participants to indicate their certainty that their answer was objectively "correct." However, given the difficulty of getting these answers exactly correct (e.g., estimating the precise number of dots on the page), participants may have adopted less stringent criteria for what constituted a correct response. If liberals and conservatives differed in the stringency of the criteria that they adopted (e.g., if conservatives had a less strict definition of what it means to be correct), then this could explain our observed effects. To rule out this possibility, we used a modified version of the dot estimation task from Study 3B. In this study, rather than asking participants to judge the probability that they were "correct," we instead gave them an exact

benchmark by which they were 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 objective 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, whom we recruited from Mechanical

Turk. We received 253 responses (50% women, $M_{age} = 34.75$, $SD = 9.54$).

Procedure

Participants completed the dot estimation task from Study 3A, 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 were asked to provide their

judgment of the probability that their answer was *within ten dots* of the correct answer. They

provided their response on the same 0-100% scale as in Studies 3A and 3B. Probability

judgments were highly reliable ($\alpha = .91$), and so we averaged them into a single index. Lastly,

participants reported their political orientation ($M = 4.26$, $SD = 2.19$).

Results and Discussion

Ideology significantly predicted probability judgments ($\beta = .28$, $t(251) = 4.55$, $p < .001$),

with conservatives estimating a greater probability that their responses were within ten 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 (i.e., greater deviation from the correct answer). Reliability for these three accuracy

scores was quite low (α = .24), suggesting that accuracy on one trial was only weakly related to accuracy on the other trials. However, there were no differences in the strength of the relationship between ideology and accuracy as a function of the specific dot image (p = .50), and so we therefore collapsed across these three values to create a single index of accuracy. Conservatives were not more accurate in the task (β = -.10, $t(251)$ = 1.53, p = .13), and adjusting for accuracy did not attenuate the size of the conservatism-confidence relationship (β = .29, $t(250)$ = 4.75, p < .001). Thus, conservatism predicted greater confidence even when participants were given an exact benchmark by which to judge the correctness of their response.

Studies 5A and 5B

In Studies 5A and 5B, 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 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 5A

In Study 5A, 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 a 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. 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 us with an analyzable sample of 459 participants (52% women, $M_{age} = 38.55$, $SD = 13.69$; 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 participants' motivation to make quick and efficient judgments, they completed the 7-item decisiveness subscale of the need for closure scale using a 1 (*completely disagree*) to 7 (*completely agree*) 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."; Roets & Van Hiel, 2007). We created a composite by averaging across these items ($\alpha = .85$).

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 Studies 1A through 2B. On 226 trials (4.9% 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 index.

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

Results and Discussion

In our preregistered analysis plan, 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 ($\beta = .20$, $t(457) = 4.36$, $p < .001$), with more conservative participants expressing greater certainty in their estimates. As in our previous studies, 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 (i.e., greater deviation from the correct answer). Reliability for these ten accuracy scores was high ($\alpha = .90$), so we averaged them into a single index of accuracy. There was no association between ideology and accuracy ($\beta = .06$, $t(457) = 1.32$, $p = .19$), and adjusting for accuracy did not meaningfully attenuate the relationship between conservatism and confidence. ($\beta = .19$, $t(456) = 4.23$, $p < .001$).

We also found that greater conservatism predicted higher decisiveness scores ($\beta = .19$, $t(457) = 4.17$, $p < .001$). 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 10,000 bias-corrected bootstrap samples (Hayes, 2015). We considered the indirect effect to be significant if the 95% confidence interval did not contain zero. 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], suggesting that conservatives' greater confidence is, at least in part,

explained by their higher need to reach a rapid and final judgment (Figure 3).

Excluding participants who failed the attention check, the conservatism-confidence

association ($\beta = .16$, $t(340) = 2.89$, $p = .004$), the conservatism-decisiveness association ($\beta = .13$,

$t(340) = 2.34$, $p = .02$) and the indirect effect ($ab = .02$, $SE = .01$, 95% CI [.002, .04]) were also
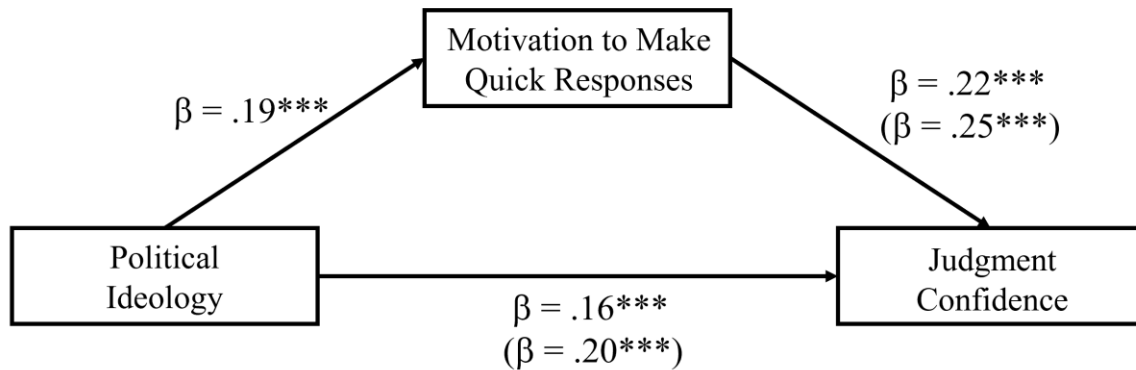
all significant.

Figure 3. Model illustrating conservatism predicting greater confidence through the motivation

for rapid judgments (Study 5A). Coefficients are standardized regression coefficients. Values in

parentheses represent direct relationships; values without parentheses represent relationships

after including all variables in the model.

Note: *** $p < .001$.

Study 5B

The results of Study 5A suggested that conservatives' greater need to reach a rapid and

final decision in part explained their greater levels of confidence. In Study 5B, we provided a

conceptual replication and extension of this effect using a behavioral measure of rapid and

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 in their judgments.

Participants

We preregistered a target sample size of $N = 350$, whom we recruited from Mechanical Turk (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% women, $M_{age} = 36.70$, $SD = 11.58$).

Procedure

Judgment confidence. Participants completed a single trial of the dot estimation task from Study 1E, 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 same 9-point confidence measure as in 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 were asked to enter these responses into a blank text box, or to click 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 predicted 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 (i.e., greater deviation from the correct answer). Conservatives were not more accurate in the task ($\beta = .04$, $t(343) = 0.84$, $p = .40$), and adjusting for accuracy did not attenuate the relationship between conservatism and confidence ($\beta = .18$, $t(342) = 3.35$, $p = .001$).

As predicted, we also found that more conservative participants listed fewer alternative response options ($\beta = -.14$, $t(343) = 2.71$, $p = .007$). This finding indicates that conservatives tended to seize and freeze on an earlier response, whereas more liberal participants tended to consider a broader range of response options before making their final 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 10,000 bias-corrected bootstrap samples (Hayes, 2015). 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]. Thus, conservatives' greater tendency to make rapid and final decisions explained, in part, their higher levels of judgment confidence (Figure 4).
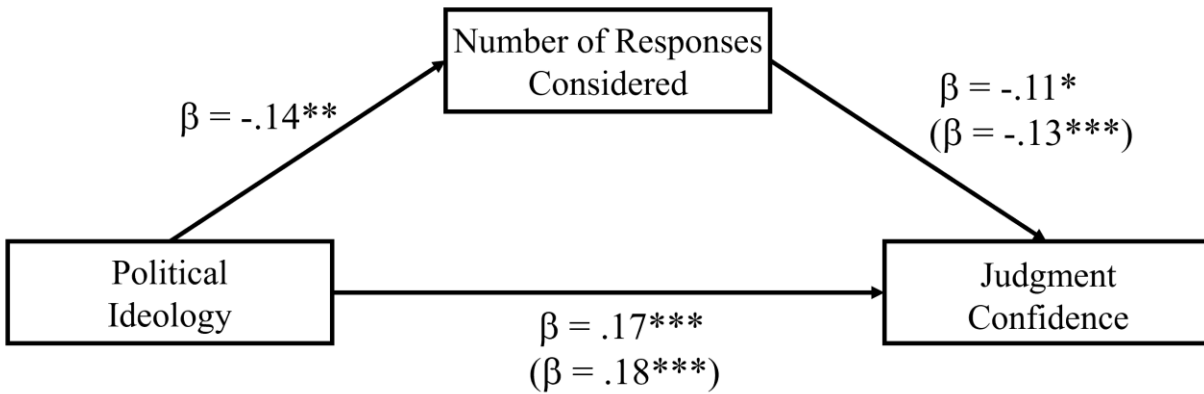
Figure 4. Model illustrating conservatism predicting greater confidence through the consideration of alternative responses (Study 5B). Coefficients are standardized regression coefficients. Values in parentheses represent direct relationships; values without parentheses represent relationships after including all variables in the model.

Note: * $p < .05$. ** $p < .01$ *** $p < .001$.

Internal Meta-Analysis

Following the recent best-practices recommendations of a number of researchers and statisticians (e.g., Goh, Hall, & Rosenthal, 2016; Lakens & Etz, 2017; McShane & Böckenholt), we conducted an internal, "within-paper" meta-analysis to optimize statistical power in determining the mean effect size of our studies (Braver, Thoemmes, & Rosenthal, 2017; Cohn & Becker, 2003). This analysis also allowed us to examine potential moderators of the conservatism-confidence relationship. We used a random-effects model to better extrapolate these effects beyond the current studies and to the general population (Hedges & Vevea, 1998). The average effect size across these studies was $\beta = .20$, *SE* $= .03$, $z = 7.52$, $p < 0.001$, and the 95% confidence interval for the true effect size was $\beta = .15-.26$ (Figure 5).

Cochran's Q-test suggested that there was substantial heterogeneity in our observed effect sizes ($Q(12) = 41.09$, $p < .001$), and so we examined potential moderators. We found no

differences in our effect sizes as a function of task type ($p = .84$), whether the task required a numerical or non-numerical judgment ($p = .60$), or whether the sample was from Mechanical Turk or other sources ($p = .21$). However, we did find that the effect size that we observed in Study 1D (the real-world distance estimation task with student, staff, and community member participants) was significantly larger than those observed in our other studies (estimated difference: $\beta = .30$, $SE = .05$, $z = 5.75$, $p < .001$), and that when this difference is accounted for, the residual variance among our effect sizes becomes non-significant ($Q(11) = 8.04$, $p = 0.71$). This suggests that Study 1D accounts for most of the variance among our observed effect sizes. Importantly, our estimated average effect size does not change substantially when this study is excluded from the meta-analysis: $\beta = .17$, $SE = .02$, $z = 11.42$, $p < 0.001$.

Although these judgment tasks were non-political in nature, the highly polarized political landscape in the U.S. 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. Our meta-analysis showed that there was no significant difference in effect sizes between studies conducted during the Obama vs. Trump presidencies ($p = .83$), suggesting that the association between conservatism and confidence is similarly strong regardless of the political party in power.
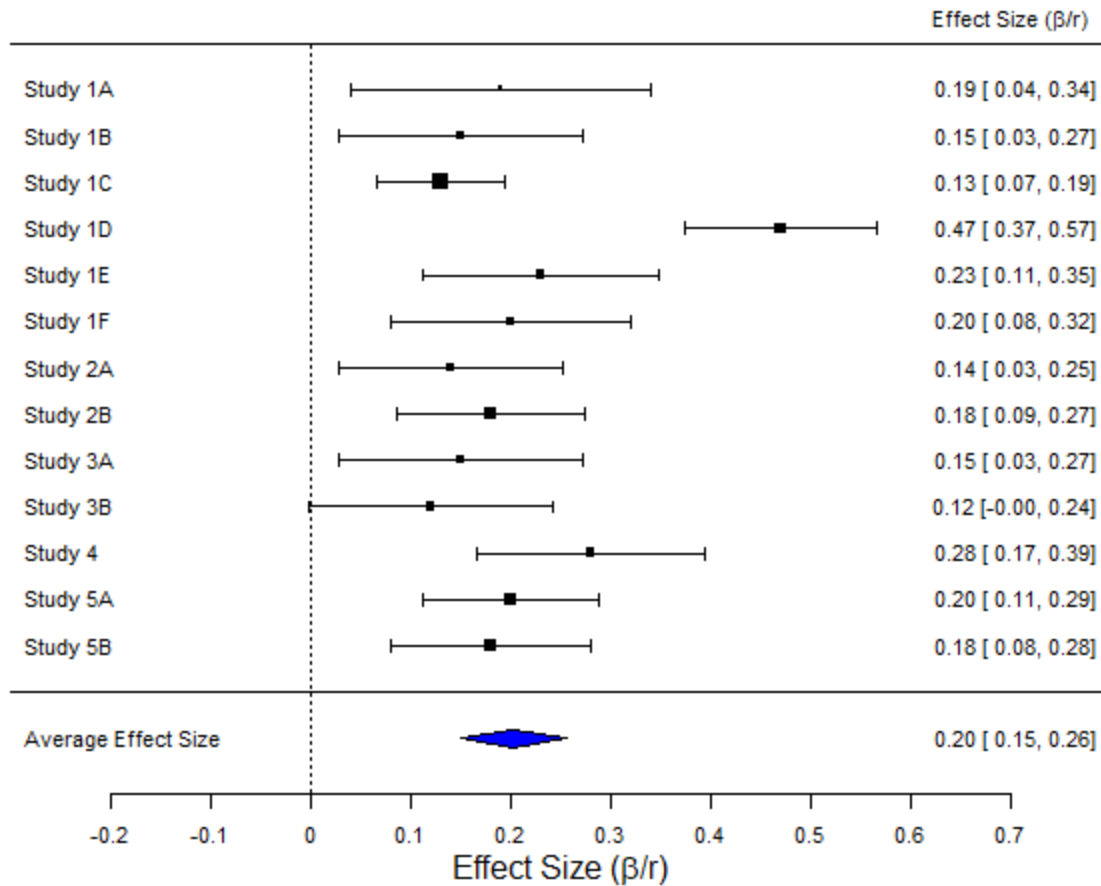
	Effect Size (β/r)
Study 1A	0.19 [0.04, 0.34]
Study 1B	0.15 [0.03, 0.27]
Study 1C	0.13 [0.07, 0.19]
Study 1D	0.47 [0.37, 0.57]
Study 1E	0.23 [0.11, 0.35]
Study 1F	0.20 [0.08, 0.32]
Study 2A	0.14 [0.03, 0.25]
Study 2B	0.18 [0.09, 0.27]
Study 3A	0.15 [0.03, 0.27]
Study 3B	0.12 [-0.00, 0.24]
Study 4	0.28 [0.17, 0.39]
Study 5A	0.20 [0.11, 0.29]
Study 5B	0.18 [0.08, 0.28]
Average Effect Size	0.20 [0.15, 0.26]

Effect Size (β/r)

Figure 5. Forest plot of effect sizes of conservatism-confidence relationship, Studies 1A-5B.

Average effect size (β/r) based on a random-effects meta-analysis model.

General Discussion

Across 13 studies (total $N = 4{,}346$), 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 also found that this association was of a similar strength under conditions of both low and high task difficulty, indicating that a high degree of difficulty is not necessary for the relationship to

emerge (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). In examining the factors that underlie the observed relationship, we found that conservatives reported a greater motivation to reach a rapid and final decision (Study 5A) and considered fewer alternative options before making a final judgment (Study 5B). This desire to quickly reach closure in judgments in part explained conservatives' greater confidence. Overall, the present research broadly contributes to our understanding of 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 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 answers 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 demonstrated 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, in turn, heightens confidence in one's own response.

Moving forward, the development of a more comprehensive theoretical understanding will also require further investigation of the impact and implications of these ideological differences in confidence. 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. Additionally, 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.

Ideological Direction, Ideological Extremity, and Political Confidence

This work also takes a step towards resolving an ongoing ambiguity in the literature regarding the relative influence of ideology versus ideological extremity on judgment and decision making. In this work, we found consistent evidence that ideological direction (i.e., a person's degree of liberalism vs. conservatism) 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. However, 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 not different from zero (see SI). Importantly, however, we do not view our findings as being at odds with those of past research. Rather, we believe it is possible to develop an integrated perspective concerning when ideological direction will play a more or less important role than ideological extremity in guiding judgment confidence.

At any given time, people possess multiple motivations and goals. Contextual factors can modulate which of these motivations take prominence and guide a person's judgment and decision-making processes (Fishbach & Zhang, 2008; Kruglanski et al., 2002). Although several meta-analytic reviews have highlighted that liberals and conservatives differ in the epistemic motivations that they most readily prioritize (Jost et al., 2003; Jost et al., 2018), other salient

motivations could play a stronger role in guiding liberals' and conservatives' judgment and decision-making cognition under some circumstances.

Over the past several decades, countries throughout the world have become increasing polarized, and political identity is now a central aspect of the self for many people (Bennett, 2012; Huddy, 2015). Largely as a consequence of this, both liberals and conservatives alike are often strongly motivated to defend their political identities and the beliefs that correspond to those identities (Huddy, 2001). Judgments that explicitly invoke political content are likely to activate these valued political identities (Unsworth & Fielding, 2014). Because strongly ideologically identified individuals—whether liberal or conservative—should be motivated to prioritize the defense of their ideological identity, extremity may be a stronger predictor of metacognitive judgments like confidence for political judgment tasks. However, when tasks do not invoke political content (e.g., those used in the present research), we would anticipate that the epistemic motivations in which liberals and conservatives systematically differ would take prominence and produce ideological differences in confidence. In sum, then, we would expect that directional ideology will most strongly predict judgment confidence for tasks viewed as non-political, but extremity may be a stronger predictor for tasks viewed as political in nature—particularly when the tasks relate to issues that are central to ideological identity (e.g., "hot-button issues").

Sample Diversity

One limitation of this research is that our participant samples were all collected in the United States, and were predominately comprised of individuals born in the U.S. This prevents our work from decisively speaking to the degree to which the conservatism-confidence relationship will hold across different nations and cultures. However, the research on which our

work builds—documenting a relationship between political conservatism and epistemic needs for certainty—spans over 50 years and has been replicated across several nations and cultures (Jost et al., 2003, 2018; Van Hiel et al., 2011, 2016). This suggests that the conservatism-confidence relationship is likely to extend beyond the samples examined here. In line with this expectation, in Study 1D, in which over one-third of the sample was born outside the United States, we found that the relationship between conservatism and confidence emerged to a similar degree among both those born within and outside of the U.S. Nevertheless, future work should examine the degree to which the conservatism-confidence relationship replicates in other nations to assess its generalizability.

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 non-quantitative judgments. Our meta-analysis showed 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. Additionally, these tasks were designed to assess simple forms of judgment that seem likely to represent domain-general differences.

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 would anticipate that the conservatism-confidence relationship should emerge. However, in domains where liberals have considerably

greater experience, exposure, or vested interest, this 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, & Matthews, 1973), they may be

more confident in their ability to distinguish between a Rothko and a Mondrian. Similarly,

lifestyle differences between liberals and conservatives (DellaPosta et al., 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 chose 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 exhibit greater confidence

across a wide range of judgment domains. Additionally, we found that these confidence

differences are explained by differences in judgment and decision-making *style*: conservatives

exhibit a greater tendency to make quick and efficient decisions, which leads them to experience

greater confidence. Liberals, conversely, tend to consider a wider range of possible responses,

which in turn undercuts their confidence. We hope that these findings will prove generative for

future research and theory. Further, given the broad influence of metacognitive confidence, we

anticipate that these ideological differences in confidence may have the potential to help explain

other ideological differences in both political and non-political cognition and behavior.

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