

**Moral Disagreement across Politics is Explained by Different Assumptions about who is
Most Vulnerable to Harm**

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Stephen Vaisey contributed to conceptualization and writing. Kurt Gray contributed to

conceptualization, design, funding, supervision, and writing. All materials, including pre-

registrations are available online:

https://osf.io/gubsv/?view_only=84a4ccb9f65c404d8d16805364887bdb

Abstract

Liberals and conservatives disagree about morality, but explaining this disagreement does not require different moral foundations. All people share a common harm-based mind, making moral judgments based on what seems to cause harm—but people make different assumptions of who or what is especially vulnerable to harm. Liberals and conservatives emphasize different victims. Across eight studies, we validate a brief face-valid assessment of *assumptions of vulnerability* (AoVs) across methodologies and samples, linking AoVs to scenario judgments, implicit attitudes, and charity behaviors. AoVs, especially about the Environment, the Othered, the Powerful, the Divine, help explain political disagreement about hot-button issues surrounding abortion, immigration, sacrilege, gay rights, polluting, race, and policing. Liberals seem to amplify differences in vulnerability, splitting the world into the very vulnerable versus the very invulnerable, while conservatives dampen differences, seeing all people as similarly vulnerable to harm. AoVs reveal common cognition—and potential common ground—among moral disagreement.

Statement of Limitations

The present research synthesized cross-sectional and multi-wave data, self-report and implicit measures, and combined correlational with experimental research. This methodological variety balanced many strengths and weaknesses across studies. Yet, there remain numerous limitations to consider when evaluating the implications of this research. One limitation on the inferences that can be drawn from these data is that all participants were located in the United States. Although we were primarily concerned with understanding political differences in the United States, and we employed one high-quality national sample, most of our data were not nationally representative. These limitations leave generalizability to the U.S. population unclear, and cross-cultural generalizability unknown. Additionally, we focused on how perceptions of the vulnerability of moral patients can help us understand moral judgement and political differences. Yet, patients are only one part of the equation of morality. Future research must also consider perceptions of moral acts and moral patients for a fuller picture. Finally, the current research was designed to understand liberal-conservative differences in morality broadly. Politics impinge on a variety of (often intersectional) identities. Further research needs to examine the role of identity in assumptions of vulnerability and their relationship to politics and moral judgment more closely.

Moral Disagreement across Politics is Explained by Different Assumptions about who is Most Vulnerable to Harm

Moral disagreement between liberals and conservatives is obvious, but the drivers of this moral disagreement are less obvious. Although it sometimes seems that liberals and conservatives have different moral minds (e.g., Haidt & Joseph, 2004), research finds that moral judgment revolves around concerns about harm and victimization (e.g., Ochoa, 2022; Schein & Gray, 2015). Our shared harm-based mind does not rule out the existence of moral pluralism or political disagreement, as some suggest (Graham et al., 2018), but instead parsimoniously explains moral differences. Everyone cares about protecting vulnerable entities from harm, but different people may make different assumptions about who or what is especially vulnerable to victimization. In this paper, we demonstrate how different *assumptions of vulnerability (AoVs)* explain political disagreement on many hot-button issues that are dividing society today. We also discover overarching differences in AoVs between liberals and conservatives that connect to broader ideological debates about vulnerability revolving around individual versus group differences.

Grounding moral disagreement in assumptions of vulnerability helps to bridge a scientific divide between the moral world and our moral mind. The moral world features clear differences between liberals and conservatives, with people on the left and the right arguing strongly against each other's moral positions on the environment, immigration, the nature of racism, religious freedoms, etc. Despite these differences, recent research highlights how all moral cognition seems to rely on a harm-based template, with people condemning acts based on how harmful they seem (Ochoa, 2022; Schein & Gray, 2018). If liberals and conservatives make different assumptions about who or what is especially vulnerable to harm, then it could parsimoniously

explain how moral differences can grow out of common cognitive processes, without needing to posit distinct cognitive foundations.

In the current research, we examine assumptions of vulnerability towards a variety of targets, explore how these AoVs differ across the political spectrum, and study how AoVs can help explain political differences in both popular measures of morality (i.e., the Moral Foundations Questionnaire; Graham et al., 2011) and reactions to many hot-button moral issues. We first develop brief, face-valid items to measure AoVs and explore contentious debates by applying them to four ad-hoc themes, *the Environment*, *the Othered*, *the Powerful*, and *the Divine*. Our studies show that AoVs both predict important real-world behaviors and can be manipulated to causally affect moral judgements. Importantly, appreciating the power of assumptions of vulnerability to drive moral judgments helps create moral understanding across political divides, because it allows partisans to recognize their common moral currency of harm across issues. Before presenting these studies, we review the theoretical rationale that guided our research.

A Popular Account of Political Differences within Moral Judgment

Disagreement between liberals and conservatives is obvious and exists by definition, because liberalism¹ and conservatism represent different political philosophies and competing moral commitments. Differences between liberalism and conservatism often revolve around questions of tradition and hierarchy/inequality (Jost et al., 2003), with conservatives more likely to support the continuation (i.e., the “conservation”) of traditional social structures, and also

¹ Some may characterize this position more as *progressivism*, to distinguish from the ‘liberalism’ of classical liberalism, but to stay consistent with past work in social psychology and with lay discussions of political differences, we use the term of liberal and conservatives

tolerate hierarchy/inequality because it helps promote social order. Psychological studies connect these political differences to various interpersonal and cognitive dispositions (Womick & King, 2021), which may align more with different values (e.g., Jones et al., 2018; Schwartz et al., 2010). The underlying roots of these political differences are often complex, ranging from motivation (e.g., Jost et al., 2003), to identity (Hogg, 2007), existential concerns (e.g., Greenberg et al., 1990), brain structure (Kanai et al., 2011), and even genetics (Lewis & Bates, 2014).

Moral Foundations Theory (MFT) is a popular theory that documents moral disagreement between liberals and conservatives through a questionnaire called the Moral Foundations Questionnaire (Graham et al., 2011). For example, liberals are more likely to condemn income inequality (“it’s morally wrong that rich children inherit a lot of money while poor children inherit nothing”) whereas conservative are more likely to support traditional gender roles (“men and women each have different roles to play in society.”) These moral differences make sense given the definitional differences between liberalism versus conservatives surrounding hierarchy/inequality and tradition, but MFT ascribes these differences to deep and distinct mechanisms in the mind (Haidt, 2012).

Moral foundations theory argues that liberals and conservatives possess different “moral foundations” (Graham et al., 2009). The inspiration for this theory is a modular model of the mind, which argues different evolutionary and cultural challenges are solved by our mind having a toolbox of functionally separate mechanisms (Haidt & Joseph, 2004). In the past decades, the number of these hypothesized moral mechanisms has increased from three (Rozin et al., 1999), to four (Haidt & Joseph, 2004), to five (Graham et al., 2009)— care, fairness, loyalty, authority, and purity—and now 6 (e.g., Atari et al., 2023).

Moral foundation theory argues for a “conservative advantage” in morality (Haidt, 2012), whereby right-leaning people enjoy a richer set of moral concerns. Liberals narrowly focus on the individual-centric concerns of care and fairness (Haidt & Graham, 2007), but not the group-centric concerns about loyalty, authority, and purity. In contrast, conservatives are argued to focus somewhat less on care about care and fairness, but—unlike liberals—attend much more to loyalty, authority, and purity (Graham et al., 2009). Calling liberals “individualistic” and conservatives “group-focused” seems inconsistent with progressive claims for solidarity with labor movements (Gramlich, 2021), or conservative arguments against taxation and for self-reliance (Fine, 1992), but these labels help explain political differences among the items selected for the MFQ.

The biggest problem for MFT is that emerging evidence fails to support the idea of moral foundations in their original “foundational” sense of different mechanism. Moral judgments about various values are simply too interconnected to be separate modules (Graham et al., 2011), and—as we will soon see—moral judgments are predicted by perceptions of harm. Leaving aside claims about cognition, even descriptive claims about political differences are questionable. The idea of a “conservative advantage” revolves around a set of moral judgments scenarios that were explicitly designed to showcase right-leaning perspectives (Haidt, 2012): MFT loyalty items focus on patriotism, MFT authority items focus on obedience to church leaders, and MFT purity items focus on religious and sexual purity (Graham et al., 2009, 2011).

Although conservatives do care more about obeying conservative-leaning authority figures (e.g., preachers and police), liberals care more about obeying authority figures when those authority figures are liberal-leaning (e.g., environmentalists; Frimer et al., 2014). Likewise, conservatives do care more about the sexual chastity of teenagers, but liberals care more about

the purity of the natural world and health (Frimer et al., 2015, 2017). If you hear someone discussing how they feel purified after juice cleansing at a yoga retreat, they are unlikely to be conservative.

Some recent formulations of moral foundations have claimed only that they are developmentally-prepared constructs subject to the forces of both nature and nurture, but this formulation seem too broad, neither distinguishing it from other theories nor providing specific testable hypothesis (Graham et al., 2018). How can one disprove the idea that nature and nurture are both important to morality? At the same time, proponents of MFT simultaneously persist in endorsing the “distinct mechanisms” idea (Graham et al., 2018), arguing that the distinctness of moral concerns is illustrated by moral judgments of purity.

Purity is operationalized by bizarre scenarios including eating pizza off a corpse (Clifford et al., 2015) and consensual incest (Haidt, 2001). However, a recent review of the literature additionally found that purity was too messy and ill-defined to support any claims about its specialness in cognition (Gray, et al., 2022). Other work shows that judgments of purity are extremely correlated with perceptions of harm (Gray & Keeney, 2015; Ochoa, 2022). Indeed, a close look at the data even from the original MFT papers casts doubt on claims of distinctness: the overlap *between* moral foundations is often higher than overlap of items *within* moral foundations (Graham et al., 2011). For example, the loyalty foundation correlates .88 with authority, which is much higher than .54—the average amount that loyalty items load onto the loyal foundation (Graham et al., 2011; Figure 3).

Despite the lack of evidence for distinct moral mechanisms in the mind, different political parties use different keywords in rhetoric (Feinberg & Willer, 2019)—conservatives clamor for

“freedom” and liberals for “fairness.” However, liberals do care about freedom (e.g., from the effects of slavery; Kendi, 2019) and conservatives do care about fairness (e.g., seeing affirmative action as unfair; Gramlich, 2023). This complexity suggests that rather than holding fundamentally different moral minds, people on both ends of the political spectrum care about freedom and fairness, albeit in different ways. Classic papers in moral psychology also warn us about confusing people’s explicit moral rhetoric with the basic cognitive processes of moral judgment (Haidt, 2001).

Not only do liberals and conservatives fundamentally appreciate similar values, research on social cognition finds the idea of different cognitive foundations untenable (see Cameron et al., 2015). Drilling down into human social cognitive architecture, it is clear that the mind is not separated into functionally separate chunks (Barrett, 2009). Evolution does not solve the challenges of complex social living by developing separate modules—which are costly—but instead by developing broadly distributed networks that are shared across social judgment tasks (Barrett & Russell, 2014). In the brain, moral judgments are not themselves distinguishable from other social-affective judgments and so it is unlikely that different flavors of moral judgments have separate evolved mechanisms (Barrett, 2013).

The Dyadic Morality Account of Political Differences in Morality

In contrast to Moral Foundations Theory, which argues for deep differences in the minds between liberals and conservatives, we suggest that we all have *a harm-based moral mind*. This idea is formalized as the Theory of Dyadic Morality (TDM; Schein & Gray, 2015, 2018) which emphasizes similarities in moral judgment among all people. This theory argues that moral judgments revolve around a common template of harm. Drawing from theories of cognitive

categorization (Murphy, 2004; Rosch, 1978), TDM outlines how moral judgments are made by comparing a potentially immoral act to a template (e.g., a schema, or exemplar set) involving two interacting minds—a dyad of an intentional agent causing damage to a vulnerable patient (A-P). This dyadic template revolves around harm, specifically interpersonal harm, or what you might call the *victimization or mistreatment* of someone or something vulnerable.

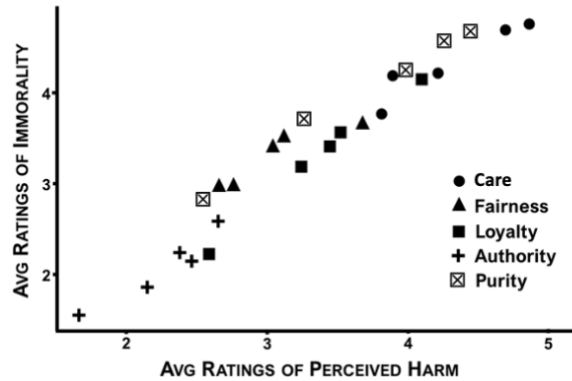
The theory of dyadic morality—and the related “affective harm account” (Gray et al., 2022), which connects TDM to affect—are domain-general theories of categorization (McHugh et al., 2022), arguing that the processes of moral judgment can be understood by looking at other theories of cognitive categorization. For example, judgments of how much someone is African American are made by comparing people to a cognitive template of that race—what we often call a stereotype (Gawronski et al., 2012). With morality, our cognitive template is grounded in interpersonal harm or victimization. The key prediction of dyadic morality is that acts are perceived as immoral to the extent that they are perceived as harmful. Importantly, this is not the random “harm” of stubbing your toe, but the interpersonal harm of victimization. Acts can be placed along a continuum based on how harmful/victimizing they seem, and a harm-based template suggests that this continuum should very well predict people’s moral condemnation.

At the maximal end of the dyadic/victimizing continuum are acts where someone with a deep capacity for intention perpetrates intense suffering on a very vulnerable target, like a corporate CEO burning a child alive. These “most harmful” acts are typically seen as “most immoral”—that is, they are most robustly categorized as belonging to the concept of “immorality”. At the minimal end of the continuum are acts where someone unintentionally causes mild suffering to an invulnerable agent, like a teething baby biting the calloused hand of an ultimate fighting champion. These “least harmful” acts are typically seen as “least immoral.”

Even if different kinds of moral violations seem categorically different (e.g., punching a kid vs. masturbating to bizarre pornography), research reveals that people morally condemn acts based on perceptions of harm (Ochoa, 2022).

One key claim of TDM is that harm is an intuitive perception, not a reasoned rationalization (Chalmers, 1997; Epley & Waytz, 2009; Haslam et al., 2008; Waytz et al., 2010): acts are wrong to the extent that they intuitively seem victimizing (Schein & Gray, 2018). In people's judgments, harm is not something that is "objectively present" or "objectively absent," but instead something that people "perceive" to be present or absent in varying degrees (Schein & Gray, 2018). Consistent with an intuitionist view of the moral mind (Haidt, 2001), harm is perceived rapidly and intuitively, such that acts are evaluated as more or less immoral relative to the *amount of intuitive perceived harm* associated with it (Ochoa, 2022; Schein & Gray, 2018). Evidence for the idea that a continuum of perceived harm underlies the continuum of moral judgment comes from Ochoa (2022), who asked liberals and conservatives to provide their intuitions about the harmfulness and immorality of scenarios drawn from the Moral Foundations Questionnaire. He found that perceptions of harm/victimization predict moral wrongness extremely well, even for acts that seem "objectively" harmless (Figure 1). In fact, every extant study where researchers assess perceptions of harm on the same scale format as moral judgment reveals that moral judgments are extremely well predicted by perceptions of harm (see Figure 1).

Figure 1. *Perceived harm predicts moral ratings independently of moral foundations. Data from Ochoa (2022); figure reprinted with permission from Gray and colleagues (2022).*



That harm is a matter of perception allows it to persist even in scenarios designed by scientists to be “objectively harmless.” For example, people can—and do (Gray et al., 2014)—see some amount of harm in a scenario of consensual incest designed to be harmless (Haidt, 2001). The perceptual nature of harm also allows it to vary between liberals and conservatives, which may help explain their moral disagreement.

Although much emerging evidence supports the idea that moral cognition revolves around a common question of harm, one limitation with existing work on this theory is how to explain political moral differences. How can moral disagreement arise from a common cognitive template (Graham, 2015)? If liberals and conservatives have a common moral mind—generally relying upon perceptions of harm—how can they make such different judgments toward different targets? Why are liberals so much more likely than conservatives to support #BlackLivesMatter and advocate for protecting Black Americans (Horowitz et al., 2023), whereas conservatives are more likely than liberals to support #BlueLivesMatter and advocate for protecting police (Brown, 2017)? We suggest that political differences in moral judgment can be explained by

different *assumptions of vulnerability*, which are assumptions about who or what can be victimized.

Liberals and conservatives may have different perceptions about how much different targets are especially susceptible to being victimized, and these underlying perceptions can help explain different moral judgments about issues involving these targets. In this way, assumptions of vulnerability can bridge the gap between a common harm-based moral mind and descriptive differences in moral judgment. Everyone cares about protecting the vulnerable from harm, but not everyone agrees on who or what is the most vulnerable to harm.

Assumptions of Vulnerability

How much can a CEO be a victim? In 2022, the CEO of the marketing company Hypersocial posted a selfie of himself crying. He claimed that he was filled with grief because he had to lay off two employees, but many people online argued that he was not genuinely suffering—and that if he actually wanted to help them, he could have promoted them in his post, rather than focusing on himself. The CEO argued it was “the most vulnerable thing” he had done (Tabahriti, 2022), but was he really vulnerable?

Vulnerability is about being susceptible to victimization or harm, and, on the surface, it seems easy to roughly determine whether an entity is vulnerable. Someone is vulnerable to physical harm if they bleed after being struck or cut. Someone is vulnerable to emotional harm if they cry after betrayals or insults. Yet, even these “objective” signs are only cues to actual suffering. Traumatized individuals can experience grievous injuries and not feel pain, and people without visible injuries can still feel chronic pain (e.g., Wall, 1979). Yet, vulnerability often requires the mental guesswork involved in making assumptions. Because of the problem of other

minds (Dretske, 1973; Putnam, 1975), we can never experience the suffering of others (Scarry, 1987) and so we are left to assume how much people are vulnerable to harm.

Assumptions of vulnerability (AoV) refer to how vulnerable (i.e., susceptible) people assume (i.e., suppose to be the case) an entity is to harm, victimization, and mistreatment. We use the word “assumption” because the problem of other minds makes it difficult to have certain proof of someone’s vulnerability. Even when someone bleeds or shed tears (like our crying CEO), people may make different assumptions about their true inner state.

AoVs are a subset of what Turiel calls “informational assumptions,” beliefs about the nature of the world that help to shape differences in moral judgments (Turiel et al., 1987, p. 189). Informational assumptions can revolve around many things, including any of the three elements of the moral dyad, whether 1) intentional agents (iA; who is capable of intending harms?) or 2) the method by which others are damaged (\rightarrow d; is witchcraft a viable way to harm someone?) or 3) the moral patients (vP; who is a legitimate target of damage?). From this view, AoVs are most relevant to how much someone views a given target as a potential moral patient. Research supporting the Theory of Dyadic Morality (Schein & Gray, 2018) already provides some evidence of the importance of AoVs: people more harshly condemn acts that harm vulnerable targets like children and those with developmental disabilities than typical adults (Gray & Wegner, 2009).

As an informational assumption, AoVs—while being relevant to morality—are not intrinsically moral or immoral. For example, there’s nothing inherently evil about children being more or less susceptible to victimization. The conceptual separation between AoVs and morality is important for scientifically explaining moral differences, especially since it helps escape the

tautology found in other explanations of moral disagreements across politics. Consider the newer, weaker formulation of MFT, which argues that political differences are explained by liberals and conservatives relying on different developmentally-prepared moral concerns (Graham et al., 2018). In plainer terms, this argument is that differences in moral judgments are driven by differences in moral concerns, which are themselves the tendency to make certain moral judgments. In even plainer terms, the MFT argument is that “differences in morality” are driven by “differences in morality.” This tautology may seem unfairly simple, but consider that the measurement of moral foundations (i.e., the MFQ; Graham et al., 2011) involves assessing people’s moral judgments towards the specific moral concerns that moral foundations are thought to explain. For instance, MFT argues that the “purity foundation” explains moral concerns about sex and religion, but then uses ratings of sex and religion to assess reliance on the purity foundation (see Schein & Gray, 2018, p. 47). Judgments about sex and religion should clearly predict judgments about sex and religion.

To move beyond this tautology, the study of political differences in morality must ground moral differences in constructs that are not intrinsically about morality. These may involve intention (Cushman, 2008), causation (Hart & Honoré, 1985), foresight (Baldwin, 1979), norms (Nichols, 2002), emotion (Greene et al., 2001) and identity (Hardy & Carlo, 2005). Again, while these are all relevant factors that go into moral judgments, they are not themselves intrinsically moral—instead, they exist at a lower or more basic level of analysis (Cushman & Young, 2011). AoVs provide another construct that feeds into morality which is not itself ‘moral,’ and which may therefore help explain political differences across morality. If liberals and conservatives make different assumptions about who or what is especially vulnerable to victimization and

mistreatment, and perceptions of victimization and mistreatment drive moral judgment, then AoVs can be said to explain moral differences.

Political Differences in AoV

Whether undocumented immigrants are especially vulnerable to victimization depends on who you ask. Liberals typically emphasize the vulnerability of people in this group, highlighting their moral patiency, including the dangers of crossing the border, the pain that children might face in internment camps, and the suffering that families endure when people are deported back to their original countries (Buchman, 2022; Lind, 2019; McNulty, 2018). In contrast, conservative depictions of undocumented immigrants are less likely to emphasize vulnerability, highlighting how people in this group can be tough and threatening, and include drug-cartel members who shrug off firefights with police, and potential rapists who are much stronger than their victims (Miller, 2022; Conservative Zone, 2018; Fox News, 2017). We suggest that these different AoVs help predict moral disagreement between liberals and conservatives about immigration policy. If one is trying to protect vulnerable immigrants, opening borders seems like a moral imperative. If one is trying to protect Americans from the predations of invulnerable immigrants, then it seems like a moral imperative to close the borders. The importance of assumptions of vulnerability to moral judgments also seems clear in the abortion debate, where conservatives are more likely than liberals to see first-trimester fetuses as living souls that are vulnerable to mistreatment (Akin, 2002).

In addition to disagreeing on the AoVs about fetuses and undocumented immigrants, we suggest that liberals and conservatives likely make systematically different assumptions of vulnerability about several targets, and these different AoVs help to predict differences in moral

judgment. For example, liberals and conservatives respond differently to questions within the Moral Foundations Questionnaire (Graham et al., 2011), and different clusters of AoV judgments might help us understand these descriptive differences. Conservatives judge it more immoral than liberals to disrespect authority figures like the police, and these differences may partially arise because conservatives are more likely to believe that police officers are susceptible to mistreatment. Anecdotal evidence supports this possibility. For instance, an article by the conservative-leaning National Police Association, titled “The Disrespect is Getting Dangerous,” argued that lack of respect for officers leads inevitably to them being harmed (Smith, 2019).

There may be as many political differences in AoVs as there are issues to disagree upon, but it may be useful to outline some useful themes of AoVs that might cluster together and help to make sense of current political debates. As with “moral foundations” these themes may provide some concrete language for discussing political disagreements, as well as a rough taxonomy that explicitly showcases how a harm-based moral mind allows for *moral pluralism*—moral differences across people (Shweder & Haidt, 1993).

However, unlike the moral foundations, we make no claims that any AoV themes carve nature at its joints to reveal natural moral kinds. Instead, they are merely *ad hoc* clusters of some informational assumptions about the vulnerability of potential moral patients. We are not trying to create an authoritative list of all possible areas of moral difference. Given past work on our common harm-based moral mind and the scientific untenability of a modular mind, we are *especially* not claiming that these themes represent any kind of distinct cognitive mechanism. Instead, we are teasing out sets of similar and salient targets that might make sense of known variability in moral judgment.

To help explain political disagreement, we identify four ad-hoc themes: *The Environment*, *The Other*, *The Powerful*, and *The Divine*. We expected two (The Environment and The Othered) to have higher AoVs among liberals, and two (The Powerful and The Divine) to have higher AoVs among conservatives.

The Environment. Environmental protection is rated as a top governmental priority by 85% of Democrats but only 39% of Republicans (Pew Research Center, 2020). This difference may be explained by assumptions of vulnerability, with liberals seeing environmental entities like coral reefs and rainforests to be more vulnerable to harm, as compared to conservatives. Of course, *The Environment* may not be as vulnerable as human beings, but pro-environmental movies (e.g., Fern Gully, Avatar) often depict trees and forests as sentient beings that can suffer and who are in danger of being victimized. Similarly, children and adults alike anthropomorphize the environment (e.g., “Mother Nature”; Gebhard et al., 2003) as a vulnerable entity and ascribe mental capacities and moral worth to animals and ecosystems (Rottman et al., 2021). Liberals are especially likely to include environmental targets in their circle of moral concern (Waytz et al., 2019).

The Othered. Sociology frequently understands social identities as relational (i.e., groups define themselves in relation to other groups) and organized through the lens of power structures (Callero, 2003; Okolie, 2009). Critical theorists argue that, in America, the dominant group against which *others* are defined and judged are White cis-gendered Christian men, and that those who do not belong in this group are “othered” (e.g., Devos & Banaji, 2005). Whether or not one endorses critical theories, the term “othered” provides a useful name for groups that are outside the center of power in society. AoVs about *The Othered* include perceptions of how vulnerable to harm are members of groups that are outside the boundaries of the dominant group

(e.g., illegal immigrants, Muslims, and transgender people). Liberals seem to emphasize the vulnerability of the othered, whereas conservatives are more likely to emphasize how the othered are not victims, and perhaps even perpetrators (e.g., believing that transgender women would rape other women if they were allowed to use the same restroom; Prestigiaco, 2016).

The Powerful. At first blush, people in positions of power, like corporate leaders and state troopers, are unlikely to be seen as vulnerable. In the dyadic framework of agents and patients, The Powerful seem more suited to be agents, the intentional doers of morality, than patients who suffer harm. However, many people—especially conservatives—seem to emphasize the vulnerability of people in positions of power. For instance, while conservatives might recognize the powerful status of institutional leaders, defenders, and historically privileged identities, they might also believe that they are disadvantaged in some ways (Cooper, 2020; Takahashi & Jefferson, 2021). Liberals on the other hand, might focus on the role of the powerful in the oppression of marginalized identities and strip them of the capacity for victimhood (Lloyd, 2013).

The Divine. For some, God and Jesus are merely cultural ideals, and the Bible is just a book. For others, God and Jesus are living beings with rich mental lives, and the Bible is much more than a book (Altemeyer & Hunsberger, 1992). For instance, it is common practice in the United State legal system to guarantee the veracity of testimony by swearing to tell the truth with one's hand on the bible (Rosefield, 2014), and it is a common Christian teaching that sins hurt God (e.g., "And do not bring sorrow to God's Holy Spirit by the way you live." Ephesians 4:30). Although it seems harder to victimize supernatural entities than people, clearly many see the Bible as a living document, and view God as capable of suffering mistreatment. Given links between politics and religion (Womick et al., 2021), we predict that conservatives will be more

likely than liberals to see The Divine as vulnerable and this perception will help explain their increased condemnation of violations like desecrating the Bible or blaspheming God.

Overarching Political Differences. In addition to examining political differences in AoVs about the Environment, the Othered, the Powerful and the Divine, it is also useful to consider how liberals and conservatives might generally see AoVs. To anticipate the pattern we reveal in our data, we highlight how committed liberals often divide the world into the highly vulnerable versus the highly invulnerable. Historically, the Karl Marx painted society as a struggle between vulnerable workers and the invulnerable ruling overclass (Avineri, 1968), and today progressives seem to cleave the world into “oppressed” and “oppressors”—true suffering victims and their invulnerable victimizers (Freire, 2005). From the perspective of extreme liberals, questions of vulnerability seem to revolve mostly around group membership and identity, with people in Othered social categories being very vulnerable to victimization whereas the Powerful seem completely invulnerable to victimization (Kendi, 2019).

In contrast, conservatives seem to reject this group-based dichotomy of oppressors versus oppressed, seeing all people as relatively equally vulnerable to harm. Each of us is “created equal” (Declaration of Independence, 1776) and—as human beings—can be harmed by violence. Each of us also has hopes and dreams whose denial can bring disappointment. Consider the conservative-led opposition to affirmative action, which was argued to unfairly victimize qualified White college candidates over Black college candidates (Cohen, 1995). This critique relies upon the idea that both these students—regardless of their race—can suffer (Hughes, 2024). This more individualistic understanding of vulnerability de-emphasizes statistical group-based differences in potential victimization, suggesting that most anyone can be oppressor or oppressed depending on people’s circumstances and choices (Krause, 2015). People on the

political right may in fact reject oppressed vs. oppressor framings more broadly in favor of views that emphasize competition and meritocracy. Within this competition framing, everyone is vulnerable to losing but is participating in a fair game. Thus, in addition to left-right differences in who is vulnerable to harm, we may see those on the political right lump different targets together as equally vulnerable (rather than seeing the oppressed as highly vulnerable and oppressors as completely invulnerable).

Current Research

The current research is divided into three broad sections. In the first section (Studies 1-3), we focused on the idea of assumptions of vulnerability generally, measuring them towards a wide variety of targets, and assessing how they relate to measurements of political ideology, moral foundations, and moral judgments. In this initial section of this paper, we found that AoVs generally help explain political differences in moral judgments across political issues. In the second section (Studies 4-6), we explore whether AoVs about four specific themes—the Environment, the Othered, the Powerful, the Divine—can help explain political disagreement surrounding moral foundation questionnaire items and specific hot-button issues. We also explore the intuitive nature of AoVs with an implicit measure. In the third and final set of studies (Studies 7-8), we explored whether AoVs could predict specific moral behaviors (i.e., donations to real charities) and whether they might be impacted by experimental manipulations to change moral judgements.

Transparency and Openness

Our design, hypotheses, and analysis plan for all studies were preregistered at *As Predicted* and can be found in the project's OSF page:

https://osf.io/gubsv/?view_only=84a4ccb9f65c404d8d16805364887bdb. For all studies, we report all measures, manipulations, and exclusions. Sample size for all studies was intended to maximize power and was determined based on availability of resources. Data, analysis code, and experimental materials are available for download at the same OSF page. Data were analyzed using R. The studies have received ethical approval from the IRB of the University of North Carolina at Chapel Hill (“Judgement of Mind and Moral Decision Making”, Protocol 12-11585).

Section 1: Testing whether AoVs Help Explain Moral Differences

In the first set of studies (Pilot and Studies 1-3), we explored how perceptions of vulnerability can help us understand moral judgments across people and politics. In a Pilot study, we investigated whether assumptions of vulnerability regarding canonical (i.e., obvious) moral patients and agents were correlated with moral judgements. We predicted that the more people perceive a target as vulnerable, the more they will judge it immoral to harm them. Using canonical patients and agents provides a first face-valid test of this hypothesis, as people likely have different assumptions of vulnerability about targets that are obvious patients and obvious agents. Importantly, in the Pilot study, we also developed a face-valid and reliable set of items to capture general assumptions of vulnerability for different targets. We call these “AoV items.” They are designed to measure assumptions of vulnerability to harm, mistreatment, and victimization—related terms that people often use to describe when someone suffers from being treated unjustly.

In Study 1, we continued to explore the value of using AoVs to predict moral judgments by examining a wider variety of moral patients. We also examined the association between AoVs and political orientation by including some targets that stand at the center of highly politicized issues (e.g., a four-week-old fetus). Given the hypothesized association between AoVs, moral

judgments, and political orientation, Study 2 tested whether AoVs about specific targets (e.g., undocumented immigrants) predicts moral judgments related to issues at the center of current culture wars (e.g., questions of illegal immigration). This study provides the first test of the explanatory power of AoVs in helping to understand moral differences between liberals and conservatives regarding hot button issues at the center of politically polarized debates.

Some of the targets that exist at the center of moral political disagreements are less obviously moral patients (e.g., the Bible and the American flag) than others (e.g., living, breathing entities). Yet, our framework suggests that people who perceive these to be more vulnerable to harm also subjectively view them legitimately as entities that are capable of experiencing victimization and mistreatment. To test this possibility, in Study 3, we assessed how much people attributed vulnerability, “aliveness,” and other mind-related capacities to these targets, exploring how these ratings differed across the political spectrum. We expected that perceiving these types of targets as vulnerable is associated with greater mind-attribution and perceived aliveness.

Pilot Study

The first goal of this pilot study was developing questions to assess assumptions of vulnerability. As with the four AoV themes explored above, we are not claiming that these are the only or ultimate questions to measure AoVs. Rather, our aim was to develop some useful face-valid questions that tapped the general sense of how much someone or something is vulnerable to victimization and harm.

We also note that these items are worded to ask whether a target might be *especially* vulnerable to mistreatment, victimization, or harm. This was done to avoid potential ceiling

effects. In initial work on mind perception, questionnaires asked whether a variety of targets were capable of feeling pain or fear (e.g., Gray et al., 2007), but subsequent work often found ceiling effects for these questions when assessing normal human beings (e.g., Gray et al., 2011). We can all agree that people are generally capable of feeling pain. To avoid these ceiling concerns in our measurements of AoVs, we follow a tactic used in other work (e.g., Paap et al., 2020), making the criterion more stringent. Rather than just asking whether someone or something might be generally vulnerable, we asked whether targets might be *especially* vulnerable.

The second goal of this pilot study was to explore some simple criterion validity of these questions. Would responses to these AoV questions be higher for targets that generally seem more vulnerable (e.g., an orphan) versus less vulnerable (e.g., a professional wrestlers)? We also included some exploratory variables, reported in the Supplementary Materials, pp. 2-6.

Method

Participants. One hundred fifty two American participants completed the online survey via CloudResearch's MTurk toolkit. We excluded 13 participants who failed both attention checks. The final sample ($N = 139$ participants, 51.8% male, 46.8% female, 1.4% other; $M_{age} = 48.68$ years) was 80.6% White, 11.5% Black, 3.6% Latinx/Hispanic, 2.2% American Indian/Alaska Native, and 2.2% Asian. Education level spanned from no high-school degree through doctoral degree and income spanned from under \$25,000 to over \$150,000 per year. Modal education level was a bachelor's degree (52.5%), and the median income was \$50,000 - \$75,000 per year.

Materials and Procedure. In this within-subjects study, participants rated AoVs for six targets, three generally more vulnerable (Orphan Girl, Child with Down's Syndrome, and Newborn Puppy) and three generally less vulnerable (Fortune 500 CEO, Professional Wrestler, and Certified General Accountant).

AoV Items. Assumptions of vulnerability were assessed with three face valid items assessing a target's susceptibility to harm (henceforth *AoV items*). Each item was answered on a 5-point scale from (1) not at all vulnerable to (5) completely vulnerable. The items were,

"I believe that the following are especially vulnerable to being harmed"

"I think that the following are especially vulnerable to mistreatment"

"I feel that the following are especially vulnerable to victimization."

Descriptive statistics and reliabilities for each target are shown in Table 1. Note again that Cronbach's alpha hinges on the number of items within a scale, and our measure of AoVs includes only 3 items.

Results and Discussion

A dependent *t*-test was conducted to evaluate whether canonical patients were rated as higher on AoV items than canonical agents. AoV scores were aggregated across patients and across agents. As we predicted, participants rated canonical patients ($M = 4.02$, $SD = 0.80$) as more vulnerable than canonical agents ($M = 2.12$, $SD = 0.79$), $t(135) = 19.29$, $d = 2.39$, $p < .001$.

Table 1. Means, standard deviations, and Cronbach alpha for assumptions of vulnerability for each canonical patient and agent (Pilot Study).

Assumptions of Vulnerability	α	M	SD
Orphan Girl	.86	4.13	0.82
Child with Down's Syndrome	.84	4.15	0.82
Newborn Puppy	.85	3.80	1.07
Fortune 500 CEO	.85	1.85	0.91
Professional Wrestler	.77	2.42	1.03
Certified Accountant	.83	2.06	0.88

These initial results suggest that items used to assess AoV are indeed higher for targets people generally assume to be more (vs. less) vulnerable to harm, demonstrating some straightforward criterion validity. We next examined a broader range of targets and tested the ability of AoV items to predict judgments of moral concern.

Study 1: AoVs and Moral Concern Toward Different Targets

A key claim about AoVs is that they should predict moral judgments. This first study explored whether AoVs across a diverse set of targets predicted judgments of moral status. Of course, moral judgments can vary across political affiliation, and so this study also investigated whether AoVs differ across politics and whether these differences help predict differing moral judgment. For example, would conservatism predict both higher AoVs and higher ratings of moral status for fetuses? Importantly, despite liberals and conservatives assigning different AoV ratings across targets, we predict that AoVs will similarly predict moral judgments. In other

words, the predictive power of AoVs for morality should be similar across liberals and conservatives.

Method

Participants

There were 483 American participants who completed the survey online via CloudResearch. Our survey contained 7 attention checks and we only included in our final sample participants who passed at least six of these checks ($n = 102$ excluded before analyses)². The final sample ($N = 381$ participants, 225 male, 154 female, 2 other; $M_{age} = 35.96$ years) was 78.0% White, 7.6% Latinx/Hispanic, 7.1% Black, 6.0% Asian, and 1.0% American Indian/Alaska Native, 0.3% Native Hawaiian or other Pacific Islander. Education level spanned from no high-school degree through doctoral degree and modal education level was a bachelor's degree (53.3%). Income ranged from under \$25,000 to over \$150,000 per year and the median income was \$50,000 - \$75,000 per year. Sample size was determined in advance of the data collection, per preregistration.

Measures

Assumptions of vulnerability. Participants rated the perceived vulnerability of a total of twenty targets used in previous research on mind perception (Babies, chimpanzees, dogs, 4-week-old fetuses, frogs, God, robots, adult women, corporations, trees, spirits of the dead, patients in a persistent vegetative state (PVS), nuns, convicted criminals, civil rights leaders, teachers, terrorists, 5-year-olds, dictators, famous singers) using the three AoV items from the

² In all studies, we pre-registered more attention checks than reported. We realized that some of the attention checks we included might be tapping more into education than attention and decided to exclude these from consideration and analyze those who passed either all or all but one of the remaining attention checks.

pilot study, which were averaged to give an overall AoV score for each target. See Supplemental Materials (p. 7) for descriptive statistics and reliabilities for each target.

Judgments of moral concern. Participants evaluated the moral status of each of the twenty targets with two items (5-point scale from 1 = Not at all to 5 = Completely): “I believe that it is especially immoral to hurt the following” and “I think that the following are especially deserving of moral protection.” For each target, we created an average composite using these two items – see the Supplement (p. 7) for descriptive and reliabilities.

Political orientation. Participants answered the question “How would you describe your political views overall?” on a 7-point scale from 1 = Extremely Liberal to 7 = Extremely Conservative³ ($M = 3.57$, $SD = 1.75$).

Results

Assumptions of vulnerability and judgments of moral concern

Overall AoV and judgments of moral concern are plotted in Figure 2. Consistent with expectations and with the pilot study, canonical moral patients (e.g., babies and dogs) were seen as more vulnerable than other entities (e.g., robots and corporations), and AoVs appeared to track judgments of moral concern. A cross-classified, multi-level model that included random intercepts for participants and for moral targets, and random slopes for moral targets, found that AoVs predicted judgments of moral concern, $\beta=.48$, $p < .001$).

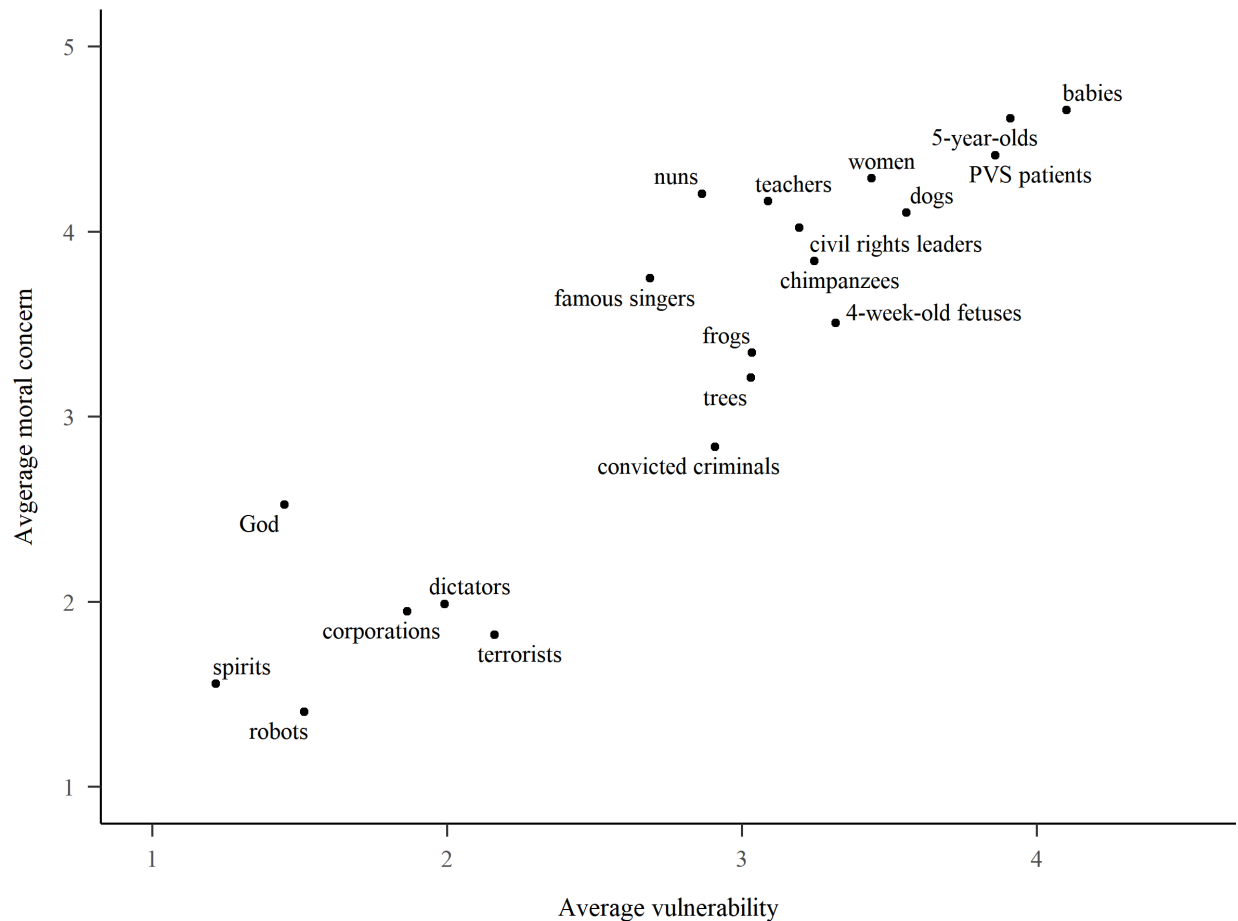
Do AoVs predict judgments of moral concern for both liberals and conservatives?

Although it can be difficult to argue for a null hypothesis, we explored this idea by conducting a similar multi-level model, with an interaction effect between vulnerability and political

³ In all Studies, ideology was measured on a 1 (Extremely Conservative) to 7 (Extremely Liberal) scale. In all cases, we reverse scored our ideology measure so that higher values indicate greater conservatism.

orientation. This interaction effect was not significant, 90% CI = (-.02, .07), suggesting that AoVs similarly predict judgments of moral concern across politics.

Figure 2. Relationship between vulnerability ratings and moral concern for each target (Study 1).



Differences in AoV across political orientation

We predicted liberals and conservatives would attribute different levels of vulnerability to certain targets. We found significant differences for almost all targets (full results reported in the Supplement, p. 11). Those on the left assigned more vulnerability (see Figure 3) (and moral status, see Figure 4) to animals, robots, criminals, teachers, and civil rights leaders (r 's ranged

from $-.12$ to $-.28$, all p 's $< .02$). Conversely, conservatives provided higher ratings on these dimensions for fetuses, God, and corporations (r 's ranged from $.13$ to $.41$, all p 's $< .003$).

Figure 3. Assumptions of Vulnerability Across the Political Spectrum (Study 1).

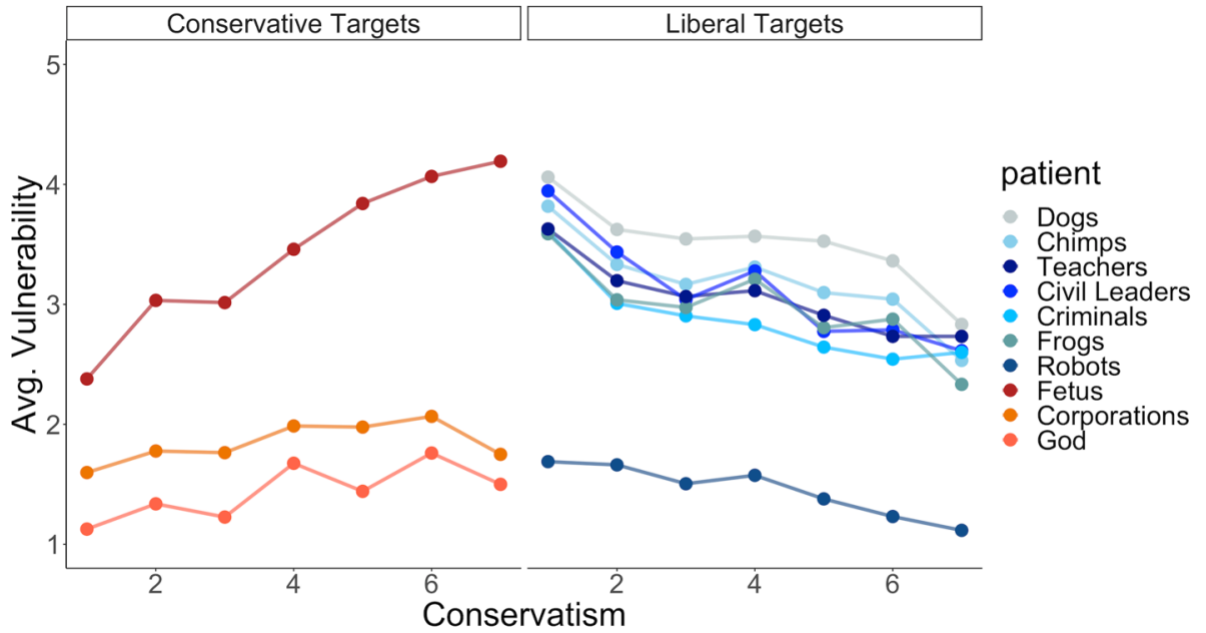
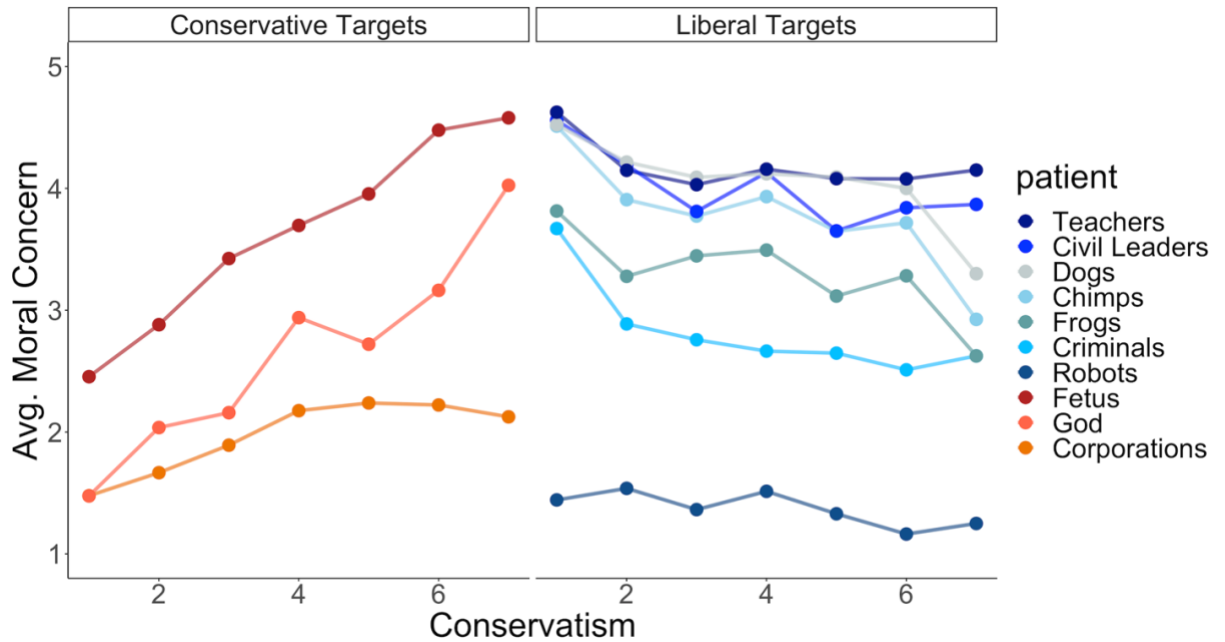


Figure 4. Moral Concern Across the Political Spectrum (Study 1).



Discussion

As predicted, AoVs were sensibly related to moral judgment. They explained significant variance with overall judgments of moral status across a diverse set of targets and accounted for significant variance in political differences in moral judgment, including toward fetuses and animals. This study revealed that AoVs accounted for significant variance in the general judgments of moral status toward targets, but would AoVs also help make sense of hot-button issues?

Study 2: AoVs Predict Morality above Ideology: Hot Button Issues

Americans are divided on many contentious moral issues, and Study 2 explored whether AoVs help explain this division. We examined six controversial issues and predicted that the different moral judgments provided by liberals and conservatives on these issues would be predicted by AoVs toward moral patients within these scenarios. More specifically, for issues ranging from gay marriage and flag burning, we expected AoVs would predict moral judgments made by liberals and conservatives, above and beyond political ideology. For example, increased liberal (vs. conservative) AoVs towards undocumented immigrants should predict liberals increased condemnation of detaining those illegally entering the country, above and beyond generally being liberal.

Method

Participants

There were 482 American participants who completed the survey online via CloudResearch. Our survey contained 6 attention checks. We only included in our final sample

participants who passed at least five of these checks ($n = 82$ excluded before analyses). The final sample ($N = 400$ participants, 215 female, 182 male, 3 other; $M_{age} = 36.71$ years) was 71.0% White, 11.5% Black, 8.8% Asian, 7.8% Latinx/Hispanic, and 0.8% American Indian/Alaska Native, 0.3% Native Hawaiian or other Pacific Islander. Education level spanned from no high-school degree through doctoral degree and Modal education level was a bachelor's degree (50.8%). Income spanned from under \$25,000 to over \$150,000 per year. Median income was \$50,000 - \$75,000 per year. Sample size was determined in advance of the data collection, per preregistration.

Design

Participants read six scenarios, three designed to tap hot-button issues typically judged to be more immoral to liberals (detaining undocumented immigrants at the Mexican border, a florist refusing to help gay people, and Congress voting to remove environment protections); and, three designed to be more immoral to conservatives (a teenager disrespecting state troopers, burning the American flag, and defacing a bible). Participants rated AoVs toward the potential moral patients in each scenario and rated the immorality of the scenario before completing demographics.

Measures

Assumptions of vulnerability. Using the same AoV items as the previous studies, participants rated the perceived vulnerability of six targets: illegal immigrants, gay people, the environment, state troopers, the American flag, and the Bible. Descriptives and reliabilities are shown in the Supplement (p. 12).

Moral judgments. Participants evaluated the immorality of each scenario (see Table 2) on a 5-point scale, ranging from (1) not at all immoral to (5) extremely immoral.

Table 2. *Moral Scenarios Used in Study 2.*

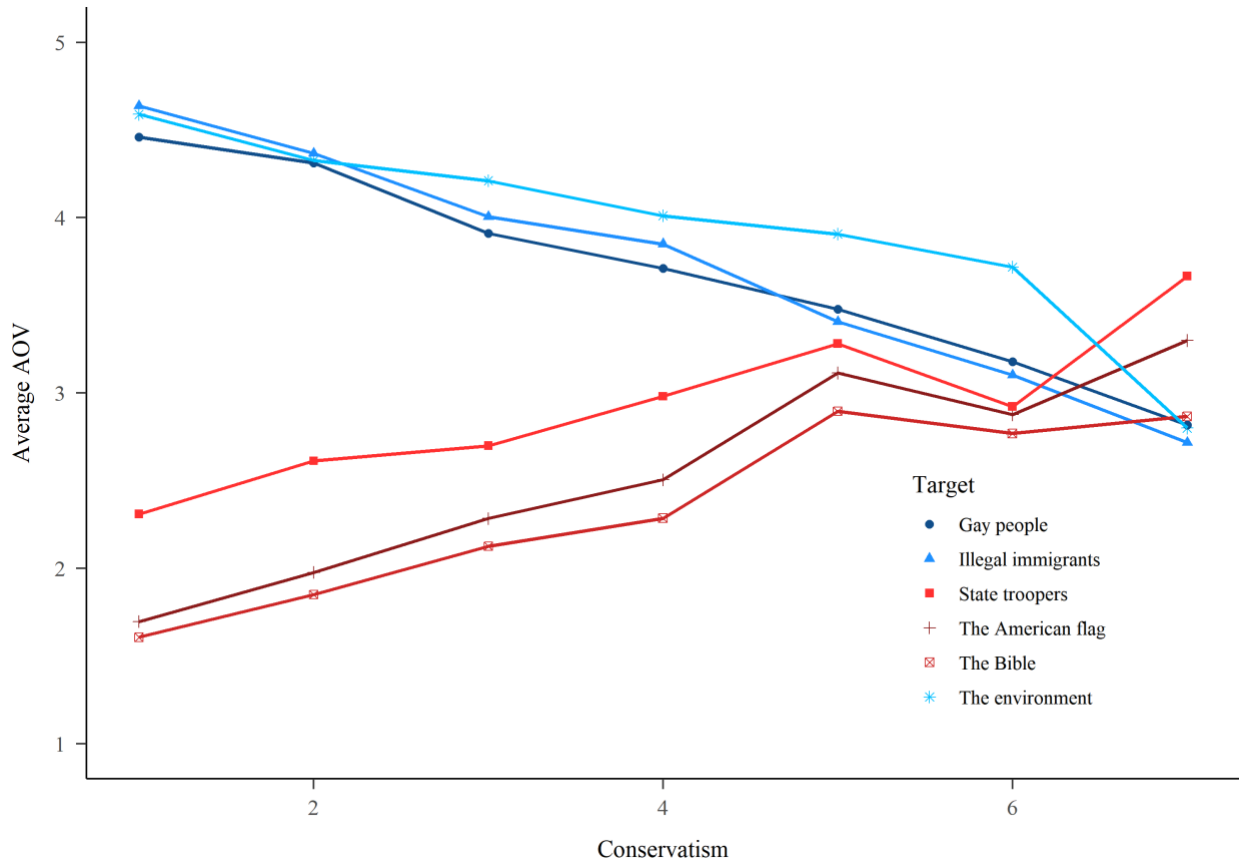
Right-Leaning Topic	Left-Leaning Topic
Two state troopers are fired by a judge for using excessive force on a teenager. The teenager was acting aggressively and being verbally disrespectful.	Illegal immigrants are forcibly detained for long periods at the US-Mexico border.
A group of college students set fire to the American flag.	A florist refuses to work with a gay couple who is planning their wedding.
A modern art gallery allows people to publicly deface the Bible by writing graffiti and swear words on its pages.	Congress votes to remove environmental protections.

Political Orientation. Participants completed the same measure of conservatism.

Results

Figure 5 shows AoV for all 6 targets across the political spectrum. Liberal participants rated “typically liberal” targets as highly vulnerable to harm, and conservative participants rated these as relatively less vulnerable. Liberal participants rated “typically conservative” targets as highly invulnerable to harm, and conservative participants rated these as relatively more vulnerable.

Figure 5. Relationship between political ideology and average scores on AoV for each target (Study 2).



To examine the link between AoV and moral judgment we first ran models with conservatism as a predictor. Conservatism was negatively associated with the immorality of left-leaning scenarios ($\beta = -.47, R^2 = .31, p < .001$), and positively associated with the immorality of right-leaning scenarios ($\beta = .39, R^2 = .21, p < .001$). We then ran the same models, including AoV scores as an additional predictor. As expected, conservatism still predicted the immorality of left-leaning ($\beta = -.29, p < .001$) and right-leaning scenarios ($\beta = .26, p < .001$), but AoVs also predicted the immorality of left-leaning ($\beta = .51, p < .001$) and right-leaning scenarios, ($\beta = .41, p < .001$). AoV therefore provided additional explanatory power in predicting moral judgments

of scenarios involving harm within left-leaning ($\Delta R^2 = .11$) and right-leaning ($\Delta R^2 = .10$) hot-button issues.

Discussion

This study reveals that people's AoVs—assumptions about who and what is vulnerable to harm—help to explain moral differences across politics. Liberals see gay couples as more vulnerable and so see it as more immoral to mistreat them. Likewise, conservatives see the American flag as more vulnerable and so see it as more immoral to mistreat it. Of course, AoVs represent only one construct that feeds into moral judgment, and so political affiliation—which has connections to the constructs of compassion (Hirsh et al., 2010; Womick & King, 2021), empathy (Morris, 2020), cognitive rigidity (Choma et al., 2014; Zmigrod et al., 2021), preference for hierarchy (Ho et al., 2015), attitudes towards marginalized groups (Crawford et al., 2017), group alliances (Pinsof et al., 2023), and beliefs about the nature of systems, society, and human nature (Jost et al., 2003)—also continues to explain people's judgments on these hot button issues. Some of the targets included in Study 2 (i.e., the Bible) were inanimate objects. A reasonable person may question whether assumptions of vulnerability apply to such objects. The purpose of the next study was to address whether people legitimately view sacred objects like these as alive and in turn vulnerable to harm.

Study 3: The Vulnerability of Sacred Objects: the Bible and the Flag

Assumptions of vulnerability help to explain political differences in moral judgment, including (as we saw in Study 2) toward actions like burning the American flag or defacing the Bible. One could argue that, as inanimate objects, these entities are objectively invulnerable to harm and so people are somehow “wrong” about their AoVs. However, consistent with ample evidence about the subjectivity of harm (Schein & Gray, 2018), we emphasize that AoVs are

more subjective than one might expect, and so people can see at least *some* kind of authentic vulnerability in these objects.

To explore this possibility, we assessed AoVs toward the sacred objects of the American flag and the Bible, and also examined how much people perceived these objects as having the qualities of living being with a mind—qualities that provide for both vulnerability to harm and worthy of moral protection. Cultural evidence supports the idea of the US flag and the Bible are seen as—at least somewhat—legitimately alive. The United States Flag Code—United States Code, Title 4, Chapter 1, Section 8, Subsection j, notes “The flag represents a living country and is itself considered a living thing.” Hebrews 4:12 says that the Word of God is “alive and active, sharper than any two-edged sword.”

We expect conservatives endorse that these objects were alive more strongly than liberals, but did not expect that right-leaning folks would see the flag and the Bible as alive as much as a human being, but instead as intermediately alive. AoVs form a continuum (as with the severity of moral judgments), and we expect that AoV toward these targets for right leaning participants will be somewhere between standard inanimate objects (e.g., a piece of concrete) and canonical moral patient (e.g., babies). Importantly, those high on conservatism should view these as more alive than those who are relatively liberal. Further, perceptions of the flag and bible as being alive should explain moral disagreement about the treatment of these sacred entities.

Method

Participants

We recruited 400 American participants via CloudResearch. As preregistered, we only analyzed data from participants who passed more than 1 of three total attention checks (4

excluded before analyses). The final sample ($N = 396$; 204 female, 191 male 2 other; $M_{age} = 50.03$ years) was 77.3% White, 12.4% Black, 5.6% Asian, 2.0% American Indian/Alaska Native, 1.8% other, and 1.0% Native Hawaiian or other Pacific Islander. Education level spanned from no high-school degree through doctoral degree and modal education level was a bachelor's degree (51.2%). Income ranged from under \$25,000 to over \$150,000 per year. Modal education level was a bachelor's degree (51.2%) and the median income was \$50,000 - \$75,000 per year. Sample size was determined in advance of the data collection, per preregistration.

Measures

Assumptions of vulnerability. As in previous studies, participants rated the 3 AoV items for each of six targets, two highly vulnerable targets (a 5-year old child, a newborn baby), two sacred objects (the American flag, the Bible) and two standard inanimate objects (a frying pan, and a block of concrete). We aggregated items within these three categories.

Aliveness. The perceived aliveness of each target was measured by averaging three items: “*I feel that the following entities are, in some shape or form, alive*” (1 = Not at all alive, 5 = Completely alive), “*I feel that the following entities are, in some shape or form, a living thing*” (1 = Not at all a living thing, 5 = Completely a living thing), and “*I feel that the following entities, in some shape or form, have a mind*” (1 = Does not have a mind at all, 5 = Completely has a mind). Again, we created three composites across the three categories.

Political ideology. Participants completed the same measure of conservatism, ($M = 3.70$, $SD = 1.85$).

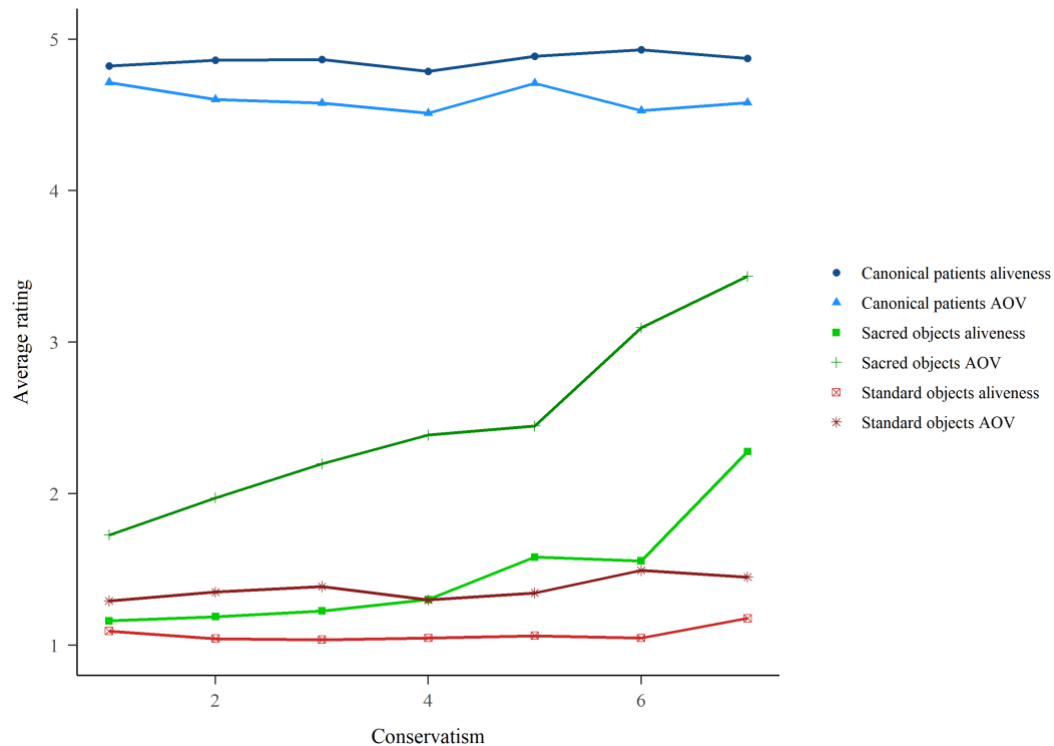
Results

As predicted, people rated AoVs higher for obviously vulnerable targets of a baby and a child $M(SD) = 4.60 (0.72)$, than for standard inanimate objects like a frying pan and a block of

concrete, $M(SD) = 1.36 (0.61)$, with sacred objects of the American flag and the Bible sitting in between, $M(SD) = 2.38 (1.20)$. Following AoV ratings, ratings of aliveness were highest for obviously vulnerable targets, $M(SD) = 4.86 (0.40)$, lowest for standard inanimate objects, $M(SD) = 1.06 (0.34)$, with sacred objects in between, $M(SD) = 1.40 (0.79)$.

Although ratings of AoVs and aliveness for obviously vulnerable targets (e.g., babies) and standard inanimate objects (e.g., a block of concrete) did not vary by political affiliation, ratings of the sacred objects did, with conservatives seeing sacred objects higher in AoVs, $r = .41$, $p < .001$, and higher in aliveness, $r = .33$, $p < .001$. Figure 6 shows perceptions of aliveness plotted across the political spectrum. These results suggest that conservatives indeed see these objects as at least somewhat alive, and supports the possibility that these ratings of aliveness help to explain their higher AoVs toward sacred objects.

To examine whether the link between conservatism and vulnerability was due to their mutual overlap with aliveness, we ran a mediation model. Conservatism positively predicted aliveness, and aliveness in turn predicted vulnerability. The indirect effect of conservatism on vulnerability was significant, $b(SE) = 0.07 (0.01)$, 95% CI = [0.04, 0.10], and so was the direct effect, $b(SE) = 0.19(0.03)$, 95% CI = [0.14, 0.25]. Of course, we can not draw causal inferences from these data, but these results show perceived vulnerability is not simply metaphorical or symbolic. Although AoVs may connect with some broader cultural or symbolic considerations (Gutierrez & Giner-Sorolla, 2007), perceptions of the Bible and flag as alive are not only consistent with legal and biblical statements, but also help us understand why conservatism promotes seeing the Bible and flag as vulnerable.

Figure 6. Perceptions of Aliveness across the Political Spectrum.

Discussion

Conservatives saw the Bible and the flag as being somewhat alive, and this perception helped explain ratings of AoVs toward them. We acknowledge that people—even conservatives—viewed obviously vulnerable babies as more alive and vulnerable to harm than the US flag and Bible. These results are reasonable and were expected, given that the flag is made of fabric and the bible of paper, rather than of flesh. Nevertheless, that these ratings are not at floor, and were even higher than standard inanimate objects, buttresses the ideas that people truly can perceive the flag and Bible as vulnerable and alive, that these can legitimately experience harm, and that these perceptions can help explain political moral differences. These results also add to past work suggesting that violations of sacredness and purity are not completely distinct from considerations of harm (Gray et al., 2022).

Section 2: Four Themes of AoV Help Explain Moral Differences Across Politics

The second set of studies (Studies 4-6) explored four specific political themes that repeatedly surface in debates: *The Environment* (e.g., coral reefs), *The Othered* (e.g., illegal immigrants), *The Powerful* (e.g., business leaders), and *The Divine* (e.g., God). As reviewed above, these themes were motivated by the liberal emphasis on protection of the environment and of marginalized groups and past work on tying conservatism to respect for authority and religion.

In Studies 4a and 4b (convenience and nationally representative samples), we combined the AoV items with a subset of targets from the four political themes (The Environment, The Other, The Powerful, and The Divine) and used factor analysis to develop a reliable scale of potential differences. The scale included ratings of vulnerability to harm, mistreatment, and victimization (as in previous studies) of twelve targets (three targets per each of the four AoV political themes), which we expected to form a four-factor scale structure. To test the criterion validity of these AoV ratings across these four themes, we also explored the connection between AoV ratings and the Moral Foundations Questionnaire (MFQ; Graham et al., 2013). For additional converging evidence (via method variance), we also developed a series of scenarios involving moral transgressions that fall into each of the AoV themes—the *AoV scenarios*—and tested whether AoV theme ratings predicted moral judgments on these AoV scenarios.

In Study 5, we further tested the validity of the AoV measure across these four themes. We administered the scale across two time points to assess test-retest reliability. We included a battery of other measures (e.g., moral foundations questionnaire, moral expansiveness scale, etc) to assess convergent and divergent validity. Study 6 tested whether *explicit* assumptions of vulnerability would to be reliably associated with *implicit* assumptions of vulnerability, given

typical concerns about whether self-report measures connect with more intuitive judgments (e.g., Dovidio et al., 2001, p. 182), We use an adapted version of the Affect Misattribution Procedure (AMP; Payne et al., 2005) to test this prediction.

Study 4a: Exploring Four Themes of AoV Targets

Developing Themes

American society is filled with disagreement, and we suggest that some of this disagreement revolves around AoVs regarding some specific clusters of targets: the Environment, the Othered, the Powerful, the Divine. As mentioned before, we argue strongly against the idea of distinct mental modules and so do *not* suggest that these themes are natural kinds or reflect some special mental mechanism. Instead, we suggest that AoVs surrounding each theme might represent general informational assumptions about sets of similar entities, which may help explain descriptive moral differences.

Connection to MFT

After first exploring the factor structure of the four themes, we then explore whether these AoV themes have criterion validity. Do AoVs predict differences in ratings of moral foundations? Although we take issue with the unique claims of MFT—especially its roots in a modular mind (Haidt & Joseph, 2004)—we acknowledge that ratings of the MFQ do show some differences across liberals and conservatives. Although it can be hard to empirically disentangle all five foundations, and the foundations are operationalized in a way that leans conservative (e.g., asking about loyalty towards preachers rather than union leaders; Frimer et al., 2014), it is clear ratings of the MFQ—whatever those suggest—show differences across politics. Liberals seem to give higher ratings of the “individualizing” factor combining “care and fairness” while

conservatives prioritize the "binding" factor combining "loyalty, authority, and purity" (e.g., Graham et al., 2011). Here we explore whether AoVs toward the four themes help explain these differences in MFQ above and beyond political affiliation.

More specifically, we test whether the Othered and the Environment predict judgments about care/fairness, while the Powerful and the Divine predict judgments about loyalty/authority/purity. Although there may be some broader conceptual links between these themes and these sets of moral values, we think an important connection lies in the specific items used in the measurement of MFT. Conservative-leaning MFQ items measuring loyalty/authority/purity focus on targets likely to be higher in AoVs for conservatives (e.g., the Bible), and the liberal-leaning care/fairness items focus on targets likely to be higher in AoVs for liberals (e.g., endangered species; Graham et al., 2009).

Moral Scenarios

Finally, this study also explores whether AoV ratings across four themes also predict moral judgments of scenarios that contain the entities from each of these themes (e.g., coral reefs in the Environment) as victims of harm. This methodology allows us to connect AoV ratings to moral judgments of specific and relevant actions.

Method

Participants

There were 1008 American participants who completed the online survey via CloudResearch. We only analyzed data from participants who passed more than four of 6 total attention checks (76 excluded before analyses). The final sample ($N = 932$; 496 female, 430 male, 5 other; $M_{age} = 45.16$ years) was 80.0% White, 8.8% Black, 5% Hispanic, 4.6% Asian,

2.1% American Indian/Alaska Native, and 2.1% Native Hawaiian or other Pacific Islander. Modal education level was a bachelor's degree. Income ranged from under \$25,000 to over \$150,000 per year. Median income was \$50,000 - \$75,000 per year. Sample size was determined in advance of the data collection, per preregistration.

Measures

Assumptions of Vulnerability. For each of the four AoV groups, participants rated the 3 AoV items (“I believe that the following are especially vulnerable to being harmed,” “I think that the following are especially vulnerable to mistreatment,” and “I feel that the following are especially vulnerable to victimization”) for three targets on a scale from 1 (*Not at all vulnerable*) to 5 (*completely vulnerable*). Targets can be found in Table 4. Descriptive statistics and reliabilities for each AoV group are shown in the Supplement (p. 13). For analyses, we first averaged across the 3-items for each target, creating a mean composite variable representing vulnerability for each target. We then created a mean-composite for each of the four categories by aggregating these across all targets.

Moral Foundations. Participants completed the 20 item Moral Foundations Questionnaire (Graham et al., 2008), which consists of 10 moral relevance items (e.g., “When you decide something is right or wrong, to what extent are the following considerations relevant to your thinking?”) and 10 moral judgments items (e.g., “Compassion for those who are suffering is the most crucial virtue.”) on a scale from 1 (*not at all relevant / strongly disagree*) to 7 (*extremely relevant, strongly agree*). For analyses, we aggregated all items pertaining to care and fairness, $M (SD) = 4.83 (0.70)$, $\alpha = .77$ and all items pertaining to loyalty, authority, and purity, $M (SD) = 3.51 (1.02)$, $\alpha = .90$.

AoV Target Moral Scenarios. For each of the hypothesized factors, we created two scenarios (shown in Table 3) and asked respondents to rate how immoral each was on a scale from 1 = *Not at all immoral* to 5 = *Extremely immoral*. The two scenarios associated with each factor were aggregated to form measures of perceived wrongness for acts involving harm to the Othered ($M = 2.66$, $SD = 1.27$, inter-item $r = .75$), the Environment ($M = 3.59$, $SD = 1.07$, inter-item $r = .50$), the Powerful ($M = 2.80$, $SD = 1.17$, inter-item $r = .73$), and the Divine ($M = 2.86$, $SD = 1.45$, inter-item $r = .92$). These were used to assess convergent validity of the AoV scale.

Table 3. *Scenarios used to Assess Criterion Validity*

<u>The Othered</u>	<u>The Environment</u>	<u>The Powerful</u>	<u>The Divine</u>
Someone makes a transgender person use the bathroom of the sex they were born, rather than their current sex.	Some people teach their kids that global warming is a myth.	Someone distributes anarchist guides to teach children to rise against the authorities.	Someone burns a bible for fun.
Someone reports a family of illegal immigrants to the police.	A recycling company discards all the plastic that should have been recycled in a forest nearby.	Someone shows zero respect when talking to a police officer.	Someone uses a Christian cross for firewood.

Political Ideology. Participants completed the same measure of conservatism, $M (SD) = 3.55 (1.74)$.

Results

Factor Analyses

We first employed exploratory factor analysis to empirically assess whether four, fewer, or more factors were warranted to explain variation across the items used to assess our four *ad hoc* themes. We explored solutions ranging from one to six factors using maximum likelihood and an oblimin rotation. Results provided support for the four-factor solution. Only the first four factors had eigenvalues > 1.00 (ranging from 1.27 to 4.08), cumulatively explaining 80% of the variance in these items. Figure 7 shows the fit measures and BIC for exploratory analyses ranging from one to six factors. The RMSEA and TLI only reach adequate levels at four factors and beyond, suggesting that simpler solutions are not acceptable. The BIC value improves up to four factors and suggests that a five or six-factor solution overfits the sample data. Overall, all indicators suggest that the four-factor solution is optimal. Primary and cross-loadings from the four-factor solution are presented in Table 4. All primary loadings were above .73 and no cross-loadings were above .10. Table 5 shows relationships among these factors.

Figure 7. Exploring Fit for 1 to 6 Factor Solutions.

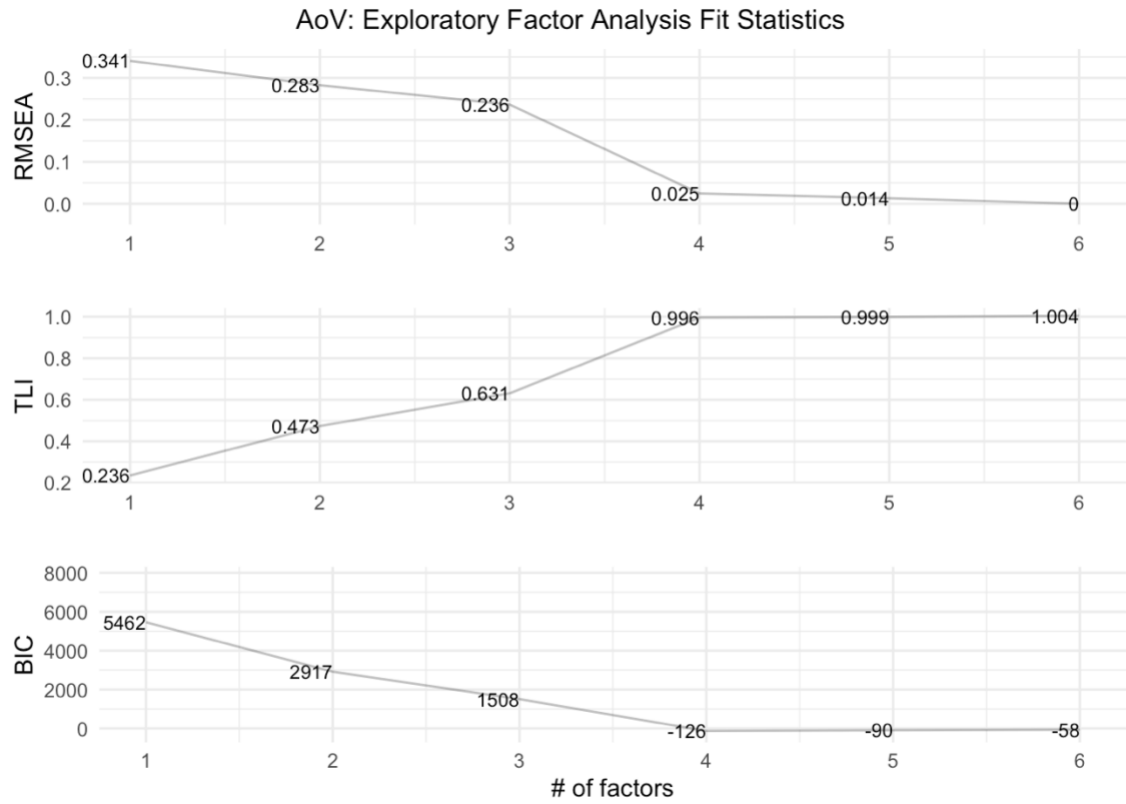


Table 4. *Exploratory Factor Analysis of the AoV Scale, Study 4a*

	Factor 1	Factor 2	Factor 3	Factor 4
	Environment	Divine	Othered	Authority
Rainforest	.97	.00	-.01	.00
Reef	.91	-.04	-.03	.01
Earth	.88	.04	.06	-.01
Jesus	.01	.95	.01	-.02
God	-.01	.95	.00	-.02
Bible	.00	.81	-.03	.07
Undoc. Immigrant	.00	-.02	.93	-.03
Muslim	.00	.03	.89	.05
Transgender	.02	.02	.87	-.02
Authority	.02	-.02	-.01	.98
Trooper	.03	.03	-.05	.81
Corporate Leader	-.06	.02	.07	.73
<i>M (SD) α</i>	4.06 (0.97) .95	1.78 (1.04) .93	3.87 (0.96) .93	2.45 (0.92) .87

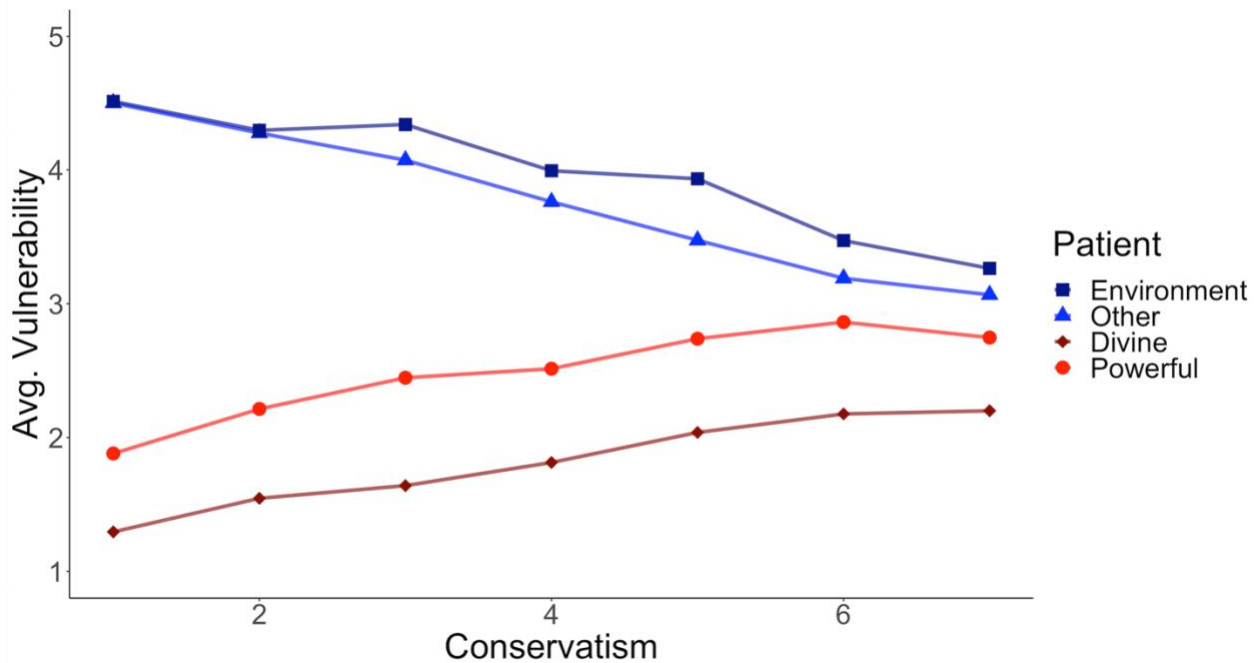
Note. Analysis was conducted using a composite of 3 AoV items for each of the 12 targets.

Descriptive and reliabilities are for the aggregate composite of the factor in each column.

Political Ideology and Assumptions of Vulnerability

Correlations between conservatism and AoVs are shown in Table 5 and conform with previous findings: Liberals view the Othered and the Environment as more vulnerable than do conservatives, and conservatives rated the Powerful and the Divine as more vulnerable than do liberals. As in Study 3, we plotted assumptions of vulnerability across the political spectrum, shown in Figure 8. Replicating those findings, political centrists showed a moderate distinction between how vulnerable they viewed the Othered/Environment vs. the Powerful/Divine. By contrast, extreme liberals showed a substantial level of separation regarding how vulnerable they perceived the Othered and Environment compared to the Powerful and Divine. On the far-right end of the Figure, those who strongly endorsed conservatism showed a much smaller distinction between how much they viewed all clusters as vulnerable to harm.

Figure 8. Assumptions of Vulnerability Across the Political Spectrum (Study 4a)



Political Ideology and Moral Foundations

We next examined the relationships between these four factors, care/fairness, loyalty/authority/purity, and political ideology. Correlations are shown in Table 5. Consistent with past work, conservatism was negatively associated with care/fairness, and was positively related to loyalty/authority/purity. As we expected, care/fairness was positively related to AoVs for the Othered and the Environment. Loyalty/authority/purity was positively related to higher AoVs for the Powerful and the Divine. One asymmetrical finding was that care/fairness were unrelated to AoVs for the Powerful and Divine, but loyalty/authority/purity were negatively associated with AoVs for the Environment and the Othered. Future research centering on MFT might explore these differences.

Table 5. *Correlations Among Variables, Study 4a*

Variable	1	2	3	4	5	6	7
1. MFQ Care/Fairness	--						
2. MFQ LAP	.02	--					
3. Conservatism	-.32**	.56**	--				
4. AOV Environment	.34**	-.20**	-.36**	--			
5. AOV Other	.41**	-.26**	-.47**	.54**	--		
6. AOV Powerful	-.03	.38**	.29**	.03	.10*	--	
7. AOV Divine	.02	.41**	.26**	.01	.02	.31**	--

Note. $N = 871$. ** $p < .001$, * $p < .01$. LAP = Loyalty/Authority/Purity

We next conducted a hierarchical regression analysis to examine whether AoV scores add additional explanatory power in predicting the two groupings from the MFQ, over and above

political ideology. All predictor and outcome variables were standardized. Conservatism was entered as the first step in each hierarchical regression model. AoV factors were added in a second step to examine their predictive value after controlling for ideology. AoVs for the Environment ($\beta = .16, p < .01$) and the Othered ($\beta = .24, p < .01$) explained additional significant variance in care/fairness (second step $\Delta R^2 = .11, p < .001$); and AoVs for the Powerful ($\beta = .20, p < .01$) and the Divine ($\beta = .26, p < .01$) explained additional variance in loyalty/authority/purity (second step $\Delta R^2 = .12, p < .001$), above and beyond political ideology. Full results for these models can be found in the Supplement (Table S12, p 15).

Moral Scenarios

We next examined if the AoV factors predict moral judgements for vulnerable targets related to each factor. We computed four regression models. The dependent variables were immorality ratings for the scenarios involving canonical patients associated with each factor. We hierarchically regressed these immorality ratings on the vulnerability scores for the corresponding factor (on the second step), after controlling for conservatism, as well as care/fairness and loyalty/authority/purity on the first step. As predicted, the vulnerability scores for the corresponding factor are predictive of the wrongness attributed to scenarios: AoVs for the Environment predicted moral judgements in the environmental scenario, $\beta = .35, p < .001$, second step $\Delta R^2 = .10, p < .001$; AoVs for the Othered, $\beta = .28, p < .001$, predicted moral judgements in the othered scenario, second step $\Delta R^2 = .05, p < .001$; AoVs for the Powerful, $\beta = .15, p < .001$, second step $\Delta R^2 = .02, p < .001$ explained significant variance in the powerful scenario; and, AoVs for the Divine, $\beta = .20, p < .001$, second step $\Delta R^2 = .04, p < .001$ significantly predicted judgements in the divine scenario. Again, these effects were significant, even after accounting for political orientation and moral foundations on the first step. For a more

detailed presentation of these results, including information for the first step variables and model R^2 s, see Supplemental Table S13, p 16.

Discussion

In this study, we explored the idea of AoV themes. Exploratory factor analysis provided support for the clustering of our *ad hoc* categories. As predicted, liberals were more likely to rate AoVs higher for the Othered and the Environment, and conservatives were more likely to rate AoVs higher for the Powerful and the Divine. These different ratings in AoVs across the four clusters helps to explain differences in moral judgment between liberals and conservatives across the MFQ and specific scenarios, even when controlling for political ideology.

Interestingly, the pattern of these AoVs results suggested a general trend between liberals and conservatives. Liberals amplify differences between the more and less powerful, whereas conservatives diminish differences between the more and less powerful. Although an authoritative explanation behind this effect may itself be a whole other paper, one can speculate. One dominant narrative of the far left is the tension between invulnerable oppressors and the extremely vulnerable oppressed (Pluckrose & Lindsay, 2020), with liberals emphasizing how some groups of people are much more likely to suffer than others (Pinsof et al., 2023). This is consistent with the amplification of differences in vulnerability we observed. In contrast, conservatives often emphasize the narrative that all individuals are created fundamentally equal, no matter what group to which they are born (e.g., Burke, 2017). All people can ultimately be harmed and suffer—if both a rich white and a poor Black person are cut, both will bleed and feel pain.

Study 4b: Four AoV Themes with a Unique National Sample

In this study, we sought to replicate the key results from Study 4a using a high-quality national sample, exploring whether we obtained the same patterns of AoVs of the four themes and political orientation. We compared how this nationally representative sample differed from the sample in 4a on each of the four AoV clusters. This sample was obtained as part of a Templeton funded-project examining the cognitions of religious people, and so consistent of a nationally represented sample of theists. This allowed us to perform an interesting test across samples, exploring whether this sample scored higher on AoV for the Divine than the less religious sample in 4a.

Method

Participants

We advertised for 2000 American participants using the Qualtrics panels service. We determined sample size by recruiting as many participants as possible given the cost constraints of the panel service. Participants were all religious and recruited to be nationally representative on the key dimensions of age, political party affiliation, race, and region of the country (South, Northeast, Midwest, West). In total, 2010 participants completed the online survey. We only analyzed data from participants who passed a single attention check. (178 excluded before analyses). The final sample ($N = 1,832$; 1,379 women; 447 men; 6 other) was 73.2% White, 12.1% Black, 10.2% Other, and 4.6% Asian. Education level spanned from grammar school through doctoral degree and income spanned from under \$25,000 to over \$150,000 per year. Modal education level was some college (30.9%) and the median income was \$25,000 - \$50,000 per year.

Measures

Assumptions of Vulnerability. Participants rated the vulnerability of each patient (twelve total) using the same AoV items: For the Othered, $M (SD) = 3.64 (0.97)$, $\alpha = .91$; the Environment, $M (SD) = 3.77 (1.03)$, $\alpha = .91$; the Powerful, $M (SD) = 2.72 (0.84)$, $\alpha = .83$; and, the Divine, $M (SD) = 2.46 (1.19)$, $\alpha = .91$.

Political Orientation. Participants answered the question “How would you classify yourself on the political spectrum?” on a 9-point scale from 1 = Very Liberal to 9 = Very Conservative, $M (SD) = 5.41 (2.21)$. Participants also completed other measures as part of another study.

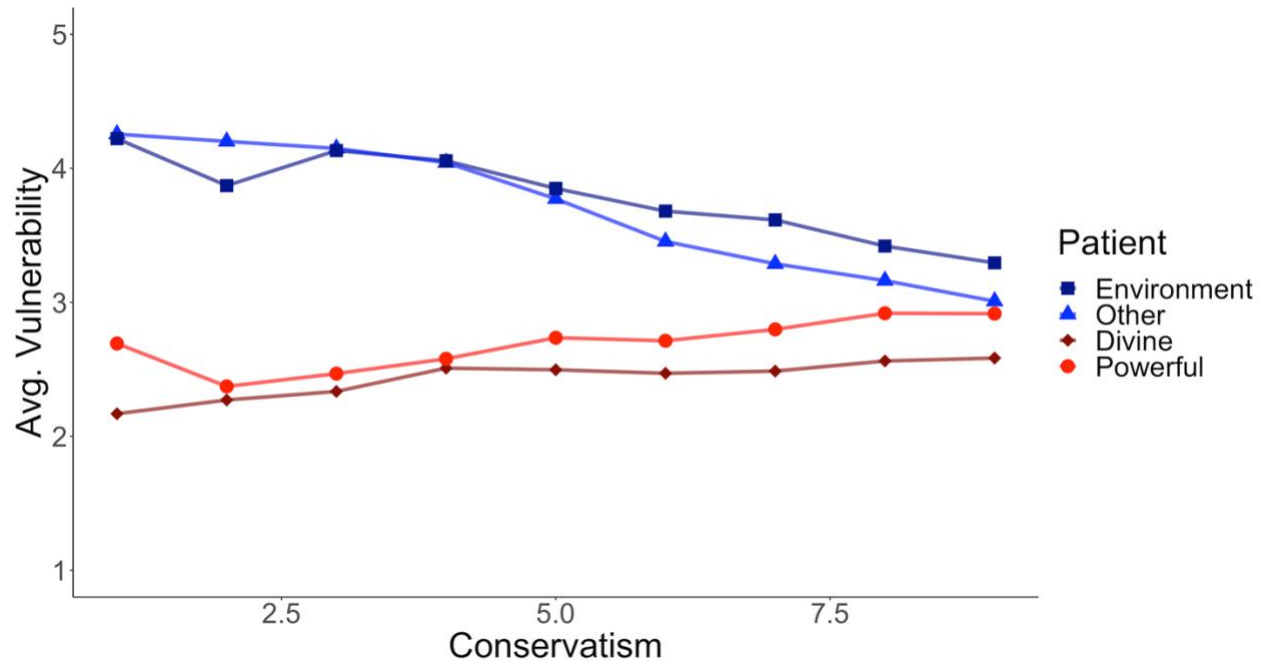
Results

We conducted a confirmatory factor analysis to evaluate whether the four-factor solution showed acceptable model fit. All fit statistics surpassed typical thresholds ($\chi^2(48) = 449.53$, $p < .001$, SRMR = 0.05, RMSEA = 0.07, TLI = .96, CFI = .97), indicating the four-factor model adequately captures the structure of the data. Correlations among the factors were similar to Study 4a (see the Supplement, p. 17). As in previous studies, conservatism related negatively to the Othered, $r = -.41$, and the Environment, $r = -.25$, and was positively related to the powerful, $r = .15$, and the divine, $r = .08$, all p 's $< .001$.

We next compared Study 4b participants to Study 4a participants on averages for each AoV theme. Compared to the sample from Study 4a, participants rated the AoV of the Environment lower ($mDiff = 0.29$), $t(1,974) = -7.28$, $p < .001$, rated the AoV of the Othered lower ($mDiff = 0.23$), $t(1,890) = -5.93$, $p < .001$, rated the AoV of the Powerful higher ($mDiff = 0.27$), $t(1,729) = 7.51$, $p < .001$, and rated the AoV of the Divine higher ($mDiff = 0.68$), $t(2,108) = 15.46$, $p < .001$. These results are consistent with a more religious sample.

AoV scores plotted across the political spectrum as shown in Figure 9, and demonstrate the same pattern obtained in previous studies: Liberals see extreme differences in levels of vulnerability between the Othered/Environment vs. Powerful/Divine and conservatives do not.

Figure 9. *Assumptions of Vulnerability Across the Political Spectrum (Study 4b).*



Discussion

Study 4b replicated the results of the previous studies in a large, nationally representative sample, providing strong support for our hypotheses. We again obtained a four-factor solution with sound structure for the AoV scale. We also replicated the relationships between conservatism and AoV themes. Importantly, in this bigger sample, we again observed the key pattern that, when considering differences in levels of vulnerability for the Othered/Environment vs. Powerful/Divine, extreme liberals distinguish to a high degree, centrists distinguish to a moderate degree, and conservatives distinguish very little. Even though conservatism was

positively correlated with AoVs for the Powerful and Divine, they still provided higher ratings for the vulnerability level of the Othered and Environment.

Study 5: AoVs in the Nomological Net

Assumptions of vulnerability track political orientation and help explain moral disagreement across politics. In this study, we explored the nomological net surrounding AoVs to allow scientists to better situate this construct among other constructs. We also used this opportunity to conduct a confirmatory factor analysis on then four themes of the Othered, the Environment, the Powerful, and the Divine, and collected data over two time points to assess test-retest reliability.

In addition to replicating results for political affiliation, MFQ associations, and judgments of moral scenarios from the previous studies, we included at least one measure that we expected should be related to each AoV theme due to conceptual overlap:

The Othered. We expected these AoVs would be associated with more strongly viewing people who are stigmatized as legitimate moral patients (measured by the moral expansiveness scale). Because universalism values are centrally about tolerance, appreciation of differences, and supporting welfare for all people (S. Schwartz, 2012), we also expected to find a positive relationship between universalism and AoVs for the othered.

The Environment. We predicted AoVs for the environment would be associated with endorsing the view that animals, plants, and the environment are legitimate moral patients (moral expansiveness scale).

The Powerful. Particularly due to the component that involves submission to authorities (Manganelli Rattazzi et al., 2007), we expected AoVs for the powerful to be positively

associated with right-wing authoritarianism. Likewise, we tested the hypotheses that viewing the powerful as more vulnerable to harm would be associated with valuing power (status, prestige, control, dominance) as a guiding life principle (measured by the Schwarz value scale), and with endorsing deference to authorities as a moral imperative (operationalized by the morality as cooperation scale). Because submitting to the powerful and authorities also requires a degree of conformity (e.g., Steiner & Johnson, 1963), we also expected AoVs for the powerful would also be positively related to basic values for conformity (avoiding conflict with others and following social norms).

The Divine. Due to their overlap with religious views, AoVs for the divine should be associated with more endorsement of supernatural beliefs.

Uncorrelated Measures. We had no reason to expect AoVs for any of the four themes would be significantly associated with openness to experience or need for cognitive closure outside of their mutual overlap with political ideology.

Method

Participants

We recruited participants through CloudResearch and had them complete two surveys with a one-week gap in between. There were 1011 American participants who completed the online survey. We only analyzed data from participants who passed more than 6 of 8 total attention checks (91 excluded before analyses). The final sample ($N = 920$; 512 women, 405 men, 3 other; $M_{\text{age}} = 41.51$ years) was 81.7% White, 9.9% Black/African American, 5.0 % Latinx/Hispanic, 2.6% Asian, 0.8% American Indian/Alaska Native, 0.1% Native Hawaiian/Other Pacific Islander. Modal education level was a bachelor's degree. Income ranged

from under \$25,000 to over \$150,000 per year. and median income was \$50,000 - \$75,000 per year. For the second wave, after excluding for attention checks, we had a total of 758 participants, an 82.4% retention rate (426 women, 330 men, 2 other; $M_{age} = 39.72$).

Procedure

Unless otherwise noted, responses were provided on a 1 (low endorsement) to 7 (strong endorsement) scale. At both waves, participants completed the AoV scale and a measure of conservatism. During the first wave only, participants completed all of the following measures: Descriptive statistics and reliabilities for all wave 1 measures are shown in Supplemental Table S14 (p. 19).

Measures

Assumptions of Vulnerability. Participants completed the same measures of the othered, (Time 2, $M (SD) = 3.84 (0.97)$, $a = .93$); the environment, (Time 2, $M (SD) = 3.85 (1.11)$, $a = .95$); the powerful, (Time 2, $M (SD) = 2.39 (0.84)$, $a = .88$), and the divine, (Time 2, $M (SD) = 1.63 (0.95)$, $a = .92$), as in Study 4.

Moral Foundations. Participants completed the same measure of moral foundations as in Study 4, and we used the same procedure to create composites for care/fairness and loyalty/authority/purity.

Factor-specific Scenarios. We use the same factor-specific scenarios as in study 3. Again, the participants rated each scenario on a 5-point Likert scale ranging from 1 = “Not at all immoral” to 5 = “Extremely Immoral”. For the othered, $M (SD) = 2.70 (1.23)$, inter-item $r = .52$; the environment, $M (SD) = 3.45 (1.14)$, inter-item $r = .44$; the powerful, $M (SD) = 2.85 (1.19)$, inter-item $r = .58$; and, the divine, $M (SD) = 2.87 (1.47)$, inter-item $r = .83$.

Political Orientation. Participants completed the same conservatism measure from Studies 1-4, $M (SD) = 3.53 (1.79)$.

Other Variables. We also measured moral concern for the stigmatized, animals, and the environment Moral Expansiveness (Crimston et al., 2016; responses provided from 1 = *Outside*; 4 = *Inner circle*). Participants also completed a measure of deference to authority as a moral imperative (the deference subscale as the Morality as Cooperation Questionnaire (Curry et al., 2019)) on a scale from 0 (*Not at all relevant*) to 100 (*Extremely relevant*). To measure basic values for universalism, power, and conformity, we administered the Schwarz Value Survey (Lindeman & Verkasalo, 2005), using a scale from 0 (*Opposed to my principles*) to 8 (*Of supreme importance*). We measured right-wing authoritarianism using a 15-item scale (Manganelli Rattazzi et al., 2007). Participants also completed the 10-item Supernatural Belief Scale (Jong et al., 2013) on a scale from 1 = “*Strongly disagree*” to 9 = “*Strongly agree*.” We measured openness to experience using the 10-item Personality Inventory (Gosling et al., 2003). We also asked participants to respond to the 15-item Need for Cognitive Closure Scale (Roets & Van Hiel, 2011) providing responses from 1 = “*Completely disagree*” to 6 = “*Completely agree*.”

Additional exploratory measures—without preregistered hypotheses—included utilitarianism, anxiety, faith in intuition, moral identity, belief in a dangerous world, social dominance orientation, interpersonal reactivity, and self-efficacy.

Results

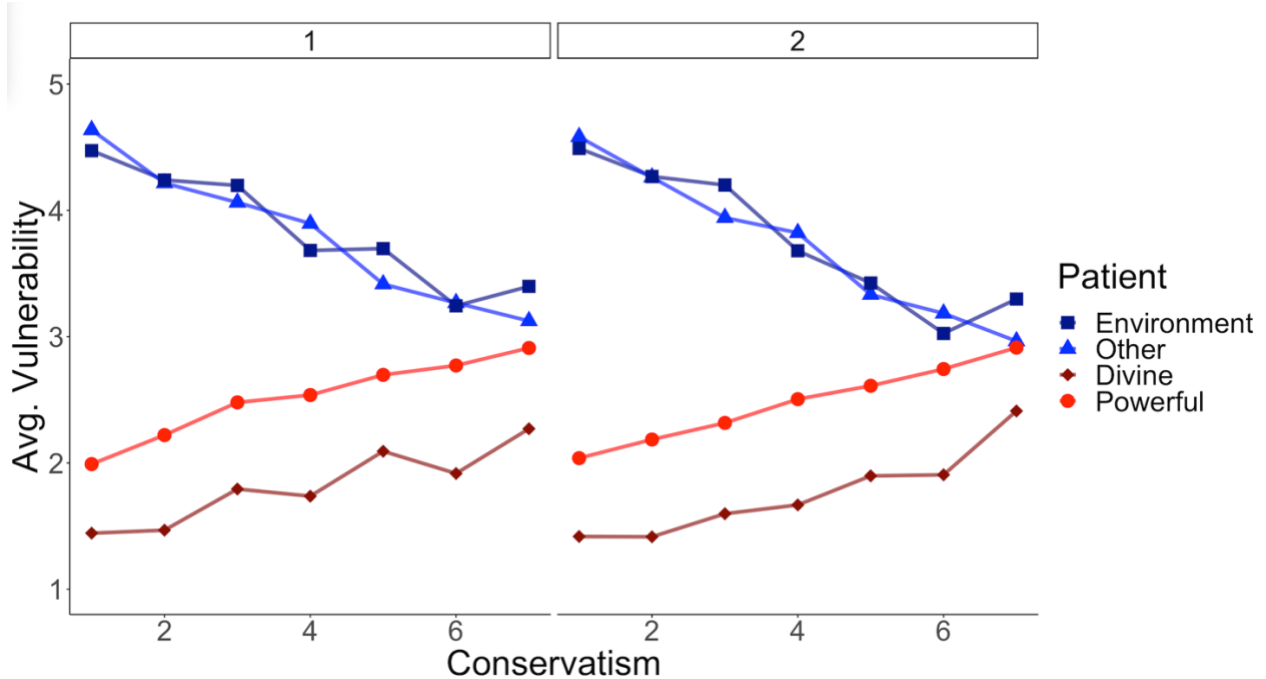
Confirmatory Factor Analysis

Our factor analyses show that the four-factor solution is still the most appropriate in both waves. For the first wave, the fit measures for the confirmatory factor analysis are appropriate

with RMSEA = 0.066, CFI = 0.978, TLI = 0.969. For the second wave, these values are similar: RMSEA = 0.061, CFI = 0.984, TLI = 0.977. Explanatory analyses for both waves show that the fit statistics only reach acceptable values after four factors are included, and that five or six-factor solutions overfit the data. The mean within person reliability across time for the whole scale was .88, indicating a good degree of stability in responses across time. Test-retest reliability was similarly high for each of the four themes: The Environment, .85; The Othered, .83; The Powerful, .91, and The Divine, .93.

Replications

The full correlation matrix can be found in the Supplement (Table S14, p. 19). These both replicated findings from previous studies and provided initial support for our predictions (more conservative tests of these are reported below). Figure 10 shows that again we obtained the same pattern of AoV ratings across the political spectrum (Wave 1 data shown in the first panel and Wave 2 data shown in the second panel), with liberals showing extreme separation in levels of vulnerability, and conservatives showing small differences in these perceptions.

Figure 10. Assumptions of Vulnerability Across the Political Spectrum (Study 5).

We used the same regression procedure as in previous studies to test the relationships between assumptions of vulnerability and care/fairness and loyalty/authority/purity, controlling for conservatism; as well as judgement of moral scenarios. Results replicated our previous findings and are presented in the Supplement (pp. 20-21).

Psychological Concomitants

We pre-registered our intent to control for conservatism to assess the unique contribution of assumptions of vulnerability to the outcome variables included in this Study. For all models, we hierarchically regressed each outcome variable on mean-centered conservatism on a first step, and the four AoV factors (mean centered) on a second step. Below we present results specific to our pre-registered hypotheses. Full results are shown in the Supplement, pp 22-26.

The Othered. Results for viewing the Othered as vulnerable to harm conformed to our expectations. AoVs for the othered significantly and positively predicted the stigma facet of the

moral expansiveness scale, $\beta = .24, p < .001$; and universalism values, $\beta = .14, p < .001$. The more people endorsed AoVs for the Othered, the more they showed concern for moral transgressions against people who belong to stigmatized groups, and enduring values reflecting care for the dissimilar, even after accounting for conservatism.

The Environment. Viewing the environment as vulnerable to harm was associated with moral concern in the way we predicted. AoVs for the Environment were significantly and positively associated with endorsements of plants, $\beta = .34$, animals, $\beta = .34$, and the environment, $\beta = .44$, all's $p < .001$, as subjects of moral concern. Even after adjusting for political ideology, these results show that the more people viewed the environment as vulnerable to harm, the more concern they show about potential harm done to environmentally-relevant targets.

The Powerful. AoVs for the powerful were associated with authoritarianism, deference, and basic values as expected. Specifically, viewing the Powerful as more vulnerable to harm significantly predicted higher endorsement of right-wing authoritarianism, $\beta = .14, p < .001$, viewing deference as a moral requirement, $\beta = .24, p < .001$, as well as basic values for power, $\beta = .14, p < .03$ and conformity, $\beta = .09, p < .03$. These results demonstrate consistency between viewing powerful figures as vulnerable to harm and endorsing similar ideologies and values.

The Divine. As we expected, those who viewed the Divine as more vulnerable to harm also more strongly believed in the supernatural, $\beta = .31, p < .001$, likely due to the fact that key tenants of many different religious belief systems involve supernatural elements.

Finally, in contrast to our pre-registered predictions, AoVs for the environment were a significant and positive predictor of openness to experience. For need for cognitive closure, only AoVs for the divine were a significant (and positive) predictor. Thus, people who view the

environment as more vulnerable to harm also tend to be higher on trait openness, and those who believe divine targets are more vulnerable to harm show more cognitive rigidity.

Discussion

Study 5 replicated previous findings for the structure of our AoV scale; the relationships between assumptions of vulnerability, political ideology, and moral foundations; and their relevance to judgements of everyday moral scenarios. Additionally, Study 5 results generally provided support for our pre-registered predictions. Each of the four AoVs each showed the kinds of associations we expected with other moral constructs, values, beliefs, and cognition, even when controlling for conservatism and the remaining assumptions of vulnerability. First, AoVs for the othered were associated with viewing people who belong to stigmatized groups as deserving of moral protection, and universalism values for tolerance, appreciation, and welfare for all. Second, those who viewed the environment as more vulnerable to harm rated animals, plants, and the environment as more worthy of moral concern. Third, the more that people believed the powerful are vulnerable to harm, the more strongly they endorsed right-wing authoritarianism, as well as power and conformity values, and viewed deference to authorities as a moral imperative. Fourth, participants who provided higher ratings for AoVs of the Divine also showed higher endorsement of supernatural beliefs. These results add to our confidence in the validity of this AoV measure and support the argument that assumptions of vulnerability are core to understanding morality.

We also observed a handful of relationships that contrasted with our pre-registered expectations. AoVs for the environment were significantly associated with openness to experience, and AoVs for the divine were significantly associated with need for cognitive closure. These findings cannot be explained by the overlap of these AoVs with conservatism, as

we controlled for it in these models. It could be that these relationships are driven by more nuanced aspects of political and religious ideology. Better understanding these relationships is a valid direction for future research.

Overall, the evidence provided by Study 5 suggests these AoV items constitute a valid measure that adds an important missing piece to the puzzle of morality and politics.

Study 6: Assessing AoVs with Implicit Measures

Study 6 addressed important concerns with the self-report methodology that we relied upon in previous studies. With any self-report measure, it is possible that responses reflect some self-monitoring or post-hoc altering of beliefs. We note that all other measures of morality involve the same self-reported Likert-type responses as used by the AoV scale, but nevertheless, the methodology used in Study 6 allows us to directly address these concerns. We used the Affect Misattribution Procedure (AMP) to investigate whether self-reported explicit AoVs were associated with implicit AoVs across all four categories captured by the AoV scale (*The Other, The Environment, The Powerful, and The Divine*). The AMP uses the logic of projective tests, where people implicitly ascribe meaning to ambiguous stimuli. Past research supports its validity and shows that it strongly predicts explicit attitudes, such as racism (Payne et al., 2005; Miles et al., 2019). We expected to find high consistency between explicit and implicit assumptions of vulnerability.

Method

Participants

There were 299 American participants recruited via CloudResearch who completed the online survey. We only analyzed data from participants who passed more than 3 of 5 total attention checks (18 excluded before analysis). After completing the survey, three additional

participants did not consent to analyzing their data. The final sample ($N = 278$; 138 men, 139 women, 1 other; $M_{age} = 37.55$) was 75.5% White, 9.0% Black or African American, 7.2% Asian, 6.8% Latinx/Hispanic, 1.4% American Indian or Alaska Native. Education level spanned from no high-school degree through doctoral degree and income spanned from under \$25,000 to over \$150,000 per year. Modal education level was a college degree (54.0%) and the median income was between \$50,000 and \$75,000 per year.

Measures

Assumptions of Vulnerability. Participants completed the same measures of the othered, $M (SD) = 3.92, (0.93), \alpha = .92$; the environment, $M (SD) = 4.20, (0.91), \alpha = .92$; the powerful, $M (SD) = 2.42, (0.91), \alpha = .85$, and the divine, $M (SD) = 1.82, (1.00), \alpha = .93$, as in Study 4 and Study 5.

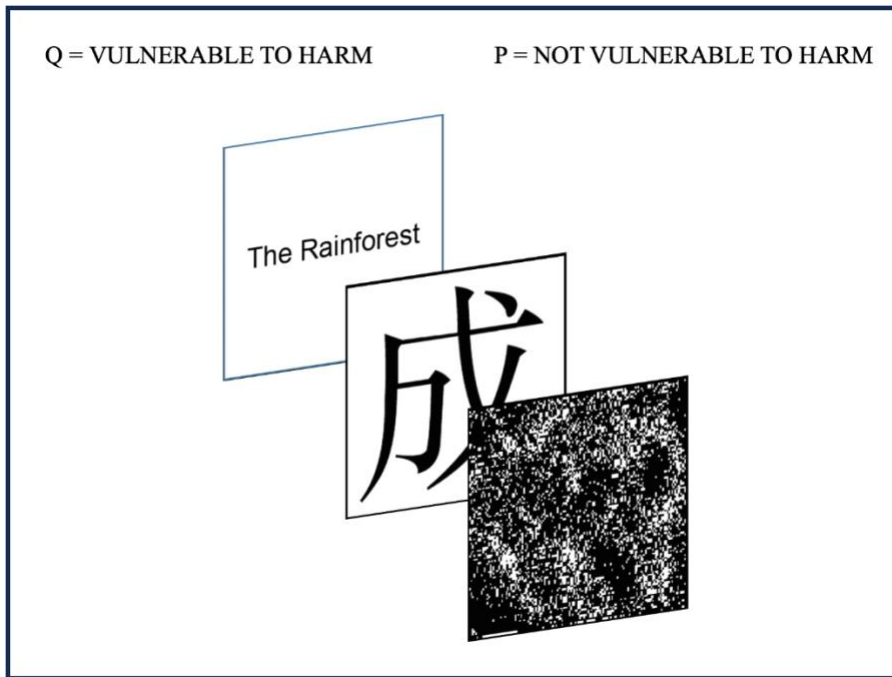
Implicit Measures of Vulnerability. We adapted the Affect Misattribution Procedure (AMP) developed by Payne and colleagues (2005) to measure perceptions of vulnerability. Participants were flashed with two images in quick succession: a primed stimulus (one of the twelve AoV words; e.g., The Rainforest) followed by an ambiguous target stimulus (a Chinese symbol). Following the target stimulus, participants were shown a visual mask image to prevent them from viewing the Chinese symbol while they made an evaluative judgment about it (see Figure 9). Participants were explicitly told to ignore the English word and select one of two options indicating whether the Chinese symbol referred to something vulnerable (coded as 1) or not vulnerable (coded as 0). The logic of the AMP is that evaluative judgments about an ambiguous stimulus (the Chinese character) may be unintentionally influenced by affective reactions to the primed stimulus (the AoV target word). The extent to which the judged vulnerability of the Chinese symbol is influenced positively or negatively by the AoV prime

allows us to determine the extent to which the AoV prime is implicitly seen as vulnerable. The AMP is validated by over a decade of research as a measure of implicit attitudes (see Payne & Lundberg, 2014 for a review) that predict both explicit attitudes (e.g., racial attitudes; political preferences; Payne et al., 2005) and behaviors (Cameron et al., 2012).

Participants went through a total of three blocks of trials of this procedure. In each block they evaluated all twelve AoV targets (flashed one at a time paired with a Chinese symbol) on one of the three dimensions of vulnerability: vulnerability to harm, mistreatment, and victimization. The order of targets was randomized within each block. We generated AMP scores by averaging across these twenty-seven ratings: the Othered, $M (SD) = 0.59, (0.25)$; the Environment, $M (SD) = 0.60, (0.24)$; the Powerful, $M (SD) = 0.45 (0.23)$; and the Divine, $M (SD) = 0.39 (0.24)$. Figure 11 displays a representative set of stimuli from the AMP procedure.

Political Orientation. Participants completed the same conservatism measure from Studies 1-4, $M (SD) = 3.48 (1.63)$.

Figure 11. Schematic Diagram of the Affect Misattribution Procedure Used in Study 6.



Results

We first used correlational analyses to test the association between explicit ratings of vulnerability provided by AoV and the implicit ratings of vulnerability provided by the AMP. Results, shown in Table 6, revealed that explicit and implicit measures were, as predicted, highly correlated for all four dimensions. These results show that ratings of vulnerability for these targets at the conscious corresponded to automatic responses at the more intuitive level. These relationships indicate responses to the AoV scale we have developed are valid, rather than representing a set of response biases or post-hoc justifications.

Table 6. *Correlations between scores on AOV and AMP for the Othered, Environment, Powerful, and Divine in Study 6.*

	Implicit AoVs: AMP Scores			
	Othered	Environment	Powerful	Divine
Explicit AoVs				
Othered	.32***	.12*	-.07	-.04
Environment	.16**	.31***	-.11	.03
Powerful	.05	.00	.45***	.12
Divine	-.06	-.03	.21***	.39***

Note. $N = 278$. *** $p < .001$, ** $p < .01$, and * $p < .05$.

We next examined relationships between conservatism and both sets of measures. For explicit AoV variables, results replicated previous studies, with conservatism being negatively associated with AoVs of the Othered ($r = -.43$) and the Environment ($r = -.36$), and positively associated with AoVs of the Powerful ($r = .25$) and the Divine ($r = .39$, all p 's $< .001$). The same pattern emerged for implicit AoVs as assessed by the AMP, although the magnitudes of these relationships were expectedly weaker, which is not uncommon when there exist methodological differences across measures (with conservatism being assessed at the explicit level and AoVs being assessed at the implicit level; Dovidio et al., 2001). Specifically, conservatism was negatively associated with AMP scores for the Othered ($r = -.15$, $p = .01$) and the Environment ($r = -.12$, $p = .049$) and positively associated with AMP for the Powerful ($r = .18$, $p = .002$). Conservatism was not significantly associated with AMP for the Divine ($r = .09$, $p = .15$), but the relationship was in the expected direction.

Discussion

Study 6 showed explicit and implicit measures of AoVs correlated positively with each other and showed the same pattern of relationships with political ideology. Of course, due to

differences in whether measurement methods overlapped, associations among variables at the explicit level were of stronger magnitude than associations for variables across the implicit and explicit levels (Dovidio et al., 2001). As in previous studies, more liberal people showed higher implicit and explicit assumptions of vulnerability for the Othered and the Environment; and those higher on conservatism viewed the Powerful and the Divine as more vulnerable. These results indicate that the explicit AoV measure indeed captures genuine judgements of these various targets as susceptible to harm, mistreatment, and victimization, rather than some other process of post-hoc reasoning and justification.

Section 3

In the third and final set of studies, we extended self-reported AoVs to behaviors with real-world implications. In Study 7, we tested whether the four AoV themes predicted decisions regarding which types of charity to which they would like to donate money. We expected that higher scores on each AoV theme would predict likelihood of donating to a charity with a corresponding theme. For instance, those who see the Environment as more vulnerable to harm should be more likely to donate to an environmental charity, rather than charities supporting the Othered, the Powerful, or the Divine.

Although we suggest that AoVs are relatively stable perceptions of people, we suggest that they can be experimentally influenced. In Study 8, we provide a test of the contextual malleability of assumptions of vulnerability of one paradigmatically “Othered” and “Powerful” targets: Homeless people and CEOs. We manipulated perceptions of vulnerability of a CEO and a homeless person, and then measured moral assessments of the CEO refusing to donate money to the homeless person. Our key prediction was that describing the CEO as more vulnerable would reduce moral condemnation of their decision to not help the homeless.

Study 7: AoVs Predict Charity Donations

Thus far, we have shown the AoV scale has sound structure, reliability, and validity. However, all preceding studies have relied on self-report variables (and, in one case, an implicit measure). In Study 7, we assessed the relevance of AoV to behavior in the moral domain. Participants completed AoV towards the Othered, the Environment, the Powerful, and the Divine. Adopting methodology from previous research (e.g., Goenka & Van Osselaer, 2019), participants were forced to choose whether to donate to a charity relevant to one domain (e.g., the NAACP for the Othered) vs. another (e.g., Law Enforcement Charitable Foundation for the Powerful). We purposefully chose real charities for this study and ensured that each charity exemplified one of the four entities represented in the AoV scale. We expected those who perceive relatively high vulnerability in each category to be more likely to donate to the charity corresponding to that domain. For instance, those who perceive the Othered as highly vulnerable should be more likely to donate to the NAACP.

We noted that binary measures of real behavior are typically noisier than continuous self-report Likert scales but nevertheless suggest that they will—overall—map onto people’s AoVs.

Method

Participants

There were 200 American participants who completed the survey online via Amazon Mechanical Turk. We only analyzed data from participants who passed more than 3 of 5 total attention checks (14 excluded before analyses). The final sample ($N = 186$ participants, 93 female, 92 male, 1 other; $M_{age} = 41.91$ years) was 86.0% White, 5.9 % Asian, 4.8% Black or African American, 2.7% Latinx/Hispanic, 0.5% American Indian or Alaska Native. Income

ranged from under \$25,000 to over \$150,000 per year. Modal education level was a bachelor's degree (57.5%) and the median income was \$50,000 - \$75,000 per year. Sample size was determined in advance of data collection, per preregistration.

Measures

Assumptions of Vulnerability. We administered the same measure for assumptions of vulnerability as in Studies 4 through 6. The othered, $M (SD) = 3.70, (1.09), \alpha = .93$; the environment, $M (SD) = 3.83, (1.04), \alpha = .92$; the powerful, $M (SD) = 2.41, (0.93), \alpha = .89$, and the divine, $M (SD) = 1.70, (1.08), \alpha = .93$.

Charity Donations. The prompt preceding the charity donation questions read as follows: "Imagine that you have been given an amount of money to donate to charity. We have a list of 8 charities from which we will be choosing 2 to donate to, but first we want to see which charities people care about the most. For each pair of charities presented to you, select the charity that you would most prefer your money going to." Participants were then tasked with choosing between pairs charities, each of which represented one of the four AoV factors (Combinations presented to participants shown in Table 7). This measure was binary, with the first charity was coded as 0 and the second charity coded as 1. We paired the charities in such a way that participants were eventually presented with all six possible combinations between these charities.

Table 7. Forced-Choice Donation Pairings

	<i>Charity 1 (coded as 0)</i>	<i>Charity 2 (coded as 1)</i>
<i>The Environment vs. The Othered</i>	National Association for the Advancement of Colored People: works to eliminate race-based discrimination	Clean Air Task Force: supports zero-emissions policies for cleaner air
<i>The Divine vs. The Powerful</i>	Concerns of Police Survivors: supports the families of deceased police officers	The Voice of the Martyrs: supports persecuted Christians
<i>The Powerful vs. The Othered</i>	International Rescue Committee: supports refugees	Law Enforcement Charitable Foundation: supports police officers
<i>The Divine vs. The Environment</i>	Clean Air Task Force: supports zero-emissions policies for cleaner air	The Voice of the Martyrs: supports persecuted Christians
<i>The Divine vs. The Othered</i>	National Association for the Advancement of Colored People: works to eliminate race-based discrimination	Help The Persecuted: protects Christians from radical groups
<i>The Environment vs. The Powerful</i>	Law Enforcement Charitable Foundation: supports police officers	Clean Air Task Force: supports zero-emissions policies for cleaner air

Political Orientation. Participants completed the same conservatism measure from Studies 1-4, $M (SD) = 3.64 (1.92)$.

Results

Correlation analyses replicated previous results for conservatism and AoVs (see the Supplement, p. 27). To test our main hypotheses regarding charity donation, we ran a series of logistic regressions. In 6 models, we regressed each binary charity donation variable onto conservatism, and each of the four AoV variables. Full results (including standardized beta weights) are shown in the Supplement, pp. 27 – 29.

The Environment. In all cases, AoVs for the environment were associated with higher likelihood of donating to the environmental charity: For donating to the environment (coded 1) vs. the othered (coded 0), $OR [95\% CI] = 1.68 [1.16, 2.50]$; the environment (0) vs. the divine (1), $OR [95\% CI] = 0.63 [0.37, 1.05]$; and, the environment (1) vs. the powerful (0), $OR [95\% CI] = 1.28 [0.82, 2.03]$. Note, the 95% confidence intervals are relatively large, likely due to the small sample size in this study. Although all results were in the direction consistent with our predictions, not all of these confidence intervals do not meet significance thresholds, likely because of relatively low power with a binary behavioral measure.

The Othered. Consistent with our predictions, endorsing higher AoVs for the Othered was significantly associated with a higher likelihood of donating to a charity representing people who are othered (0) vs. charities representing the environment (1), $OR [95\% CI] = 1.68 [1.16, 2.50]$, the powerful (1), $OR [95\% CI] = 1.68 [1.16, 2.50]$, and the divine (1), $OR [95\% CI] = 1.68 [1.16, 2.50]$. These results add evidence to the correspondence between our self-report measure of AoVs and relevant real-world behaviors.

The Powerful. Again supporting our pre-registered expectations, AoVs for the powerful were associated with a higher likelihood of donating to a charity that benefits the powerful vs. other charities: For donating to the powerful (1) vs. the othered (0), $OR [95\% CI] = 1.42 [0.93, 2.20]$; the environment (1) vs. the powerful (0), $OR [95\% CI] = 0.50 [0.30, 0.81]$; and, the divine (1) vs. the powerful, $OR [95\% CI] = 0.80 [0.53, 1.17]$. Again, despite being in the predicted direction, this last confidence intervals overlapped with 1, likely due to limited power. Nevertheless, this overall pattern of results demonstrates the expected consistency between self-reported perceptions of vulnerability for powerful figures, and the likelihood of engaging in charity behaviors that helps those figures.

The Divine. Finally, in every forced-choice pairing, AoVs for the Divine were significantly associated with a higher likelihood of donating to a charity representing the divine (coded 1) vs. the othered (0), *OR [95% CI] = 1.80 [1.10, 3.00]*, the environment (0), *OR [95% CI] = 1.70 [1.08, 2.73]*, and the powerful (0), *OR [95% CI] = 1.51 [1.08, 2.14]*. These results show a high degree of overlap between self-reported views of divine targets as vulnerable to harm and actually engaging in behaviors that provides charity support to them.

For more details about these results, including standardized beta weights, see the Supplement pp. 27-28 and Table S18, p. 29.

Discussion

Study 7 provided evidence that self-reported assumptions of vulnerability predict important real-world behaviors. Those who more strongly endorsed vulnerability of the Environment, the Othered, the Powerful, and the Divine were more likely to choose to donate to charities representing those groups. This pattern emerged even when using relatively conservative models (controlling for conservatism and all other AoVs to assess the unique effect of each), and when those assumptions of vulnerability that are more closely related to each other (the environment with the othered; and the powerful with the divine) were pitted against each other. In all cases, effects were in the expected direction, but a handful of findings for the environment and the powerful failed to reach. But the overall pattern supports for the relevance of assumptions of vulnerability for charity behaviors.

Study 8: Experimentally Manipulating AoVs

In this study, we attempt to experimentally manipulate AoVs and see if this causally impacts people's moral judgments. Participants passed judgment about a CEO who refused to

donate money to a homeless person, after emphasizing the vulnerability of the CEO or the homeless person (or neither). In line with the idea of moral typecasting (K. Gray & Wegner, 2009), we expected that this emphasis would impact AoVs towards these targets and make the failure to donate either less immoral (because the CEO is more of a victim) or more immoral (because the homeless person is more of a victim).

Method

Participants

There were 507 American participants who completed the survey online via Amazon Mechanical Turk. We only analyzed data from participants who passed more at least one of two attention checks (1 excluded before analyses). The final sample ($N = 506$ participants, 266 women, 237 men, 3 other; $M_{age} = 43.0$ years) was 78.5%, 9.1% Black or African American, 6.9% Asian, 4.5% Latinx/Hispanic, 0.8% American Indian or Alaska Native, and 0.2% Native Hawaiian or Other Pacific Islander. Education level spanned from no high-school degree through doctoral degree and income spanned from under \$25,000 to over \$150,000 per year. Modal education level was a bachelor's degree (52.2%) and the median income was \$50,000 - \$75,000 per year. Sample size was determined in advance of the data collection, per preregistration.

Design

After providing informed consent, participants read the following scenario:

“It's almost dark and James Smith, a homeless person, is standing at the entrance to the garage as Nicole French, the CEO of an investment banking firm, is walking to her car after working late. James asks for some money and Nicole, despite having a lot of money, hurries by.”

Then, participants were randomly assigned to one of three conditions. In the *Control* condition ($n = 183$), participants were directed to the dependent variables after reading the scenario. In the *CEO Vulnerability* condition ($n = 166$), participants were instructed to think about ways in which the CEO could be vulnerable to harm and mistreatment, and to write a few sentences about that. In the *Homeless Vulnerability* condition ($n = 157$), participants were instructed to think about ways in which the homeless person could be vulnerable to harm and mistreatment, and to write a few sentences about that. Finally, participants completed the same dependent measures as in the *Control* condition.

Measures

AoV CEO. We asked participants to rate CEOs on the following three items (5-point scale from 1 = Not at all vulnerable to 5 = Completely vulnerable): “I believe that the [CEO is] especially vulnerable to being harmed,” “I think that the [CEO is] especially vulnerable to mistreatment,” and “I feel that the [CEO is] especially vulnerable to victimization.” We averaged these three items to create a composite reflecting the belief that CEOs are vulnerable, $M (SD) = 2.45 (0.96)$, $\alpha = .82$.

AoV Homeless. Participants responded to three items on a (5-point scale from 1 = Not at all vulnerable to 5 = Completely vulnerable): “I believe that [homeless people are] especially vulnerable to being harmed,” “I think that [homeless people are] especially vulnerable to mistreatment,” and “I feel that [homeless people are] especially vulnerable to victimization.” These were used to create a mean composite reflecting perceptions of people who are homeless as vulnerable, $M (SD) = 4.11 (0.84)$, $\alpha = .81$.

Moral Judgements of CEO’s Behavior. On a scale from 1 (*not at all*) to 7 (*very much*), participants responded to the following three items: “I believe that the CEO did the right thing.”

[reverse scored], “I believe that the CEO should have given some money to the homeless person.”, and “I believe that the CEO’s behavior was wrong,” $M (SD) = 4.19, (1.51), \alpha = .90$.

Political Orientation. Participants completed the same conservatism measure from Studies 1-4, $M (SD) = 3.76 (1.83)$.

Results

Manipulation Check

The manipulation significantly affected perceived vulnerability of the CEO, $F(2, 503) = 10.86, d = 0.41, p < .001$. Tukey HSD adjusted pairwise-comparisons revealed that perceived CEO AoV was higher for participants in the *CEO* vulnerability condition ($M = 2.71, SD = 1.00$) than participants in the Control ($M = 2.40, SD = 0.93; p = .007$) or Homeless vulnerability ($M = 2.23, SD = 0.89; p < .001$) conditions. Likewise, homeless AoVs were significantly higher in homeless vulnerability condition ($M = 4.26, SD = 0.72$) vs. the *CEO* vulnerability condition ($M = 3.99, SD = 0.89; p = .009$), $F(2, 503) = 4.47, d = 0.29, p = .01$. Perceived vulnerability of the homeless did not differ between other conditions, $ps > .16$, likely because homeless people are usually perceived as highly vulnerable).

Moral Judgments

The manipulation also significantly affected how wrong participants viewed the CEO’s behavior, $F(2, 503) = 6.47, d = .35, p = .002$. Tukey HSD adjusted pairwise-comparisons revealed the CEO’s behavior was less wrong (more acceptable) in the *CEO* vulnerability condition ($M = 3.85, SD = 1.49$), relative to the Control ($M = 4.34, SD = 1.45; p = .007$) and Homeless vulnerability ($M = 4.38, SD = 1.54; p = .004$) conditions. Perceived wrongness of

CEO's behavior was not significantly different between the homeless vulnerability and control conditions ($p = .96$).

Lastly, results of mediational analyses (controlling for political orientation) showed a significant indirect effect of condition (from Homeless Vulnerability to CEO Vulnerability condition) on perceived wrongfulness of the CEO's behavior via assumptions of vulnerability of the CEO ($b = 0.17$, $SE = 0.06$, $p < .05$, 95% CI [0.08, 0.30]), and a significant indirect effect via assumptions of vulnerability of the homeless ($b = 0.08$, $SE = 0.04$, 95% CI [0.01, 0.17]). Thus, all hypotheses were supported. Experimentally enhancing a target's perceived vulnerability caused participants to view transgressions against them as more morally wrong.

Discussion

Study 8 demonstrated that assumptions of vulnerability are at the crux of understanding moral judgements. Participants exposed to a moral dyad (a homeless person and a CEO) rated a moral act (refusing to help the homeless person) as more permissible when the typical agent (the CEO) was experimentally manipulated to be perceived as more vulnerable; and as more condemnable when the typical patient (the homeless person) was more vulnerable. This pattern of results shows that AoVs are a mechanism that can be leveraged to change moral perceptions in the context of any given dyad. Moral judgements are driven by perceptions of harm, and these harm perceptions boil down to who and how much targets are believed to be vulnerable.

General Discussion

The current research addressed an ongoing debate in moral psychology about whether descriptive political differences in moral judgments require the existence of different foundations rooted in different mental moral modules (e.g., Haidt & Joseph, 2004); or whether moral

disagreement can stem from a common harm-based moral template that we all seem to share (e.g., Ochoa, 2022; Schein & Gray, 2015). Consistent with the idea of a harm-based moral mind, and the Theory of Dyadic Morality (Schein & Gray, 2015, 2018), we found that different understandings of harm can give rise to moral disagreement. Even though people ground their moral judgments in concerns about harm, different people make different assumptions about which targets are more vulnerable to victimization or mistreatment. These different assumptions of vulnerability (AoVs) parsimoniously explain moral differences without needing to posit separate moral mechanisms for every domain of political disagreement.

The first section of studies explored the basic concept of assumptions of vulnerability (AoVs). In the Pilot Study, we developed some face-valid AoV items, and found that canonical moral patients, typically seen by people as more vulnerable, indeed had higher AoVs. Study 1 showed that AoVs predicted judgments of moral status across different targets, and mirrored obvious differences between liberals and conservatives. For example, conservatives had higher AoVs about fetuses, and this explained why conservatives imbued them with moral rights. Study 2 revealed the connection between AoVs and moral judgment for politically contentious issues like illegal immigration, even controlling for political ideology. When people disagree about the vulnerability of an entity, they disagree about its moral treatment. Study 3 found that conservatives (vs. liberals) viewing certain inanimate objects as more vulnerable to harm, like the Bible and the US Flag, was grounded in viewing these objects as more alive, suggesting that AoVs are not merely metaphorical but instead revolve around actual vulnerability to harm.

In the second set of studies, we applied AoVs to four themes in ongoing political debates, The Environment, The Othered, The Powerful, and The Divine. In Studies 4a (convenience) and 4b (high quality national sample), exploratory and confirmatory factor analyses supported the

structure of these themes and found illuminating political differences: liberals view the Environment and the Othered as more vulnerable to harm, and conservatives tend to view the Powerful and the Divine as more vulnerable to harm.

Across these four clusters, a broader pattern emerged: committed liberals see the Othered and Environment as very vulnerable to harm and the Powerful and the Divine as very invulnerable to harm. Committed conservatives view these four of these groups as similarly vulnerable to harm. Studies 4a and 4b also showed that AoVs predicted political differences in moral foundations. AoVs also predicted immorality ratings for transgressions against thematically related targets (e.g., AoVs for the Othered predicted immorality of detaining immigrants), above and beyond moral foundation items and political ideology, showing their unique ability to explain moral judgments.

Study 5 added to our confidence in our measure of AoVs by demonstrating high test-retest reliability and by linking AoVs to a nomological net, including moral expansiveness, basic values, authoritarianism, supernatural beliefs, and cognitive dispositions. People who more strongly endorsed AoVs for the Environment, the Othered, the Powerful, and the Divine also endorse sets of values, beliefs, and dispositions that are thematically related to these. Study 6 further added legitimacy to our conceptualization of AoVs by showing the correspondence of AoVs measured implicitly and explicitly.

The third set of studies expanded on our understanding of AoVs. In Study 7, we demonstrated that AoVs for the four themes predicted higher likelihood of contributing real donations to a thematically relevant charity vs. unrelated charities (e.g., higher AoVs for the Othered predicted donating to the NAACP vs. charities thematically linked to the other themes), even when controlling for conservatism. Even though AoVs were often measured via self-report,

they correspond to every-day, morally-relevant, and conceptually-consistent behaviors. Study 8 found that AoVs can be experimentally manipulated, and this allowed us to causally demonstrate that AoVs predicted moral judgments.

Across these three sets of studies, AoVs seem to meaningfully explain both moral judgments and political disagreement within the framework of a common harm-based moral mind. These results are consistent with ideas proposed years ago by Turiel, who suggested that different “informational assumptions” about harm help give rise to moral differences across people and cultures (Turiel et al., 1987). Explaining differences in moral judgment with informational assumptions—which are intrinsically amoral—helps avoid the tautology found with moral foundations theory, which explains moral differences via moral differences (i.e., conservatives are more likely to moralize certain concerns because a questionnaire reveals that they moralize those concerns).

Political Differences

When comparing those on the political left to the political right, moral differences are bound to emerge because these ideological views are tied up in factors such as demographics and identity (Hogg, 2007; Pew Research Center, 2018), attitudes about systems and power (Jost et al., 2003), different motivational concerns (Greenberg et al., 1990) personality traits (e.g., Hirsh et al., 2010), cognitive dispositions (Choma et al., 2014; Womick & King, 2021), interpersonal orientation (Morris, 2020), worldviews (Koltko-Rivera, 2004), and even genetics (Lewis & Bates, 2014). The current paper expands upon past research by revealing a concrete ideological difference in AoVs and demonstrating that it predicts moral judgment.

AoVs also help explain why liberals and conservatives respond differently to specific scenarios and items in the MFQ. Rather than possessing different overall values or foundations, partisans systematically view different entities as vulnerable to harm. For instance, the fact that conservatives see general authority figures as more vulnerable than liberals provides insight into why they report valuing “authority” more than liberals (and, as the current work shows, provides additional explanatory value in values for deference, conformity, and right-wing authoritarianism).

Although we do not believe that the moral differences between ideological groups are essential, immutable characteristics, liberals and conservatives consistently depart from each other on AoVs in ways that connect with their political ideologies. These different perspectives help make sense of real-world conflict about topics like race and policing. Liberals emphasize how black men are generally more vulnerable, emphasizing the number of unarmed black men killed from unjustified force and police brutality. Conservatives typically highlight the underemphasized vulnerability of police officers, who risk their lives every day to help enforce laws.

Likewise, debates about immigration seem to focus on different narratives of vulnerability. Liberals typically emphasize the vulnerability of illegal immigrants, whose children may be detained or fleeing violence and instability in their home country. Conservatives seem to emphasize the vulnerability of local business owners or Americans who they believe may be harmed by illegal immigrants who they feel threaten the American economy. Our goal here is not to weigh in on the truth of these perceptions—many other social psychology scholars have done illuminating work on race and power—but merely to illustrate the connection between AoVs and ongoing battles about politics and morality. Still, there remains work to be done

investigating the psychological underpinnings responsible for liberals and conservatives view specific groups vs. others as more and less vulnerable. These are likely linked to broader tendencies around topics like traditional power hierarchies, and should be investigated in future research.

In the current research, we found that not only do liberals and conservatives differ in which entities they perceive as relatively vulnerable to harm, they also differ in the extent to which they distinguish between the vulnerable and invulnerable. In the current set of studies, those on the far left divided the world into the extremely vulnerable (The Othered and The Environment) and the extremely invulnerable (The Powerful and The Divine). Conservatives on the other hand, minimized the differences in AoV between entities, seeing them as more similar in levels vulnerability. The strong distinction shown by liberals is consistent with the emphasis of progressives on the importance of systemic power differences, and the tendency to typecast social groups as oppressors and oppressed (e.g., Freire, 2005). These data suggest, to those on the far left, the world is a dichotomy between the powerful who are undeserving of protection, and the marginalized who are in urgent need of protection. We suspect these narratives of equality versus inequality in vulnerability arise from basic political assumptions, and look forward to studying this in future work.

Limitations & Future Directions

The present research synthesized many studies using cross-sectional and multi-wave data, self-report and implicit measures, convenience sampling and nationally representative data, and combined correlational with experimental research. This methodological variety balances strengths and weaknesses across studies and provides a rich set of consistent and replicable

evidence for our hypotheses. Table 8 summarizes key limitations to these data. One limitation on the inferences that can be drawn from these data is that all participants located in the United States. We were primarily concerned with understanding political differences in the United States, which in many ways is an outlier on politics globally. Still, for those interested in applying these results to other contexts, the reliance on U.S. participants leaves unclear the cross-cultural generalizability of these results. Researchers should probe generalizability in subsequent studies.

Table 8. *Table of Limitations*

Category	Description
1. Generalizability	Use of non-representative data
2. Generalizability	Use of U.S. based samples
3. Conceptual	Focus on perceptions of moral patients and not moral acts and moral agents
4. Conceptual	Focus on politics broadly, rather than the intersectional identities and related processes underlying political dispositions

Based on our theoretical framework, we focused on how perceptions of the vulnerability of moral patients can help us understand moral judgement and political differences. Yet, patients are only one part of the equation of morality. The Theory of Dyadic Morality posits that harm is perceived when 1) an intentional agent 2) acts on 3) a vulnerable patient. We expect that moral disagreement can also be understood in terms of perceptions of moral agents and the extent to

which different categories of agentic entities are perceived to be likely to and capable of causing harm, and what kinds of acts are perceived to be valid deliveries of harm. For instance, people may differ on what kinds of actors they view as intentional agents capable of causing harm (e.g., men vs. women; corporations vs. people; systems vs. individuals), as well as what kind of acts are legitimate means of causing harm (e.g., verbal vs. physical; direct vs. indirect; prayer vs. witchcraft, etc). Exploring these issues may further enlighten how moral differences in politics and other domains can emerge from a common harm-based template.

Finally, the current research was designed to understand liberal-conservative differences in morality broadly. Yet, political attitudes, beliefs, and behaviors are varied and connect with a variety of identities (which in the case of politics, are often intersectional). Future research should explore how assumptions of vulnerability help explain moral differences that emerge from other politically relevant attitudes, such as social dominance orientation, system justification, just world beliefs, right-wing authoritarianism, and left-wing authoritarianism. Additionally, further research needs to examine the role of identity in assumptions of vulnerability and their relationship to politics and moral judgment more closely (see Hester & Gray, 2020).

In the United States, there are systematic demographic differences between those on the political left and the political right. Those on the right tend to be more demographically homogenous and are more likely to be older, white, wealthy, and male Americans (Pew Research Center, 2018). In contrast, the left tends to be comprised of greater demographic heterogeneity, including more Americans who belong to marginalized groups, and a wider variety of religious diversity (Pew Research Centers, 2018). Understanding how these factors impinge on assumptions of vulnerability and their relationship to politics and morality is an urgent goal for

future science. Even in light of these considerations, assumptions of vulnerability represent a novel piece of the puzzle of morality and politics and provide a key to understanding commonalities and differences across these.

Conclusion

Political differences in moral judgments are obvious, but the explanation for these differences are less obvious. Across eight studies, we find that people's assumptions of vulnerability (AoVs) predict their moral judgments and give shape to political disagreement. We all share the same harm-based mind, grounding our moral judgments in concerns about protecting vulnerable entities from suffering. But there are many different potentially vulnerable entities, from the children who make up the future of society, to the powerful people who enforce social order. How much people view these various entities as vulnerable to victimization—including the Othered, the Environment, the Powerful, and the Divine—helps explain political disagreement about hot-button issues.

AoVs not only parsimoniously explain moral differences, they also provide some optimism. Although they disagree, liberals and conservatives both care about victimization and mistreatment. Grounding differences in the common currency of assumptions of vulnerability provides a shared reality to foster understanding. When seeking to understand someone with a different moral position, ask yourself a simple question: what do they see as vulnerable to victimization, mistreatment, or harm?

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