Mitigating Motivated Bias

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Introduction

Motivated reasoning, as a departure from rationality, detracts from our ability to see the world as it is rather than as we wish it to be. At its worst, it can blind intelligence analysts to threats, cause policymakers to underestimate risks, prevent rational public discourse about important policy matters, and undermine democratic ideals. For educators, and particularly for educators at West Point, the latter of whom work to produce future civic leaders, professional officers, and intelligence and policy analysts, it is important to counter students’ inclination to perform reasoning tasks in a motivated manner. Increasing their knowledge and skills in the social sciences may play an important role, but absent a mindset in students that seeks to be accurate (rather than one that seeks to find comforting answers to difficult questions) more knowledge and skills can exacerbate the problem. West Point educators should focus on “inspiring” the types of goals and mindsets that lead students to be curious and desire accuracy in their reasoning tasks.

What is motivated reasoning?

Motivated reasoning is a type of reasoning performed when some “wish, desire, or preference” is at stake with the “outcome of a given reasoning task.”1 In other words, when performing a reasoning task, a subject’s motivation for the outcome of the reasoning task to conform to their wishes, desires, or preferences, positively impacts the likelihood that they will arrive at the desired conclusion. More simply put: people see what they want to see and they are relatively immune to contradictory evidence.

Research into motivated reasoning originated from psychological theories of dissonance. Dissonance research observed that humans experience anxiety when several of their beliefs, or their beliefs and actions, appeared to them to be incongruent. The desire to relieve this anxiety prompts people to perform “belief system defense,” a psychological process that can involve a measure of self-deception aimed at restoring congruence and relieving anxiety.2 Anytime a reasoning task occurs that places a subject at risk of arriving at an undesirable conclusion, motivated reasoning decreases the likelihood that they will do so. Not all reasoning tasks have this potential. When reasoning about purely abstract concepts or quite mundane topics, there is likely to be little threat to a person’s identity. However questions about politics tend to be deeply linked to aspects of identity and are particularly susceptible to motivated reasoning.

At its core, motivated reasoning is a departure from ideal rationality. Precise definitions of rationality can vary, but a “common sense” understanding of a rational decision-maker is one who is “logical, discriminating while open to new evidence and…free of serious blinkers as they

weigh the evidence and think about the likely consequences of options."\(^3\) Furthermore “rational decision makers should be good at attending to new information...(to) ‘update’ their estimates in response to new reliable information.”\(^4\) Motivated reasoning impacts an actor’s ability to update their beliefs and properly assess consequences.

With regard to updating belief, motivated reasoning causes actors to accept, uncritically, evidence that conforms to their prior belief and discount evidence that is contrary.\(^5\) For example, an actor with a prior belief in climate change will uncritically accept new data that appears to support climate change, whereas an actor with a prior disbelief in climate change will become a “motivated skeptic,”\(^6\) dedicating mental time and energy to refuting the newly encountered evidence. Motivated skepticism causes actors to insufficiently update their beliefs about the world when they encounter new evidence. The motivated skeptic with the prior disbelief in climate change may reject the new evidence altogether (no update) or make only a slight update (perhaps less than the evidence might demand). So, the impact of motivated skepticism is to inhibit the proper degree of belief updates.

However, motivated reasoning not only impacts the degree to which actors update their believes, it can even impact the direction in which the update occurs. A study of how motivated reasoning impacts the public’s view of candidates for public office found “voters may become even more positive about a candidate they like after learning something negative about that candidate.”\(^7\) To use the climate change example again, this study suggests that our climate change skeptic would actually increase his disbelief in climate change as a result of being presented with accurate evidence for the phenomenon. If rational thought requires actors to properly update their beliefs, motivated reasoning clearly presents a challenge to it.

Another important aspect of rationality included the assessment of consequences. Properly assessing consequences necessitates the ability to determine risk. Risk has two components: (1) the probability of an event occurring and (2) the magnitude of the event’s impact. However, again using climate change, motivated reasoning has been shown to impact the degree of risk people assign to the phenomenon. Climate change has become an issue that signals important social information. Climate change “believers” and “deniers” fall into social groups that have taken on an “us vs them” dichotomy. In this situation, people are subject to social sanction if they express beliefs that are incongruent with their broader group. The threat of social sanctions creates undesirable stress when a person encounters evidence that counters their prior belief and that of their group. To reduce this stress, climate change skeptics tend to regard the risk as lower (meaning they believe the probability of climate change occurring is lower or that its impacts will be minimal) whereas those who believe in climate change assess the risks to be higher.\(^8\) People in each group differ in terms of the probability and risk level they assign based on the same evidence.

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\(^4\) Ibid.


\(^6\) Ibid.


Problems from Motivated Reasoning

The overarching problem with motivated reasoning is that it prevents people from seeing objective reality. Within political science, this breaks down into two more specific problems. One, is that intelligence analysts and policymakers, at times, perceive the world not as it is, but as they want it to be resulting in flawed analysis or ineffective policy. The other, is that the public cannot agree on matters of fact to enable them to engage in rational debate and persuasion over matters of public policy. The first is a problem for national security (though it impacts decision-making for policymakers in the domestic sphere too) and the second is a problem for democracy.

Beginning with the national security implications, there is a long list of major events in world politics where intelligence analysts and policymakers may have been led astray by motivated biases. The common issues are that analysts and decision-makers fail to properly estimate risks and probabilities. According to Robert Jervis, motivated biases were partially responsible for incorrect intelligence and poor policy decisions from the US regarding Iraq. With respect to intelligence he suggests that analysts may have adjusted their reports about the likelihood of Iraq possessing weapons of mass destruction to please their policymaking clients, providing “estimates that would support, or at least not undermine, policy.”9 The same clients, again due to motivational biases, then erred in their assessment of the risks and costs invading and occupying Iraq.10 Matthew Wahlert asserts that motivated biases caused several US presidents to overestimate the probability of success in critical national security events such as (inter alia) the Kennedy administration with the Bay of Pigs and the Carter administration with Desert One (the Iran hostage rescue attempt). Wahlert found motivated biases at play as well in the failure of intelligence organizations to consider all possible options available to an adversary, such as with Pearl Harbor and 9/11.11

While the issues described above represent potential threats to national security from threats from abroad, the next issue for motivated biases and politics is a threat from within, particularly for democratic societies. If it is true that “democracy works better when participants care about the accuracy of truth claims,”12 then the problem of motivated reasoning preventing citizens from agreeing on the “truth” about empirical claims is a serious one. For one thing, it inhibits the public’s ability to “converge, or…converge as rapidly as they should, on scientific information essential to their common interests in health and prosperity.”13 Another problem is that it gives little hope that citizens can persuade one another to change their positions on issues through rational discourse.

There are numerous examples of the harmful impact of motivated reasoning on democratic discourse. Referring back to the climate change example, Dan Kahan finds that “people with different cultural values…disagree sharply about how serious a threat climate change is. People with different values draw different inferences from the same evidence.”14

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14 Kahan, Daniel M. 2012. "Why we are poles apart on climate change." Nature 488 (7411).
Perhaps climate science is too complex a topic for average people fully understand. But, the same groups don’t even agree on such a simple thing as “their impressions of recent weather.”\textsuperscript{15} If people in a democracy disagree about whether it is sunny or cloudy, how can they be expected to converge on successful policy solutions to complex global problems?

Motivated reasoning has also been associated with a belief in conspiracy theories and fake news. Miller et. al. found that an individual’s ideology predisposes them to which conspiracy theories they will endorse, a lack of trust inclines them to make the endorsement, and motivated reasoning is the process by which they retain their belief in the conspiracy.\textsuperscript{16} Crucially, a believer in conspiracy theories is not ignorant about politics, but is in fact, “highly knowledgeable.”\textsuperscript{17} Some scholars have posited that belief in fake news is attributable to motivated biases that lead people to accept fake news uncritically that corresponds to their prior beliefs. This view has been challenged by other studies that suggest the mechanism at work is not a motivated bias, but a “lack of reasoning.”\textsuperscript{18} Such a study essentially puts belief in fake news into the category of cognitive biases or bounded rationality, where the believer is avoiding the high costs of more rigorous thought rather than motivated reasoning. Whether or not departures from rationality are caused by motivations or lack of reasoning has important implications for educators. The remedies for bounded rationality may exacerbate motivated reasoning.

**Bounded Rationality vs Motivated Reasoning**

Motivated reasoning is not the only cause for human minds to depart from perfect rationality. It has long been recognized that cognitive biases have this effect as well. In fact, there has been some dispute in the literature on exactly which phenomenon is to blame for some apparently irrational thought. The difference matters for this inquiry because some of the remedies that ameliorate cognitive biases may exacerbate motivated ones. The debate between scholars is not fully resolved, but those favoring motivated biases as the cause of many of the aforementioned issues have gained advantage in the debate by focusing on the mechanisms by which motivated biases operate.

As for cognitive biases, there are many types, but they can best be summarized with Herbert Simon’s concept of bounded rationality. Simon recognized that, counter to the assumptions of many economists at the time, human decision-making occurs under conditions of uncertainty, where subjects lack complete information, and may lack the cognitive capacity to understand or process the relevant information. These conditions inhibit the subject’s ability to decide in a way that maximizes utility. Essentially, decisions must be made, but decision-makers lack the time, information, and ability to make the best decision possible. There is another aspect to bounded rationality: thinking deliberately is costly. It takes time (creating opportunity costs) and effort (it may not be pleasurable) from the subject. Therefore, rather than seek out and examine all information, decision-makers “satisfice,” or come to what they consider a “close-

\textsuperscript{15} Ibid.
\textsuperscript{17} Ibid. 824.
enough” conclusion. People make decisions under these conditions with the aid of “heuristics” or mental shortcuts. These shortcuts allow decisions to be made more rapidly, but may come at the expense of utility maximization and perfect rationality.19

For educators, the problem of bounded rationality can be addressed in several ways. For one, they can increase student knowledge. If a student cannot make an optimal decision because they lack relevant information, educators can provide that information to them. Two, they can provide students with better problem solving tools. If students lack skills in math, students can be taught formulas and trained to perform calculations. In other disciplines, they can be taught theories and frameworks for testing and analyzing data. Finally, educators can try to make students more reflective so they do not rush to conclusions before analyzing all of the available information. If the problem is that people do not take their time and think when solving problems or consuming information, encouraging reflection can be an antidote.

The problem is that all of those proposed solutions to the cognitive biases associated with bounded rationality may exacerbate the effects of motivated reasoning. Recall that with belief in conspiracy theories, it was people who were “highly knowledgeable about politics” who are most susceptible.20 There are other examples where more information makes one more susceptible to motivated reasoning. Dan Kahan finds that “science literacy” is associated with increased polarization on belief in climate change.21 In other words knowing about science increases the strength of some people’s belief in climate change and the strength of other’s disbelief in climate change. Looking at public opinion on matters of politics and public policy, another study found that “sophisticated participants who possessed greater amounts of knowledge about a topic and were more invested in it were more likely to engage in biased processing.”22 These studies suggest that simply arming students with more knowledge will not make them more rational reasoners. Instead, they may use that knowledge to double down on their (potentially) erroneous beliefs and further polarize themselves from one another as fellow citizens.

If teaching students more information does not work, perhaps teaching them more advanced processing skills for information they encounter elsewhere will work. Afterall, many educators are fond of saying they “teach students how to think, not what to think.” Yet here too, they be making the problem worse. According to Kahan, people with greater ability to comprehend quantitative information (those rated with a high degree of “numeracy”) are better able to use quantitative data to arrive at identity confirming outcomes when they perform reasoning tasks that involve numbers and place their identity at stake.23

If knowledge and skills cannot help, it seems perhaps the problem is that people are insufficiently reflective, making decisions with an over reliance on heuristics rather than slow deliberate reasoning. The cure here, albeit a difficult one, would be to get students to use more deliberative reasoning processes. Yet again, Kahan finds a problem as it turns out that “subjects who scored highest in cognitive reflection (as measured by the Cognitive Reflection Test) were the most likely to display ideologically motivated cognition.”24

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The answer surely cannot be that we aim to make students less knowledgeable, less skilled and less reflective. Before getting to some solutions that might work, it is important to examine whether or not motivated reasoning is the culprit or whether it is actually cognitive biases at work. This matters since the latter seems to present more available and palatable remedies.

Is motivated reasoning actually to blame? We already encountered one study that suggests it is. Kahan’s finding that those scoring high on the Cognitive Reflection Test were more susceptible downplays the role of heuristics (the mental shortcuts that the boundedly rational use to make up for lack of time, information, and ability) in identify confirming conclusions. But, most of the effort to show that motivated reasoning is a problem independent of cognitive biases comes through efforts to identify the causal logic at work.

Ziva Kunda posits three causal mechanisms for motivated reasoning. She finds that the motivation causes subjects to perform biased searches within their own memories to identify self-serving memories, then use a biased set of statistical heuristics (or inferential rules) to construct self-serving beliefs, and finally, they unevenly weigh evidence, again in manner that is self-serving.25

Similarly, Strickland et. al. identify three casual mechanisms: “a prior attitude effect, a confirmation bias, and a disconfirmation bias.”26 The prior attitude effect occurs as people selectively consume information that conforms to their prior attitudes about issues. The confirmation bias is closely related, as they avoid contrary information. The disconfirmation effect is perhaps most interesting. This is where individuals, when presented with information that contradicts their prior beliefs will spend more time examining the information in an attempt to counterargue against it.27 As we know from earlier, subjects with greater knowledge, skills, and reflective tendencies will be more successful at developing successful counterarguments.

Another piece of evidence supporting the existence of motivated reasoning comes from functional Magnetic Resonance Imaging (fMRI) studies that show motivated reasoning occurs in parts of the brain associated with emotion. One of the debates about motivated reasoning is that the effects it purports to explain are truly the result of (improper, but) “cool” cognitive process, rather than “hot” affective processes. Tests using fMRI indicated activity in the emotion centers of the brain when committed partisans were given “reasoning tasks involving judgements about information threatening to their own (presidential) candidate.”28 This data supports the argument that emotions and identity protection drive flawed reasoning, rather than cognitive biases or constraints.

What educators can do and why this matters at West Point

Accepting that motivated reasoning is a real phenomenon that causes people to perform reasoning tasks in flawed ways resulting in incorrect and divergent views of objective reality, what can educators do about it? This problem is particularly acute for educators at West Point. Graduates from West Point will go on to be members of a democratic polity that have to engage

in public debate at some level over public policy decisions. In this regard they are not much different than members of the rest of society, expect that they are considered part of one of the most trusted institutions in the U.S. They are also elite in a certain sense, having a degree from a top tier liberal arts school and therefore hold some burden to participate in democratic politics in a responsible manner. They also have the unique professional responsibility of providing “the best military advice” to the civilian decision-makers. Such advice must be free of partisan bias. Many will also have to evaluate intelligence and policy-options that have national security implications. To do so effectively, they need to have as accurate of a view of the world as possible. Motivated reasoning places all of these normative goals in jeopardy as it makes officers less likely to engage in rational dialogue with other citizens, biased in regard to their advice to policy-makers, and distorted when evaluating intelligence.

As noted above, simply teaching cadets more information and skills can have the wrong effect if they use these skills to enhance partisan tendencies and defend erroneous beliefs. Yet, no teacher could seriously advocate for not teaching knowledge and skills. Since it has been shown that affect is part of motivated reasoning, perhaps they could aim to remove all affect from teaching and focus purely on cognition. While this is probably impossible when dealing with political issues that seem to have inherent connections to important aspects of people’s identities, it may not even be ideal if it were. Some studies show that affect plays an important role in enabling students to transfer classroom lessons into the real world.29

Furthermore, there is evidence that when faced with sufficient contradictory information, the anxiety felt by motivated reasoners increases and they eventually reach a “tipping point” where they update their beliefs in accordance with the new information. The increasing anxiety suggests that “the mechanism that generates the tipping point and leads to more accurate updating may be related to the theory of affective intelligence.”30 Affective intelligence theory says that when unfamiliar stimuli produce discomfort subjects actively try to learn more about the stimuli to reduce their discomfort. This learning process leads to belief updates.31 So, there is a limit to how much contradictory information a person can ignore or discount.

Another study examined the impact of increasing student’s political knowledge and media literacy as a means to reduce motivated bias. It found that the former did not have any impact (supporting the findings reported earlier that increased knowledge is not the cure) but the latter did. Media literacy education reduces motivated biases “by cultivating skills for judging accuracy and developing commitment to a norm of accuracy.”32 Media literacy current has small place in the core American Politics course taught at West Point. A course on the media is available, but most of the students will be social science majors. Relatively few cadets at West Point receive media literacy training, so few are equipped with the knowledge to discern media sources that strive for accuracy from ones that strive to persuade.

Other scholars also note that accuracy goals within reasoners are an important counter to motivated biases. Kunda argues that people can be motivated “to arrive at a particular, directional conclusion,” meaning they are motivated to find they answer that is most pleasing, or they can be motivated to “arrive at an accurate conclusion.”33 Many other scholars have adopted

29 Immordino-Yang, Mary Helen, and Anotonio Damasio. 2007. "We Feel, Therefore We Learn: The Relevance of Affective and Social Neuroscience to Education." Mind, Brain, and Education 1 (1): 9.
31 Ibid. 566.
this concept of directional vs accuracy motivation. The idea here “is that all reasoning is motivated” and that accuracy goals motivate subjects “to seek out and carefully consider relevant evidence so as to reach a correct or otherwise best conclusion, whereas “partisan goals…motivate them to apply their reasoning powers in defense of a prior, specific conclusion.”

Finally, Dan Kahan finds that “science curiosity” is associated with a lower degree of motivated reasoning. Science curiosity is the tendency of people to seek out scientific information for its own sake. It differs from scientific knowledge, which as Kahan showed earlier, can actually exacerbate the problem of motivated reasoning about science related issues such as climate change because it enables those with more knowledge to better reject evidence that contradicts their preferred outcome. Science curiosity instead seems to be something of a mindset.

For educators at West Point, who need to produce future civic leaders, professional officers prepared to offer their best military advice, and capable intelligence and policy analysts, there is a need to combat the phenomenon of motivated reasoning. Within the social sciences, they can do this by teaching students more about the world and making them more capable of analyzing information. But, these alone are not enough, and in fact alone, knowledge and skills may make the problem worse. Social science educators can add media literacy to their curricula, but the most important thing for West Point educators may be the “inspire” aspect of their mission. The most effective counter to motivated reasoning is for students to be driven to be accurate, to be curious (more research is needed to see if Kahan’s “science curiosity” has a corollary of “social science curiosity”), and to see the world as it actually is. It is not clear from the existing literature exactly how to develop accuracy goals or a curious mindset. Further research is needed to determine what techniques can best accomplish this important task.

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Immordino-Yang, Mary Helen, and Anotonio Damasio. 2007. "We Feel, Therefore We Learn: The Relevance of Affective and Social Neuroscience to Education." *Mind, Brain, and Education* 1 (1): 1-10.


