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Politically Motivated Reasoning on the Cognitive Reflection Test

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Abstract

Research on motivated reasoning is currently bogged down by two concomitant debates. The first concerns whether motivated reasoning is the product of fast and intuitive or slow and deliberative thinking processes. The second concerns how prevalent it is given that much of the evidence is compatible with normative counter-explanations, most notably Bayesian reasoning. This paper seeks to advance both debates. Across two experiments, we detect evidence for politically motivated reasoning in a way that cannot be explained by Bayesian rationality. We also find that motivated reasoning is attenuated by cognitive sophistication: Those participants who scored low on a classic version of the Cognitive Reflection Test exhibited motivated reasoning on a politicized version of it, but those participants who scored high did not. Our results suggest that motivated reasoning is a real empirical phenomenon, primarily driven by fast and intuitive thinking.

Keywords: motivated reasoning, cognitive reflection test, political polarization, Bayesian rationality, dual-process theories of thinking

Introduction

The global rise of political and social divisions over the last couple of decades is one of the defining issues of our time. For instance, in the United States, Republicans and Democrats are not just more polarized along ideological lines than they have been in the last 50 years (so-called “ideological polarization”; Pew Research, 2014), but out-party disdain is also at its peak in the same period (“affective polarization”; Iyengar et al., 2019). Moreover, Americans are increasingly in disagreement over policy-relevant empirical matters (“fact polarization”; Hochschild & Einstein, 2015), further complicated by the finding that it is often those with the highest levels of cognitive sophistication who are the most split (Drummond & Fischhoff, 2017; Kahan et al., 2012). As such, it has been argued that we have entered an era of “post-truth politics” where voters can no longer agree on what is fact and what is fiction (Suiter, 2016). This puts the institution of democracy in serious peril, whose effective functioning is predicated on citizens being able to make informed decisions. Given the high stakes, recent scholarship has put considerable effort into trying to understand the causes of political polarization.

Motivated Reasoning

For cognitive scientists, part of the answer lies with the empirical phenomenon of motivated reasoning. This is defined as reasoning that is guided by the directional goal of reaching a congenial conclusion regardless of whether it is accurate or not (Kunda, 1990). Therefore, on the conventional outlook that the purpose of individual reasoning is to arrive at accurate beliefs about the world (Kohlberg,

1969; Piaget, 1932), motivated reasoning can be regarded as a cognitive bias; that is, an error in human thinking and a form of irrationality (Ditto et al., 2019).

Psychological experiments have extensively documented this cognitive bias at work when individuals are tasked with thinking about political information. For example, partisans appraise the quality of otherwise-identical scientific studies differently depending on whether they find the studies’ conclusions politically congenial or not (Lord et al., 1979). In particular, they are more likely to declare a study to be convincing and probative when the study’s findings support their political beliefs than when the findings undermine them irrespective of the study’s actual methodological characteristics. The same type of ideologically motivated reasoning has been observed on politicized experimental tasks that involve argument evaluation (Ballarini & Sloman, 2017; Taber & Lodge, 2006), probability judgments (Van Boven et al., 2019), covariation detection (Kahan et al., 2017), syllogistic reasoning (Aspernäs et al., 2023; Calvillo et al., 2020; Gampa et al., 2019), psychological test appraisal (Kahan, 2013), and fake news discernment (Bago et al., 2020; Pennycook & Rand, 2019; Vegetti & Mancosu, 2020).

Motivated reasoning works in tandem with people’s tendency to assimilate information in a biased manner, whereby evidence confirming one’s beliefs is usually accepted uncritically while disconfirming evidence is usually over-scrutinized (Jerit & Barabas, 2012; Lord et al., 1979). The net result of these two cognitive processes tends to be attitude polarization: People holding divergent prior beliefs could be exposed to the same information and walk away even more steadfast in their beliefs rather than converging (Sunstein, 2002). This has been shown experimentally numerous times involving various policy issues, such as affirmative action (Taber & Lodge, 2006), immigration (Connor et al. 2024; Lind et al., 2022; Van Boven et al., 2019), gun control (Kahan et al., 2017; Taber & Lodge, 2006), capital punishment (Lord et al., 1979), and climate change (Nurse & Grant, 2020).

Consequently, solving the burning issues of ideological, affective, and fact polarization requires that we develop a thorough understanding of politically motivated reasoning. However, there are currently two concomitant debates among psychologists that hinder the development of such an understanding.

Which is the Culprit: Intuition or Deliberation?

The first debate concerns what cognitive process is responsible for politically motivated reasoning, and it takes place within the framework of dual-process theories of thinking. Although these theories come in several distinct forms, they share a strong family resemblance (see Evans,

2008 for an overview). At their core lies a distinction between cognitive processes that are fast, intuitive, and unconscious and those that are slow, deliberative, and conscious (Evans & Over, 1996; Sloman, 1996; Stanovich, 1999).

In making judgments and decisions, the human mind tends to default to using intuitive processes to ease the metabolic costs of thinking. While such miserly information-processing often produces “good enough” results in environments that are similar to the ancestral conditions under which they were selected for, they do have the unintended side effect of producing systematic errors in qualitatively different ones, which are rapidly on the rise with modernity (Stanovich et al., 2016). At the same time, it is possible for us to recognize and overcome these systematic errors in thinking by recruiting deliberative processes, provided we have the cognitive resources to spend.

On this view, politically motivated reasoning is most naturally understood as a byproduct of intuitive processes. For instance, participants may unwittingly rely too much on how they feel about the political information they encounter in determining its truthfulness (“affect heuristic”, Slovic et al., 2007). This position, namely that politically motivated reasoning happens because of miserly information-processing of political content, not because people are consciously pursuing any psychological or social aim, is known as the “classical reasoning account” (Bago et al., 2020), or alternatively, as the “motivated-reasoning-as-feelings” account (Lind et al., 2022).

In contrast, a rival account postulates that people often use deliberative thinking not for quality-control, but to process information in a way that helps them formulate and preserve beliefs that connect them to their important affinity groups (Kahan, 2013; Kahan et al., 2017). According to this view, the reasoner is often well-served by sacrificing some degree of accuracy in their beliefs in exchange for deriving psychological and social benefits. In other words, the problem is not too little information processing, but too much information processing, which tends to increase bias and polarize attitudes. In the context of this debate, this position is known as the “motivated System 2 reasoning account” (Bago et al., 2020), or alternatively, as the “motivated-reasoning-as-analysis” account (Lind et al., 2022).

In general, empirical support for either of these positions is collected by using the same type of experimental paradigm. Typically, studies in this area employ some measure of cognitive sophistication, such as cognitive reflection (Aspernäs et al., 2023; Bago et al., 2020; Calvillo et al., 2020; Kahan, 2013; Knobloch-Westernwick et al., 2020; Pennycook & Rand, 2019), numeracy (Connor et al., 2020; Kahan et al., 2017; Lind et al., 2022; Strömbäck et al., 2024; Van Boven et al., 2019), scientific literacy (Drummond & Fischhoff, 2017; Kahan et al., 2012), domain-specific knowledge (Taber & Lodge, 2006; Vegetti & Mancosu, 2020), or a combination of these. They also employ some type of a politicized reasoning task, which usually comes in two versions. These versions are designed to differ only in the kinds of political materials used. One is selected to be congenial to political

orientation A but uncongenial to political orientation B, and the other is selected to be congenial to political orientation B but uncongenial to political orientation A. (Sometimes, a third version with non-political content is also featured to act as a control condition.)

Evidence for politically motivated reasoning is assessed by considering the participants’ political orientation (e.g. A or B) and how it relates to their behavior on the disparate versions of the politicized task. If participants evaluate the presented information differently when it implies a politically uncongenial conclusion than when it implies a politically congenial conclusion (or when it implies a politically neutral conclusion), then the difference in the standards applied is attributed to politically motivated reasoning.

To discern whether the cognitive process responsible for such motivated reasoning is intuitive or deliberative, researchers look at the participants’ score on the administered measure of cognitive sophistication. If participants who are high in cognitive sophistication show a smaller behavioral difference (or none at all) across the different versions of the reasoning task than those who are low in cognitive sophistication, then politically motivated reasoning is taken to be the product of intuition. Conversely, if participants who are high in cognitive sophistication show a larger behavioral difference across the different versions of the reasoning task than those who are low in cognitive sophistication, then politically motivated reasoning is taken to be a product of deliberation.

The crux of the ongoing debate among psychologists regarding the source of motivated reasoning is that experiments that use this paradigm show conflicting results: Some studies find that, as predicted by the motivated-reasoning-as-feelings account, cognitive sophistication attenuates motivated reasoning (e.g. Aspernäs et al., 2023; Bago et al., 2020; Ballarini & Sloman, 2017; Lind et al., 2022; Pennycook & Rand, 2019; Persson et al., 2021; Vegetti & Mancosu, 2020). Other studies find that, as predicted by the motivated-reasoning-as-analysis account, cognitive sophistication exacerbates motivated reasoning (e.g. Drummond & Fischhoff, 2017; Kahan, 2013; Kahan & Peters, 2017; Kahan et al., 2012, 2017; Knobloch-Westernwick et al., 2020; Nurse & Grant, 2020; Sumner et al., 2023; Van Boven et al., 2019). Yet another set of studies find no clear effect either way (e.g. Baker et al., 2020; Calvillo et al., 2020; Connor et al., 2020; Strömbäck et al., 2024).

Irrationality or Bayesian rationality?

The second debate concerns whether the experimental paradigm outlined above can even show evidence for politically motivated reasoning in a way that rules out any normative counter-explanation, most notably Bayesian Reasoning.

According to this approach, Bayes’ Theorem informs how one ought to update one’s posterior belief in any factual matter based on one’s prior belief in the matter and the likelihood of any newly encountered evidence (Howson & Urbach, 2006). Hence, what is being assessed in these

experiments in Bayesian terms is whether participants weigh the likelihood ratio of the presented political information differently depending on whether it is favorable or not.

Crucially, however, the Bayesian approach allows the likelihood term to be weighed subjectively based on the reasoner's own set of independent criteria. This means that finding such a difference in the evaluations of the matched political information may be perfectly rational from a Bayesian point of view. It may reflect, for instance, that the reasoner found the newly encountered information in one case to be more coherent with their prior factual beliefs than in the other case (Tappin et al., 2020a). In the same vein, the reasoner's prior beliefs may have a bearing on the trustworthiness of the source of the new information (Tappin et al., 2021) or how familiar it is to them (Kahan, 2015).

Disentangling whether participants assigned different weights to the likelihood terms between the experimental conditions because of such truth-convergent criteria or because of motivated reasoning is painstakingly difficult in the context of the prevalent experimental paradigm. As such, several psychologists share the view of Baron and Jost (2019) that “many—and possibly all—of the studies that claim to find ideological bias (in either or both directions) do not in fact show any bias at all” (p. 296). Instead, they may just show that people reason in a manner that is largely consistent with the Bayesian standard of rationality. Some studies have shown this explicitly, such as Tappin et al. (2020b) who measured participants' prior and posterior beliefs, as well as how they weighed the likelihood of the newly presented information and found that those who are high in cognitive sophistication updated their political beliefs in a way that was close to an unbiased Bayesian benchmark.

Scientists who are skeptical of the normative counter-explanation point out that many studies use various methodological strategies to either equate relevant prior beliefs or to minimize the need to rely on them (Kahan, 2015). For example, Kopko et al. (2011) report that partisans are more likely to judge the same “hanging chad” as a valid vote if it was for an in-party candidate than if it was for an out-party candidate. It is hard to see what prior factual beliefs, if any, could be invoked to make such a directional perceptual judgment. Rather, the evidence from such studies is more consistent with the idea that participants opportunistically adjust the likelihood term to serve their political interest (Ditto et al., 2019). In addition, there is some evidence that those who are high in cognitive sophistication are more likely to do this, perhaps because they are more likely to find a way to justify or rationalize such an opportunistic adjustment (Kahan, 2015).

Experiment 1

The aim of the present study was to advance both debates on politically motivated reasoning. We did this by developing a new experimental paradigm that is 1) immune to the Bayesian counter-explanation and 2) makes it uniquely easy to identify which cognitive process is responsible for politically motivated reasoning- intuition or deliberation. The study

materials and the data obtained are available at <https://osf.io/3nexp>.

Methods

Participants. We used the software program G*Power to conduct a power analysis. Our goal was to obtain .9 power to detect a small effect size of $f^2 = .05$ at .01 alpha error probability. This led to a target sample size of 354, which we rounded up to 360. As such, we recruited 360 participants using Prolific, all of whom were from the United States, at least 18 years old, and native speakers of English. Using Prolific's internal settings, we set up quotas to ensure that we recruited an approximately equal number of self-identified Democrats (final $n = 176$) and Republicans (final $n = 172$). We employed a script that monitored whether participants switched tabs or windows while taking part in our study. We asked them to refrain from doing this and said that their submission would be eliminated if they switched tabs or windows more than once. Twelve participants' data had to be excluded because of this. This left a final sample size of 348 participants (159 males, 184 females, 5 non-binary/third gender). Their mean age was 44.96 (SD = 13.95).

Politicized Reasoning Task. We adapted the original Cognitive Reflection Test (CRT; Frederick, 2005) to serve as our politicized reasoning task. By default, this test measures a person's tendency to override intuitive processes with deliberative processes. The original version features three short items, each of which is designed to elicit an intuitive, but incorrect response. Take the “widget” item, for instance:

If it takes 5 machines 5 minutes to make 5 widgets, how long would it take 100 machines to make 100 widgets? _____ minutes

The first answer that tends to pop into one's head is 100 minutes, but this is incorrect. It takes some further reflection to arrive at the correct answer, which is 5 minutes. Thus, even though it correlates with cognitive ability, what the CRT in fact assesses is one's cognitive style (or thinking disposition), which makes it uniquely predictive of performance on heuristics-and-biases tasks (Toplak et al., 2011).

While the CRT is frequently used in the relevant literature as a measure of cognitive sophistication, we realized that the test itself could be used to detect evidence for politically motivated reasoning. One merely has to politicize the CRT items in a way that the mathematically intuitive but incorrect answers will imply either a politically agreeable or a politically disagreeable conclusion. This is what we did. For each of the original three CRT items, we developed two politicized versions, one where the intuitive answers were congenial to a prototypical Democratic belief but not to a prototypical Republican belief, and another where it was the other way around. To illustrate, here are our politicized versions for the “widget” item:

“Agreeable to Republicans” Version: Republican policy analysts argue that renewable energy technology is way too costly and slow to replace coal and oil as our primary sources of energy. For instance, if it currently takes 20 wind turbines 20 hours to produce enough electrical energy to power 20 homes, how long would it take 100 wind turbines to produce enough electrical energy to power 100 homes? ____ hours

“Agreeable to Democrats” Version: Democratic policy analysts argue that the government should improve access to gender-affirming medical care for transgender people, because they currently face years of waiting time and tens of thousands of dollars in medical costs. For instance, if it presently takes 20 gender identity clinics 20 months to perform 20 gender-reassignment surgeries, how long would it take 100 gender identity clinics to perform 100 gender-reassignment surgeries? ____ months

The other politicized versions appear in the supplementary materials. Our frames covered three hot-button political issues: climate change/renewable energy, immigration, and transgender rights. Our dependent variable was overall performance on the three politicized CRT items (0-3).

The politicized CRT has several useful methodological properties that make it uniquely effective to advance both debates on politically motivated reasoning. First, it offers direct insight into the cognitive process responsible, because the classic version of the task is the gold standard for discerning intuitive from deliberative activity. Second, it is a reasoning task where there are demonstrably correct answers, informed by the axioms of arithmetic, not Bayesian reasoning, which inoculates against the conventionally invoked counter-explanation. We elaborate on both points in the general discussion.

Measure of Cognitive Sophistication. We selected three other cognitive reflection test items from Toplak et al. (2014) to serve as our measure of cognitive sophistication. These were the “barrel,” the “marks,” and the “pig” item, respectively. For each item, the correct answer received a score of 1 and any incorrect answer received a score of 0. Thus, participants could score between 0 and 3 (same as on our politicized CRT). Based on their scores, we categorized participants as either “low in cognitive sophistication” (0s and 1s) or “high in cognitive sophistication” (2s and 3s).

Procedure. After signing an informed consent form and completing a CAPTCHA, participants were given the following instructions: “You will be presented with three public policy claims that are often heard on the news. In each case, we would like you to read a line of reasoning supporting that claim and answer a question on what that implies.” Then, we presented participants with either the three “Agreeable to Democrats” versions of the CRT items or the three “Agreeable to Republicans” versions in random order. In each case, participants first had to indicate the extent to which they agreed with the public policy claim that comprised the

first sentence of the CRT item (and on which the rest of the item was premised). Participants did this using a 7-point Likert Scale (“1” = “Strongly disagree,” “4” = “Neither agree nor disagree,” “7” = “Strongly agree”). Then, they had to answer what the accompanying “line of reasoning” implied; that is, they had to answer the politicized CRT item. After that, participants completed the three non-political CRT items from Toplak et al., 2014. Then they answered a few demographic questions and were given the opportunity to provide feedback about the study. Finally, participants were thanked and debriefed. The three agreement ratings of each participant were averaged into a single metric (0-7). Based on this score, we categorized participants as either “politically agreeing” ($X > 4$) or “politically disagreeing” ($X \leq 4$).

Hypotheses. We conjectured that politically agreeing participants will be more likely to provide the intuitive but incorrect response to our politicized CRT items than politically disagreeing participants. In other words, we hypothesized that we would see evidence for politically motivated reasoning. We further hypothesized that motivated reasoning will be attenuated by cognitive sophistication. Therefore, among those participants who are low in cognitive sophistication, we will see a large performance difference between the politically agreeable and the politically disagreeable versions of the reasoning task. Among those participants who are high in cognitive sophistication, we will see either a small performance difference or none.

Results

The findings are visualized in Figure 1. Multiple regression analysis was used to examine if problem frame and cognitive sophistication significantly predicted reasoning performance on the politicized CRT. The results of the regression indicated that two predictors together explained 29% of the variance in the dependent variable ($F(2,345) = 69.46$, $p < 0.001$, $R^2 = .29$). We found that cognitive sophistication significantly predicted reasoning performance ($t = 11.46$, $p < 0.001$, $\beta = .52$), as did problem frame ($t = -2.97$, $p = 0.003$, $\beta = -.14$). The higher the participants were in cognitive sophistication and the more they found the problem frame to be politically disagreeable, the better they performed on the task.

We also conducted a set of complementary analyses using Welch’s independent samples t-tests. Among participants who were low in cognitive sophistication, such a test revealed a significant performance difference between the politically agreeable and the politically disagreeable versions of the reasoning task ($t(195.39) = 2.85$, $p = 0.005$, $d = 0.39$). Politically disagreeing participants attained a higher mean score ($M = 0.96$, $SD = 0.98$) than politically agreeing participants ($M = 0.61$, $SD = 0.82$). Among participants who were high in cognitive sophistication, the same type of test revealed no performance difference between the politically agreeable and the politically disagreeable versions of the reasoning task ($t(125.99) = -0.15$, $p = 0.88$). The mean scores of politically disagreeing participants and politically agreeing

participants were 1.68 (SD = 0.97) and 1.71 (SD = 1.02) respectively.

There was a significant and large correlation between agreement group and political affiliation in both the “Agreeable to Republicans” condition ($r = 0.80$, $p < 0.001$) and the “Agreeable to Democrats” condition ($r = 0.76$, $p < 0.001$). Descriptive statistical analyses showed that we ended up with a comparable number of politically disagreeing (161) and politically agreeing participants (187). Finally, descriptive statistical analyses also showed that the mathematically intuitive answers took up most of the incorrect responses on each of the three politicized items: 73.8% in case of the lily analogue, 93.6% in case of the widget analogue, and 50.3% in case of the bat-and-ball analogue.

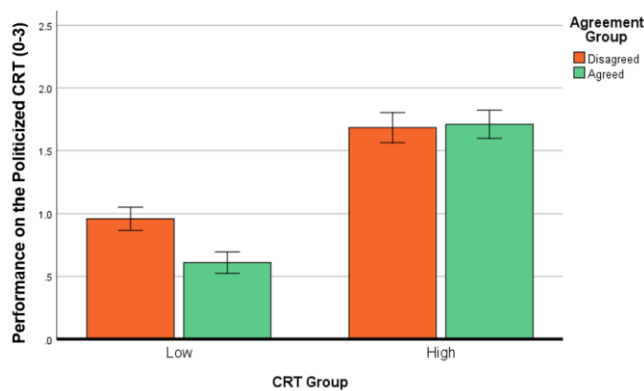


Figure 1: Mean performance scores of participants in Experiment 1 split by cognitive sophistication and whether they found the problem frame politically agreeable or disagreeable. Error bars are ± 1 SE.

Discussion

The results of Experiment 1 corroborated our hypotheses. Not only were those participants who disagreed with the public policy claims on which the politicized CRT items were premised more likely to provide the correct answer to our reasoning task than those who agreed, but those who agreed provided the mathematically intuitive answer more than any other incorrect answer. This pattern of results indicates motivated reasoning, not Bayesian reasoning. We also found that cognitive sophistication attenuated such motivated reasoning: While participants low in cognitive sophistication exhibited a sizable performance difference between the politically agreeable and disagreeable versions of the reasoning task, participants high in cognitive sophistication exhibited none. This finding suggests that politically motivated reasoning is primarily driven by intuition. To substantiate our results, we conducted a preregistered replication with a new sample and more statistical power.

Experiment 2

The experiment is preregistered at <https://osf.io/g2drf>. The study materials and the obtained data are available at the same online repository as those of Experiment 1.

Methods

Participants. We used the software program G*Power to conduct a power analysis. Our goal was to obtain .95 power to detect a small effect size of $f^2 = .05$ at .01 alpha error probability. This led to a target sample size of 418, which we rounded up to 420. The inclusion and elimination criteria were the same as in Experiment 1, except that those who participated in Experiment 1 were not eligible. Twenty-one participants' data had to be eliminated because they switched tabs or windows more than once while participating in our study. This left a final sample size of 399 participants (166 males, 244 females, 9 non-binary/third gender). Out of these, 199 were self-identified Democrats and 200 were self-identified Republicans. Their mean age was 45.79 (SD = 13.78).

Other Methods. We used the same politicized reasoning task, the same measure of cognitive sophistication, and the same procedure as in Experiment 1.

Results

The findings are visualized in Figure 2. Multiple regression analysis was used to examine if problem frame and cognitive sophistication significantly predicted reasoning performance on the politicized CRT. The results of the regression indicated that two predictors together explained 31% of the variance in the dependent variable ($F(2,396) = 88.91$, $p < 0.001$, $R^2 = .31$). We found that cognitive sophistication significantly predicted reasoning performance ($t = 12.44$, $p < 0.001$, $\beta = .52$), as did problem frame ($t = -3.38$, $p < 0.001$, $\beta = -.14$). The higher the participants were in cognitive sophistication and the more they found the problem frame to be politically disagreeable, the better they performed on the task.

We also conducted a set of complementary analyses using Welch's independent samples t-tests. Among participants who were low in cognitive sophistication, such a test revealed a significant performance difference between the politically agreeable and the politically disagreeable versions of the reasoning task ($t(205.51) = 3.40$, $p < 0.001$, $d = 0.44$). Politically disagreeing participants attained a higher mean score ($M = 1.00$, $SD = 0.99$) than politically agreeing participants ($M = 0.61$, $SD = 0.78$). Among participants who were high in cognitive sophistication, the same type of test revealed no performance difference between the politically agreeable and the politically disagreeable versions of the reasoning task ($t(139.84) = 0.87$, $p = 0.39$). The mean scores of politically disagreeing participants and politically agreeing participants were 2.06 (SD = 0.89) and 1.93 (SD = 0.98) respectively.

There was a significant and large correlation between agreement group and self-reported political affiliation in both the “Agreeable to Republicans” condition ($r = 0.60$, $p < 0.001$) and the “Agreeable to Democrats” condition ($r = 0.77$, $p < 0.001$). Descriptive statistical analyses showed that we ended up with a comparable number of politically disagreeing (192) and politically agreeing participants (207).

Finally, descriptive statistical analyses also showed that the mathematically intuitive answer took up most of the incorrect responses on the politicized lily analogue (62.3%) and the widget analogue (88.7%), but not on the bat-and-ball analogue (45.5%). Nonetheless, even on the bat-and-ball analogue the mathematically intuitive answer was the modal response.

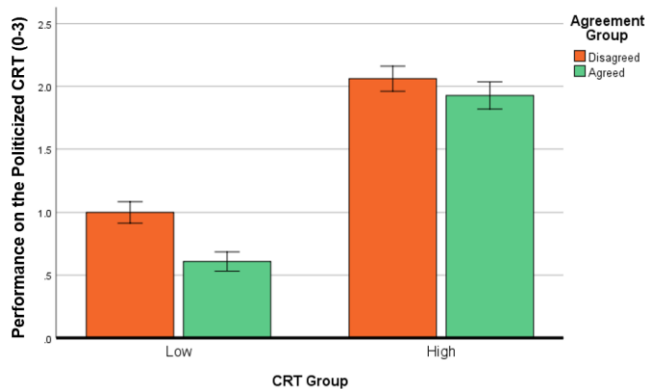


Figure 2: Mean performance scores of participants in Experiment 2 split by cognitive sophistication and whether they found the problem frame politically agreeable or disagreeable. Error bars are +/- 1 SE.

Discussion

Experiment 2 successfully replicated the results of Experiment 1. In fact, even the effect sizes stayed remarkably consistent across the two studies. This not only reinforces our interpretation of the findings of the previous experiment, but it also indicates that the politicized CRT is a methodologically robust paradigm with which to study politically motivated reasoning.

General Discussion

Across two online behavioral experiments we found consistent evidence that politically motivated reasoning is a real empirical phenomenon and that it is primarily driven by fast and intuitive thinking processes. We did this by developing a new experimental paradigm that has several desirable methodological properties.

First, it is immune to the conventionally invoked counter-explanation, because the normative behavior on the task is informed by the axioms of arithmetic, not Bayesian reasoning. It would be implausible to argue that participants may have still unwittingly used their prior beliefs about the policy issue at hand, rather than mathematics, to provide their answers, because the mathematically intuitive, but nonetheless incorrect numbers comprised most of the responses on the politicized CRT. This systematicity suggests that participants must have predominantly relied on their priors about arithmetic to solve the problem, not politics, which due to their highly subjective nature would have led to a more varied distribution.

Second, the politicized CRT does not require any specialized knowledge from participants and can be

administered with only minimal task instructions. Several paradigms that do well on the previous point do so only by compromising on this one. Consider, for instance, the syllogistic reasoning paradigm (Evans et al. 1983), which has been quite popular in investigations of politically motivated reasoning (e.g. Aspernäs et al., 2023; Calvillo et al., 2020; Gampa et al., 2019). On this task, participants are asked to evaluate whether a conclusion deductively follows from the given premises, rendering prior beliefs about the truthfulness of the premises irrelevant. This minimizes the risk of a Bayesian counter-explanation. The problem though is that the experimenters first need to educate participants about the nuanced distinction between logical validity and logical soundness (which are easily confused, see Gampa et al., 2019), and then, assess whether participants in fact understood the difference and evaluated logical validity as instructed. In practice, this can be quite difficult to achieve without providing several practice rounds accompanied by feedback, which creates unwanted logistical hurdles for researchers.

A third, and perhaps the most useful feature of the politicized CRT is that it offers direct insight into the cognitive process responsible for politically motivated reasoning, because the classic version of the task is the gold standard for discerning intuitive from deliberative activity. Therefore, the correlation between performance on the two versions of the task is larger than between any other reasoning task and measure of cognitive sophistication we have seen used in tandem in the literature. Scholars in this space are often hindered from being able to convincingly relate their findings to the motivated reasoning as intuition versus deliberation debate, because they are employing reasoning tasks and measures of cognitive sophistication that only weakly correlate, increasing the risk of noise and leading to inconsistent results. Compare, for example, the findings of Baker et al., 2020; Connor et al., 2020; Lind et al., 2022, Persson et al., 2021; Strömbäck et al., 2024 with those of Kahan et al., 2017; Kahan & Peters, 2017; Nurse & Grant, 2020; Sumner et al., 2023, all of which use the same covariation detection task and measure of cognitive sophistication (i.e. numeracy).

One potential drawback of the Politicized CRT though is that CRT items are in limited supply, and it may not be so easy to develop politically convincing adaptations for each one. We have piloted a few others, such as the “barrels”, the “marks”, and the “stocks” items from Toplak et al. (2014) with varying degrees of success. Yet, it would be highly desirable to develop additional items not only to increase the reusability of the task, but also its generality, as different CRT items seem to be best suited for covering different policy issues.

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