



Why we fight: investigating the moral appeals in terrorist propaganda, their predictors, and their association with attack severity

Lindsay Hahn^{1,*}, Katherine Schibler¹, Tahleen A. Lattimer¹, Zena Toh¹, Alexandra Vuich¹,
Raphaella Velho¹, Kevin Kryston², John O'Leary¹, Sihan Chen¹

¹Department of Communication, University at Buffalo, State University of New York, Buffalo, NY, USA

²Department of Business Administration and Entrepreneurship, Sam Houston State University, Hunstville, Texas, USA

*Corresponding author: Lindsay Hahn. Email: Lhahn2@buffalo.edu

Abstract

How do terrorists persuade otherwise decent citizens to join their violent causes? Guided by early mass communication research investigating propaganda's efficacy and the model of intuitive morality and exemplars, we investigated the persuasive moral appeals employed by terrorist organizations known to be successful at recruiting others to their causes. We compiled a database of $N=873$ propaganda items created by $N=73$ violent terrorist organizations and content analyzed the moral appeals emphasized in each. Results revealed that terrorist groups' ideologies and motivations predicted the moral values they emphasized in their propaganda, and that ingroup loyalty and fairness appeals featured prominently across all propaganda. Terrorist groups' emphasis on purity in their propaganda was positively correlated with their attack frequency and with the number of human casualties they caused worldwide and in the USA. Terrorists' emphasis on ingroup loyalty in propaganda was also positively correlated with the number of US human casualties they caused. Theoretical and practical implications are discussed.

Keywords: propaganda, terrorism, morality, content analysis.

In 2019, terrorists killed over 20,000 people globally (START, 2021). Terrorism can be broadly defined as “the threatened or actual use of illegal force and violence by a non-state actor to attain a political, economic, religious, or social goal through fear, coercion, or intimidation” (START, 2019, p. 11). Understanding and ultimately reducing the violent impact of terrorism is an important humanitarian issue, and requires attention from a variety of social-scientific fields. Many scholars have attempted to explain what leads otherwise nonviolent people to apparently reject compassion-based values, as well as psychological and social restraints against harming others, to join and subsequently act violently on behalf of terrorist organizations (Bandura, 1990, 1999; Collins, 2008). Investigations into the cognitive mechanisms underlying perpetrators' ability to subvert these restraints in pursuit of violence have demonstrated that violent actors generally believe their actions are *morally righteous* (Fiske & Rai, 2015; Hahn et al., 2019; Hoover et al., 2021; Kruglanski et al., 2019). That is, perpetrators engage in violent attacks because they fundamentally believe that their violent means merit some virtuous end.

Drawing on moral foundations theory (MFT; Haidt & Joseph, 2007), recent research characterized terrorist organizations as groups of perpetrators motivated to uphold the same moral value at all costs, even if those costs involve killing other humans (Hahn et al., 2019; also see Fiske & Rai, 2015; Rigoli, 2023). That is, people may override their compassion-based principles (i.e., what MFT terms the *care* value) in pursuit of upholding a moral value they deem more important. Similar work suggests that, compared to those who prioritize other moral concerns, people who place more importance on certain group-based moral values are more likely to justify prejudicial violence

against outgroups (Hoover et al., 2021). Thus, appeals to audiences' moral values may act as key mechanisms by which perpetrators can persuade otherwise decent citizens to join their violent causes. The present study investigates this potential by examining the moral value appeals emphasized in terrorist propaganda.

Since the earliest days of mass communication research, scholars have suggested that propaganda can bolster audiences' preexisting attitudes (Hovland et al., 1949; Lasswell, 1927, 1971). As such, extremist groups that propagandize their efforts as upholding a moral value that audiences already hold in high regard may be particularly successful at persuading outsiders to join their cause. Coupled with the pervasive nature of extremist propaganda in online spaces, the fact that moral justification is a key factor in perpetrators' decisions to act violently suggests a need to investigate the moral appeals in terrorist propaganda (Bandura, 1990, 1999; Fiske & Rai, 2015; Frazer, 2023; Hahn et al., 2019; Hoover et al., 2021; Workman et al., 2020).

Guided by the model of intuitive morality and exemplars (MIME; Tamborini, 2013), which suggests a reciprocal influence process between media and audiences, the present study examines the moral appeals emphasized in online terrorist propaganda, investigates factors that should predict terrorist groups' use of certain moral appeals in their content, and provides an initial exploration of what specific moral appeals may be correlated with groups' attack severity, defined as the number of attacks and resulting casualties. A secondary goal is to develop an expansive database of terrorist propaganda, the Propaganda from Terrorist Organizations acting in the US

(PTO-US) database, that future researchers can use to advance knowledge in this area.

We begin by reviewing research on what leads people to engage in violent extremism broadly, and how people can be persuaded to act violently by mass communication propaganda specifically. We then introduce the MIME as a theoretical framework useful for investigating terrorist propaganda content, its antecedents, and effects.

Understanding the proximate causes of terrorism

Terrorism is synonymous with extremist violence. Although definitions vary from source to source, scholars generally agree that terrorism is characterized by the threatened or actual use of violence against civilians by non-state actors as a way to either achieve or call attention to some goal (see Ganor, 2002; Matusitz, 2018; START, 2021). In this way, terrorism itself can be thought of as a form of communication wherein actors use violence to transmit messages (e.g., fear, their political goals) to audiences (Matusitz, 2018). According to the Global Terrorism Database (GTD), at least 900,000 offenders were responsible for directly perpetrating more than 200,000 terrorist attacks between 1970 and 2019 worldwide (START, 2021). Countless more members indirectly aided the planning and execution of the groups' attacks (Borum, 2004). Although the proximate and ultimate causes of terrorism are undoubtedly complex, terrorist organizations' ability to successfully attract new members suggests a need to investigate what leads otherwise nonviolent citizens to join these violent causes.

Given that compassion-based values, as well as psychological and social restraints against harming others are thought to be universal in all humans (Bandura, 1990, 1999; Collins, 2008; Haidt & Joseph, 2007), attempts to understand the proximate causes of extremist violence have focused on understanding how some humans come to *subvert* these restraints in pursuit of violence (Rigoli, 2023; Workman et al., 2020). In general, scholars have explained this subversion as a "motivational imbalance" in which one superordinate goal (e.g., strengthening my ingroup) suppresses other subordinate goals (e.g., compassion; Kruglanski et al., 2019, 2021).

Previous work has conceptualized terrorists' motivational imbalance as a "quest for personal significance" (Kruglanski et al., 2018, 2021). In this type of extreme motivational imbalance, an actor is thought to experience an overwhelming motivation to restore their sense of personal worth, no matter the cost (even if it means violating principles of care and compassion toward other humans). Quests for significance are typically catalyzed by some triggering event that leads an actor to perceive diminished self-worth, such as a perceived outgroup threat or injustice (Kruglanski et al., 2014, 2021). In response to perceptions that they or their group have been wronged in some way, actors seek to extinguish the outside threat or restore justice by any means necessary. For individuals who already belong to a like-minded group, violent collective action can seem like a logical response to stop an entity that threatens to harm the group or their beliefs (McCauley & Moskalenko, 2008). Alternatively, perceived outgroup threats or injustices can lead those who do not yet belong to a violent group to seek out others who are already working to extinguish the perceived threat or correct the injustice. Thus, to the actor, their violent actions are *morally righteous* and compulsory to extinguish threats to themselves or their group.

In line with the push-pull model of moralization (PPMM) (Feinberg et al., 2019), as individuals' attention is pushed to focus on what is perceived to be a morally righteous goal, less attention is paid to the means employed to achieve that end, such as physical harm that a group might inflict on intended victims or bystanders (Kruglanski et al., 2019, 2021). Consequently, the extent to which individuals construe their purpose as morally righteous has been identified as a key pathway of radicalization into violent extremist groups (McCauley & Moskalenko, 2008).

The notion that violent extremists are driven by superordinate motivations they perceive as morally virtuous is supported by a growing body of research (Fiske & Rai, 2015; Hahn et al., 2019; Hamid et al., 2019; Kruglanski et al., 2009). For example, Bandura (1999) outlined several mechanisms of selective cognitive moral disengagement that explain how people come to believe their violent cause is righteous, including moral justification, which involves associating a cause with a superordinate righteous purpose (Bandura, 1990, 1999, 2004, 2016). Although the main purpose of moral justification is allowing people to cognitively construe their atrocious behavior as morally acceptable, moral justification is an efficient strategy for persuading outsiders to join their cause as well (Bandura, 2016; Ivie, 1980). We examine this potential by investigating the specific moral appeals used in terrorist propaganda.

Propaganda

Scholars generally use the term propaganda to refer to communication that (a) systematically misrepresents an issue (b) for the purpose of swaying others' viewpoints and instigating action (c) in favor of some political goal (Bernays & Miller, 2005; Drogin, 2022; George, 1959; Jowett & O'Donnell, 2018; Lasswell, 1971; Minei & Matusitz, 2012; North Atlantic Treaty Organization, 2013; Somerville, 2012). More innocuous persuasion attempts such as political campaigns may contain one or more propagandistic elements; however, they usually do not systematically feature all three (but if they did, they would be classified as propaganda; Drogin, 2022; Walton, 1997). We adopt this general definition of propaganda to investigate media content produced by terrorist organizations.

Although early communication research suggested that propaganda's ability to immediately change audiences' attitudes was limited, a robust body of evidence suggests its efficacy for bolstering audiences' existing attitudes (Hovland et al., 1949; Lasswell, 1927, 1971). Akin to foot-in-the-door persuasion, Lasswell (p. 628, 1927) describes propaganda in terms of a sender gaining "access to the individual's private stock of meanings ... and exploiting them" (Weimann, 2010). For example, one terrorist group, the Minutemen American Defense, states on their website that their mission is to "challenge our government to fulfill their constitutionally mandated responsibility" to "secure our borders" and includes the rallying cry made famous by Americans defending United Airlines Flight 93 during the September 11, 2001 terror attacks in the USA: "Let's roll!" By using innocuous familiar terms connoted to be pro-American in their propaganda, the Minutemen appeal to audiences' existing anti-immigration attitudes and offer like-minded readers a sense of belonging and importance in addressing the perceived threat of immigration (Odhiambo et al., 2013).

The internet is an effective tool for this persuasion (Braddock, 2020). Beyond enabling users' purposeful searches for extremist content, the internet also facilitates incidental exposure to propaganda for users who may search for non-extremist value-congruent information (Clever et al., 2023; Frischlich, 2021; Taylor et al., 2015; Wooley, 2023). For example, searching for anti-immigration legislation may lead users to online social spaces that discuss this legislation. These spaces may be used by ethno-nationalist extremists (e.g., the Minutemen American Defense) to disseminate propaganda and recruit individuals who already hold anti-immigration beliefs. Of course, exposure to terrorist propaganda will not persuade or instigate action in every audience. Yet if each group's effort successfully radicalizes even a small number of domestic or foreign observers, the internet's ability to serve as an easy and cost-effective method for spreading extremist propaganda to mass audiences at once can have devastating consequences (Scrivens et al., 2023; Weimann, 2010; Williams et al., 2018). These consequences highlight the importance of understanding propaganda's moral content as a persuasive device. Previous research has demonstrated that moralized content is more likely to be shared online than non-moral content (Brady et al., 2020). Consequently, morally laden propaganda may be more likely to be shared online (compared with non-moral propaganda), and therefore particularly likely to reach a wider audience.

To our knowledge, no research has directly examined specific moral appeals in terrorist propaganda, but previous scholars investigating terrorists' recruitment strategies have noted that appeals to justice, unity, and religious fulfillment, as well as moral disengagement cues, are prominent in propaganda produced by the Islamic State and other jihadi terrorists, and purity-based language is prominent in Nazi propaganda (Frazer, 2023; Frischlich, 2021; Kennedy et al., 2023; Macnair & Frank, 2017; Weimann, 2010). Given the persuasiveness of moralized propaganda (Bandura, 1990, 1999), as well as experimental findings suggesting the degree to which an issue is moralized increases non-extremists' endorsement of violence (Brady et al., 2021; Mooijman et al., 2018; Skitka & Morgan, 2014), investigating the moral appeals emphasized in terrorist propaganda is warranted. The MIME provides theoretical guidance for this investigation.

The MIME

The MIME draws on both exemplification theory (Zillmann, 1999) and reinforcing spirals logic (Slater, 2007) to outline a model of reciprocal influence between audiences' morality and morally laden media. Together, this model explains the processes by which media content comes to emphasize specific exemplars (i.e., examples) of moral values, and how exposure to moral exemplars may affect audiences' media selection, moral judgments, and behaviors. Existing MIME work has conceptualized moral values according to MFT.

MFT (Haidt & Joseph, 2007) posits that people experience moral concerns (i.e., feelings of right versus wrong) in an organized, innate, and intuitive way. Concentrated in five areas and referred to as foundations, each concern is linked to adaptive challenges faced by humans in their evolutionary past. The five foundations include *care*, associated with compassion and concern for those in need; *fairness*, involving concerns of justice and reciprocity; *ingroup loyalty*, concerned with preference and duty to ingroup members; *authority*, pertaining to deference toward benevolent leaders and group

traditions; and *purity*, which concerns desires to avoid physical and/or spiritual contamination. The five foundations are often categorized into two superordinate groups: individualizing foundations (care, fairness), which are primarily concerned with protecting individuals, and binding foundations (loyalty, authority, purity), which primarily reinforce groups and institutions (Graham et al., 2009; but see Atari et al., 2023).¹

In line with exemplification theory, the MIME suggests that, in the short-term, exposure to exemplars of moral values in media content can increase their *salience* or the importance that audiences place on those values. Audiences are thought to then selectively expose themselves to and positively appraise media containing their salient values. For example, an individual may choose to read a news article about immigration that emphasizes their salient ingroup loyalty concerns over an article about the same topic but which emphasizes immigration as a care-based human rights issue. Beyond shaping audiences' behaviors related to media selection, the MIME predicts that the more salient a value is, the greater weight it is afforded in audiences' decision-making, and thus the more likely it is to shape their non-media-related behaviors as well. For instance, loyalty salience may motivate an individual to attend a rally of a group promising to maintain border security.

Over time, these processes are thought to contribute to shared patterns of moral salience among groups who consume similar media and homogenize their moral judgments. Groups with shared patterns of moral salience are referred to as *morality subcultures* (Eden & Tamborini, 2017; Tamborini et al., 2012; Zillmann, 2000). In the long-term, and per reinforcing spirals logic (Slater, 2007), the MIME suggests that media creators respond to audiences' positive appraisal and repeated selection of value-laden media by producing more content exemplifying the same values (cf. Hahn et al., 2022a), which ultimately feeds more content laden with audiences' salient values back into their media environments.

Applying the MIME to investigate terrorist propaganda, its predictors, and its effects

We apply the MIME to terrorist-created propaganda in an attempt to understand the specific moral exemplars extremist content emphasizes, what predicts creators' use of these exemplars, and the potential effects of morally laden propaganda exposure on audiences. Relevant to the current work is the MIME and reinforcing spirals' distinction between open and closed media systems. In open media systems, media creators produce, and audiences can select, diverse interpersonal and mediated content emphasizing an array of moral values that would be positively appraised by a range of audiences (e.g., the broad US media system). By contrast, in closed media systems, media creators produce, and audience select, interpersonal and mediated content that emphasizes a singular moral value (or singular set of moral values; e.g., loyalty and/or racial purity being emphasized in media produced by the Ku Klux Klan). Although completely closed media systems are less common, the MIME and reinforcing spirals model maintain that comparatively closed systems exist for certain social groups who repeatedly produce and selectively expose themselves only to value-consistent content, for instance in the insular media systems of religious fundamentalists and political extremists (Slater, 2007; Tamborini, 2013).

In an open media system, the MIME characterizes media's relationship with audiences' moral salience as a maintenance process, in which divergent external factors that emphasize distinct moral values exert opposing forces on media creators' production and audiences' selection of content, ultimately maintaining the balance of audiences' existing moral salience. Alternatively, a closed system's production of only value-consistent messages can insulate audiences from value-inconsistent messages. This "can create a positive feedback loop that leads to more extreme or polarized values" in audiences (Tamborini, 2013, p. 63).

According to the PPMM (Feinberg et al., 2019), repeated exposure to media associating a group's cause(s) with a particular moral value would be expected to *moralize* the group's purpose in audiences' minds (i.e., **infuse the group's cause[s] as inherently charged with domain-specific principles of right versus wrong**). Synthesizing the MIME and the PPMM, we might expect that violent extremists' comparatively closed media system would rarely exemplify competing morally laden (or non-moral) messages, and thus the reciprocal influence of audiences' media selection and moral salience should shift their moral emotions and values to extreme positions (e.g., desiring to uphold loyalty no matter the cost; Feinberg et al., 2019).

Tamborini (2013) and Slater (2007) offer examples of the mutually reinforcing media production processes in closed media systems by citing research on American Protestant fundamentalism and fundamentalist Islamist groups highlighting that these groups rely on their own interpersonal and media outlets (e.g., websites) to produce messages compatible with their group's values. The groups' members and like-minded non-members are thought to selectively expose themselves only to value-consistent messaging from the group (and similar sources), which leads the groups to produce more of the same value-consistent content, prompting more exposure to the value for audiences, and so on (Ammerman, 1991; Armstrong, 2000). The terrorist groups whose propaganda we investigate here similarly rely on their own media outlets (e.g., websites and written publications such as Al Qaeda in the Arabian Peninsula's *Inspire* magazine) to communicate their cause, audiences selectively expose themselves to value-consistent messaging from the group (and similar sources; Slater, 2007), this repeated selection is thought to prompt the group to produce more similar value-laden content, and so on. Thus, per MIME and reinforcing spirals logic, it is reasonable to classify the groups we investigate here as comparatively closed media systems and expect each group would produce morally laden messages that are compatible with their group's values. We investigate these media production predictions in the present study.

Per the MIME, reinforcing spirals, and the PPMM, the extent to which terrorist groups' media is laden with one (or one set of) moral value(s) may be indicative of their comparatively closed media system and, as a result, should explain the process through which their group members came to experience the extreme motivational imbalance in which *care for victims* is subordinate to other extremely salient moral values used to justify atrocities (Kruglanski et al., 2021; also see Tamborini's [2013] discussion of dominant and overriding salience). For example, Tamborini (2013, p. 63) suggests that new members of an extremist white supremacist group might "immerse themselves in the literature of the group and conversations with other group members, which is likely to limit their

exposure to inconsistent messages." Repeated exposure to only value-consistent content is expected to reinforce individuals' identification with the group, strengthen their moral conviction in the cause, and increase their desire to interact with, or act on behalf of, those who share group values (Feinberg et al., 2019; Skitka & Morgan, 2014; Tamborini, 2013).

Given its explication of the processes by which (a) media producers may operate a system in which their content emphasizes only one (or one set of) moral value(s) and (b) individuals can become immersed in these environments, prompting polarization and resistance to divergent beliefs, the MIME provides a useful framework for understanding the process by which terrorists persuade otherwise nonviolent citizens to join their violent causes. We adopt the MIME to investigate (1) the specific moral appeals that terrorists exploit in their propaganda, (2) how certain characteristics of groups can predict their propaganda's focus on different moral values, and (3) whether propaganda's emphasis on certain moral appeals may correlate with distal violent behavioral effects. Before describing the present study, we elaborate on the MIME's logic and the theoretical contribution of the present study in each of these three areas.

The current study

First, guided by the MIME's scheme of moral values, the present study investigates the extent to which terrorist organizations include appeals to specific moral values in their propaganda. Given previous work's suggestion that perceptions of moral righteousness are a key factor contributing to individuals' decisions to engage in political violence, we might expect that appeals to audiences' moral values would feature prominently in propaganda as a way for the group to further justify their atrocities and grow their following (Fiske & Rai, 2015; Skitka & Morgan, 2014). To the extent that propaganda emphasizes moral appeals, our examination of the media produced within a comparatively closed media system can shed light on media's ability to reinforce the motivational imbalances exhibited by violent extremists. With this in mind, the present study extends research on both the MIME and terrorism studies (Kruglanski et al., 2021) by not only characterizing terrorists as their own self-organized morality subcultures, but also attempting to provide evidence for the specific moral values around which they tend to organize their persuasive efforts. This leads to our first research question:

RQ1: Which moral values appear most often in terrorist propaganda?

Beyond offering a framework for investigating the moral appeals imbued in terrorist propaganda, the MIME also identifies two key characteristics of media creators that should predict what types of moral values they focus on in the content they produce. First, the MIME suggests that content creators should imbue their propaganda with the moral appeals most salient to and highly praised by their audiences. In non-extremist partisans, Graham et al. (2009) demonstrated that care and fairness were enduringly more salient in liberals, whereas all five foundations were relatively equally salient in conservatives. Considering that terrorists likely craft propaganda with the intention of persuading audiences holding similar beliefs to act violently on behalf of their shared ideological positions, we might expect that

propaganda creators would attempt to appeal to the values preferred by non-extremist members of the same ideology.

Similar to non-extremists, previous work has indicated that extremists may persuade others to join and act with the group when they frame their motives as if they are upholding a highly salient moral value (Bandura, 1990, 1999, 2004, 2016; Frazer, 2023; Hahn et al., 2019; Kruglanski et al., 2019; Rigoli, 2023; Workman et al., 2020). For instance, recent work has demonstrated that terrorists' moral motivations for violence largely align with those of non-extremist members of their general ideological affiliation. Hahn et al.'s (2019) findings revealed that extremist right-wing perpetrators were motivated by binding values (specifically purity) and extremist left-wing perpetrators were motivated by individualizing values (specifically fairness), again pointing to shared patterns of moral salience within groups of each ideology. This study also revealed that binding values were most likely to drive groups with religious goals (specifically purity) and ethno-nationalist/separatist groups (specifically loyalty). Finally, groups who were identified as being driven by a single issue, such as environment or anti-abortion concerns, were driven most often by individualizing values (specifically care toward an entity other than the victim[s]; e.g., care toward unborn fetuses at the expense of harming abortion doctors). To the extent that groups have received positive feedback from audiences regarding their positions, for instance via an increase in new membership or attention from mainstream media, we might expect groups that subscribe to these ideological positions would emphasize their accordant values in their propaganda.

Based on MIME logic and the findings above suggesting that ideology can predict shared patterns of moral salience in ideological non-extremists and extremists alike, we expect that ideological groups would craft propaganda that appeals to the moral values of like-minded others in an attempt to exploit their moral values and recruit people who already agree with the basic premise of their ideological position. This narrowcasting, wherein terrorists attempt to target and ultimately recruit audiences in whom concordant moral values are already salient, may be a tactic to decrease the psychological reactance non-extremists experience when exposed to a message from a terrorist group (Kruglanski et al., 2019; Skitka & Morgan, 2014). In doing so, terrorists may effectively use their media content to build ideological cohesion among followers and potential followers alike, further reinforce the existing moral convictions of their audiences, and ultimately sustain the closed media system that has perpetuated their group's motivational imbalance. In the present study, we attempt a conceptual replication of Hahn et al.'s findings that terrorist groups' ideologies are associated with their moral motivations for violence. Specifically, we examine the extent to which terrorists' ideologies are associated with the types of moral appeals groups emphasize in their public-facing propaganda. Taken together, the present study provides a novel contribution to the MIME and research in terrorism studies by shedding light on the extent to which violent extremists may reinforce their ideologies through media production. We expect:

H1: Groups with ideologies that are (a) extremist right-wing, (b) religious, and (c) ethno-nationalist/separatist will emphasize binding moral values most often in their propaganda.

H2: Groups with ideologies that are (a) extremist left-wing and (b) focused on a single issue will emphasize individualizing moral values most often in their propaganda.

A second factor the MIME introduces that should predict what moral values terrorists emphasize in their propaganda concerns the moral values most salient to media creators. The MIME specifies that aggregate patterns of moral salience in a morality subculture should lead to shared patterns of moral judgments and behaviors. Implicit in the MIME's contention is that the values most salient to a morality subculture should be expected to be emphasized in media content produced by members of that subculture. However, this prediction lacks empirical support. With this in mind, we extend the MIME's logic to specify *media creators' moral salience* as a particularly important factor determining what moral values they might emphasize in their media. Relatedly, in foundational work testing MFT, Graham et al. (2009) demonstrated that people's salient moral values were manifest in their communication patterns. In their study, sermons delivered by liberal versus conservative churches exhibited predictable patterns in the extent to which they referenced words associated with individualizing versus binding moral values. Extending work by Hahn et al. (2019), who identified the salient values of terrorist organizations, we investigate whether the moral value most salient to terrorist groups (i.e., the value driving their actions, as identified by Hahn et al., [2019]) may be manifest in their propaganda. To the extent this is true, it would advance understandings of the media production processes described by the MIME, and may provide critical insight for deradicalization efforts hoping to develop targeted counter-messages that appeal to individuals' preexisting attitudes. Thus, we hypothesize:

H3: The moral values emphasized in propaganda items will be associated with the moral motivation of the terrorist group who created it.

Finally, in addition to specifying terrorists' behaviors as morally motivated subcultures and investigating factors that govern terrorists' media production decisions, the present study advances understandings of the MIME's processes by exploring the behavioral correlates of audiences' exposure to terrorist propaganda. Previous MIME work has demonstrated predictable patterns of audience behaviors immediately (or shortly after) following controlled experimental inductions (see Eden et al. [2021] for review), and the present study adds to this body of knowledge by examining content's association with more distal behavioral outcomes outside the lab.

In line with the MIME's suggestion that moral salience should prompt morally relevant behaviors, logic from the PPMM (Feinberg et al., 2019) might suggest that morally laden propaganda could amplify audiences' moral emotions surrounding the group's goals, making those who agree with the group's message more convinced of the group's cause (Skitka & Morgan, 2014; Tamborini, 2013). Notably, previous work suggesting that binding moral values in particular can act as a key mechanism by which regular citizens justify violence toward outgroups (Hoover et al., 2021) leads us to consider that propaganda appealing to binding moral values may be more successful at instigating violence. That said, appeals to individualizing values may be powerful motivators

that groups use to justify violence toward entities they believe have perpetrated injustices or harm.

Importantly, myriad factors beyond the present study's scope contribute to the incidents and casualties for which terrorist groups are responsible. As a foundation for more complete understandings of the role that propaganda's moral appeals may play in actors' decisions to behave violently, we offer an initial correlational investigation into the relationship between propaganda's moral appeals and groups' attack severity (i.e., the number of violent incidents and casualties). As the population of terrorist groups from which we draw propaganda is composed of all attackers who have committed violence in the USA, we also test whether propaganda's moral appeals correlate with casualties specific to the USA (versus worldwide):

RQ2: Does the emphasis on specific moral values in groups' propaganda correlate with the number of (a) violent incidents they commit or (b) the number of casualties for which they are responsible worldwide or (c) in the USA?

Method

We collected data in four phases where we (1) adopted a population of terrorist groups from the Profiles of Perpetrators of Terrorism in the United States (PPT-US) database (Miller & Smarick, 2012), (2) gathered propaganda created by those groups, (3) applied a MIME/MFT-based coding scheme to that propaganda, and (4) compiled secondary data measures from various sources. Each phase is discussed below.

Data availability statement

Upon request to the corresponding author, the current study's data and entire database of propaganda are available to researchers interested in advancing knowledge in this area. Following the guidelines of the Framework for Research Ethics in Terrorism Studies (FRETS; Morrison et al., 2021), we refrain from posting the data and database to a public repository to ensure (a) only designated researchers have access to the propaganda, which is deemed "security-sensitive" and (b) the current authors and future researchers avoid legal penalties for possessing or disseminating terrorist materials. The information provided in this database is made available for academic research purposes only. It is not intended to advocate or promote any particular behavior whatsoever. In line with FRETS, access to the database will be determined based on legitimate interest in conducting research on terrorist propaganda.

Population of terrorist groups

In line with Hahn et al. (2019), we adopted a population of terrorist groups from the Profiles of Perpetrators of Terrorism in the United States (PPT-US) database. The PPT-US is an open-source database reporting details on every terrorist group ($N=143$) that has committed at least one attack in the USA between 1970 and 2018. The PPT-US defines terrorism as "the threatened or actual use of illegal force and violence by a non-state actor to attain a political, economic, religious, or social goal through fear, coercion, or intimidation" (START, 2019, p. 11).

Search strategy for terrorist propaganda

We attempted to compile a database of propaganda from each of the $N=143$ terrorist groups described in the PPT-US. We adopt NATO's definition of propaganda: "Information, especially of a biased or misleading nature, used to promote a political cause or point of view" (North Atlantic Treaty Organization, 2013, p. 2-P-9). In line with this definition, we conducted a five-stage search and saved all content that was created by the collective group, or a member communicating on behalf of the group, and used to promote the group's cause or point of view.

In the first search stage, we searched for propaganda using the sources PPT-US researchers used to build their database. When the source was a website hosted by the terrorist group, we used the Internet Archive's Way Back Machine to scrape the group's website pages as they appeared on a date as close as possible to the group's last attack. We relied on the PPT-US and the GTD for attack dates. In most cases, the Way Back Machine had captured the websites on dates within a year of each group's last attack. Second, we examined the websites of several university libraries with publicly available propaganda collections, including Michigan State University, Temple University, and the University of Georgia. In this stage, we examined each collection as a whole and saved any content created by the terrorist groups in our population. In the third stage, we examined Studies in Radicalism Online (SIRO), a publicly available database that compiles terrorist group propaganda, as well as academic articles and other information on radicalism. In this stage, we searched the names and aliases of each group (as identified by PPT-US) using SIRO's search function.

In the fourth stage, we examined the references of each terrorist group's Wikipedia page for any propaganda. In some cases, the propaganda collected at this stage featured a quote from a member or the collective group in a newspaper or academic article. Although we saved the entire article, coders were instructed to focus only on the direct quote as the coding unit (i.e., to only code content created by the terrorist group, rather than secondary sources' comments about the quote). In the fifth and final search stage, we searched for additional propaganda using Google and DuckDuckGo. Searches were conducted using the Tor browser to protect researchers' privacy. To be as comprehensive as possible, we used four search strings: "[Group Name]," "[Group Name] [Year of each attack]," "[Group Name] propaganda," and "[Group Name] terror." We repeated each search with the groups' aliases, if any (as identified by the PPT-US database). We examined each website returned in the first three pages of the main results, and first three pages of the image results (e.g., Google Images) for each search phrase, and if it (a) contained any content created by the collective group, or a member communicating on behalf of the group, and (b) was used to promote the group's cause or point of view, we saved it for inspection in the present study.

Each of the five search stages was conducted by three separate researchers for each terror group in the population. When a propaganda unit was identified in any of the above stages, it was logged with a description and link to the item, the accordant terrorist group's name, and an identification number composed of a group number and an item identifier (e.g., Aryan Nation was logged as group 039, so their first item was logged as 039_01). A PDF or screenshot of the item

was then saved to a shared folder under its identification number. This process was employed so that coders extracting moral appeals would be as blind as possible to terrorist group who created each propaganda unit.

In total, this five-stage search process returned $N = 873$ propaganda units from $n = 73$ terrorist groups. We refer to this collection as the PTO-US database. This database is composed of multi-page newsletters describing the group's activities or discussing issues relevant to the group's cause ($n = 447$), press-releases sent to news organizations or left at attack scenes ($n = 255$), webpages ($n = 70$), single-page flyers or bulletins describing events or issues relevant to the group ($n = 42$), books/manifestos describing the group's activities or beliefs ($n = 22$), images of membership indicators such as buttons, coins, tattoos, and sew-on patches ($n = 9$), rally signs ($n = 8$), media interviews with leaders or members ($n = 7$), and quotes from leaders or members that appear in media other than the categories listed above ($n = 13$). Propaganda spanned the years of 1920–2018 ($M = 1984$, $SD = 18.24$; $Med = 1975$; $n_{\text{year of creation unknown}} = 32$). In the next data collection step, we extracted the moral value appeals, if any, used in each of the propaganda units.

Coding propaganda for moral appeals

Due to the fact that the items in our sample consisted of a mix of text and images (some with structured data and many that were unstructured), as well as several videos/sound clips, we employed human coders to extract the moral values imbued in each propaganda item rather than a text-annotation (Weber et al., 2018) or automated coding procedure (Hopp et al., 2021).

Coding protocol

The coding scheme used was adopted from Hahn et al. (2019). It was used previously to extract the moral values of narrative characters in a variety of media, including television (Hahn, 2022), books (Tamborini et al., 2021), newspapers (Bowman et al., 2014), and religious sermons (Klebig et al., 2021). In the present study, coders were instructed to examine each unit of propaganda twice and extract any moral value it appealed to. Coders were able to code for as many moral values as were present, so long as each moral appeal was equally as strong (e.g., if purity was not as strongly appealed to as care, coders only coded for care).

Care was coded if a propaganda unit emphasized the importance of compassion for vulnerable entities or the need to save those entities from some harm. For example, the terrorist organization Earth First designed a website advocating for the protection of innocent wildlife from habitat displacement by loggers. Fairness was coded if a unit emphasized appeals to justice, equality, or equity. For example, newsletters from The Black Panthers emphasized the need for action to restore justice for Black and oppressed people. Ingroup loyalty was coded if a unit appealed to ingroup solidarity or if outgroup disdain was prominent. For example, flyers from the Ku Klux Klan emphasized solidarity with one's racial group. Authority was coded if propaganda emphasized restoring a perceived rightful government, ruler, or tradition. For example, graffiti from the Irish Republican Army emphasized that Ireland should be free from British rule. Finally, purity was coded if propaganda emphasized appeals to nobility, sacredness, or the avoidance of social contamination. For example,

Al-Qaeda in the Arabian Peninsula's Inspire magazine featured appeals to piety, holiness, and spirituality.

Coding procedure

Three undergraduate students were trained as independent coders over a five-week period to recognize the moral value appeals in a variety of media content. Following this, an additional two-week training period ensued where coders learned to apply the coding scheme to $n = 30$ randomly selected practice units from this study's propaganda sample. After coders agreed on the application of the coding scheme to the propaganda content used in the present study, intercoder agreement was assessed using $n = 232$ randomly selected units (26.58% of the study's sample) that were coded by all three coders. Because there was a potential for all five moral values to be present in any one unit, coders dummy-coded the moral value appeals they identified in each propaganda item. More specifically, we supplied coders with a coding sheet containing six columns: one for the item ID and one column for each of the five moral values. Coders were instructed to code a "1" in the column of the moral value(s) that were present and a "99" in all other columns. This procedure allowed coders to indicate multiple moral appeals as present in one propaganda unit. We then assessed intercoder agreement on each moral value (i.e., agreement among the three coders for the care column, the fairness column, and so on). Brennan and Prediger's (1981) Kappa was adopted as a measure of intercoder agreement, with the threshold for acceptable agreement set at 0.70. All five values reached the threshold: $\kappa_{\text{Care}} = 0.97$, $\kappa_{\text{Fairness}} = 0.76$, $\kappa_{\text{Loyalty}} = 0.89$, $\kappa_{\text{Authority}} = 0.70$, and $\kappa_{\text{Purity}} = 0.91$. The remaining $n = 611$ units were divided and each was coded by one of the three coders. Overall, of the $N = 873$ units of propaganda gathered from $N = 73$ terrorist groups, $n = 837$ (95.88%) emphasized at least one moral value. Only one item was coded as emphasizing two moral values.

To ensure the continued well-being of coders throughout the coding process, we employed several strategies in line with recommendations from Dart Center for Journalism and Trauma (Rees, 2017). In particular, we instructed coders to take frequent breaks, only engage in coding sessions that were fewer than 2 hours in duration, interact with positive distractors (e.g., by reading news stories from The Good News Network), and stay in close contact with the researchers. Notably, the vast majority of content in this sample was created to persuade people outside the terrorist organization to join the terrorists' cause. Thus, although some content units in our sample were designed to be more upsetting than others (e.g., anti-abortion content from Army of God shows graphic images of aborted fetuses), the vast majority of content units frequently relied on persuasive euphemistic language to describe the groups' reprehensible behaviors, if these behaviors were acknowledged at all.

Secondary measures compiled for the present study

To answer the study's research questions, we required measures of (a) moral value appeals in propaganda created by terrorist groups, (b) terrorist group ideologies (H1, H2), (c) the moral motivations of those terrorist groups (H3), and (d) the violent incidents, worldwide casualties, and USA casualties caused by each terrorist group (RQ2). The measure of moral value appeals in terrorist propaganda was accomplished using

the coding procedure described above. The remaining three measures are described in detail below.

Terrorist ideologies

To test H1 and H2, we collected each terrorist group's dominant ideology from the PPT-US database. According to Miller and Smarick (2012, p. 21; the database creators), groups were categorized as extremist right-wing if they "believe[d] that one's personal or national 'way of life' was under attack and is either already lost or the threat is imminent." Of the $n=73$ groups in our sample with propaganda, $n=10$ were categorized by the PPT-US as extremist right wing (e.g., Minutemen American Defense). Our sample contained $n=19$ extremist left-wing groups, who are defined by their desire "to bring about change through established political processes" (e.g., The Black Panthers). Next, our sample contained $n=5$ religious groups that sought "to smite the enemies of God and other evildoers [and] impose strict religious tenets or laws on society" (e.g., Al-Qaeda). A total of $n=23$ ethno-nationalist/separatist groups were in our sample, described by their commitment "to gaining or regaining political independence through any means and who have supported political movements for autonomy" (e.g., Irish Republican Army). Finally, $n=16$ single-issue terrorist groups were in our sample, characterized by their "very specific or narrowly-defined causes [on] all sides of the political spectrum" (e.g., Earth Liberation Front).

Moral motivations of terrorist groups

To test H3, we obtained Hahn et al.'s (2019) publicly available coded data on groups' moral motivations. Hahn et al. applied the same MFT-coding scheme used in the present study to the PPT-US qualitative variables describing each group's history of activities and founding philosophy. According to their data, $n=13$ groups in our sample were care-motivated, $n=29$ were fairness-motivated, $n=48$ were ingroup loyalty-motivated, $n=6$ were authority-motivated, and $n=9$ were purity-motivated. These numbers do not sum to the total number of groups in our sample because many groups were coded as having multiple moral motivations.

Injuries and fatalities caused by terrorist groups

To answer RQ2, we collected the total number of violent incidents, worldwide casualties, and USA casualties for which each group was recorded as responsible in the GTD (using the definition of terrorism described above). The number of violent incidents attributed to the groups in our sample was $Mdn=5.0$ attacks ($M=67.70$, $SD=330.05$, range = 1–2669 attacks). Casualties were defined as the sum of injuries and fatalities reported by the GTD, and represented confirmed deaths and non-fatal injuries to perpetrators and victims as a direct result of the incident (START, 2019). Worldwide, the number of casualties was $Mdn=1$ casualty ($M=529.37$, $SD=2939.17$, range = 0–23,887). The number of USA casualties was $Mdn=0$ casualties ($M=57.27$, $SD=360.31$, range = 0–2994). According to the PPT-US data on each group's origin, $n=42$ groups originated in the USA, $n=5$ groups originated from multiple nations, $n=1$ group each originated from Yemen, Lebanon, Great Britain, Iraq, and Haiti, and $n=21$ groups' location origins are unknown (Miller & Smarick, 2012).

Preprocessing for moral appeals in propaganda

Finally, to examine whether the moral values in propaganda corresponded with the group's motivations in H3, and the group's number of incidents and casualties in RQ2, we transformed our moral value variables from the *item-level* (i.e., representing each *propaganda item's* emphasis on a value) to the *group-level* (i.e., representing each *group's* emphasis on moral values across *all* their propaganda). To do this, we used our moral value variables to calculate five group-level variables (termed *propaganda proportion*) representing the proportion of propaganda items that emphasized care, fairness, ingroup loyalty, authority, and purity for each group ($\frac{N_{moral}}{N_{total}}$). For instance, our sample contained $n=33$ total items from the Ku Klux Klan. To calculate their *loyalty propaganda proportion*, we summed the number of items coded as emphasizing loyalty ($n=31$) and divided this sum by the total number of items they created ($n=33$), which resulted in a loyalty propaganda proportion of 0.94 ($31/33 = 0.94$). This variable ensured that the number of propaganda items from each group in our sample would not bias our analyses. The Black Panthers created the most propaganda in our sample ($n=396$), followed by the Minuteman American Defense ($n=122$), American Indian Movement ($n=75$), and Ku Klux Klan ($n=33$). All remaining groups created fewer than $n=20$ propaganda items.

Results

To answer RQ1, asking which moral values appeared most often in terrorist propaganda, we conducted two one-way chi-square tests: one investigating the frequency of the higher-order categories of individualizing versus binding values, $\chi^2(1, N=838) = 105.97, p < .001$, and one investigating the frequency of each of the five specific moral values, $\chi^2(4, N=838) = 1030.34, p < .001$. Results suggested a preponderance of individualizing values (standardized residual = 7.28), specifically fairness (standardized residual = 26.91). Ingroup loyalty was also proportionally overrepresented (standardized residual = 2.66). Inspection of the propaganda responsible for the overwhelming emphasis on fairness revealed that it was largely driven by the number of propaganda items from the Black Panthers, who created $n=391$ of the $N=516$ items emphasizing fairness. To examine whether the overrepresentation of fairness existed outside of the Black Panthers, we re-ran the analyses without the Black Panthers' propaganda. In the re-run, we found an overrepresentation of binding values (standardized residual = 3.09), $\chi^2(1, N=444) = 19.06, p < .001$. Examination of each of the five specific values revealed that ingroup loyalty (standardized residual = 11.80) was emphasized most often, and fairness remained proportionally overrepresented, although to a lesser degree than in the analyses containing Black Panthers' propaganda (standardized residual = 3.84), $\chi^2(4, N=444) = 249.65, p < .001$.

To test H1 and H2, which predicted that propaganda from extremist right-wing, religious, and ethno-nationalist/separatist groups would emphasize binding moral values (H1), and propaganda from extremist left-wing and single-issue groups would emphasize individualizing moral values (H2), we first conducted a 5 (ideology) \times 2 (value type: individualizing, binding) chi-square test. As expected, we found right-wing (adjusted standardized residual = 22.1) and religious groups (adj. stdized res. = 4.6) were more likely to appeal to binding values, whereas left-wing (adj. stdized res. = 18.7) and single-issue groups (adj. stdized res. = 3.1) were more likely to appeal to individualizing

Table 1. Frequency of moral values by group type

Moral value	Total items (<i>N</i> = 873)	Extremist right wing (<i>n</i> = 189)	Religious (<i>n</i> = 21)	Separatist (<i>n</i> = 165)	Extremist left wing (<i>n</i> = 460)	Single issue (<i>n</i> = 61)
Care	52 (5.50%)	1 (.50%)	1 (4.80%)	0 (0%)	2 (.40%)	48 (56.50%)
Fairness	516 (54.70%)	1 (.50%)	1 (4.80%)	79 (47.90%)	433 (91.70%)	2 (2.40%)
Loyalty	202 (21.40%)	178 (91.30%)	3 (14.30%)	14 (8.50%)	5 (1.10%)	2 (2.40%)
Authority	57 (6.00%)	5 (2.60%)	2 (9.50%)	29 (17.60%)	16 (3.40%)	5 (5.90%)
Purity	11 (1.20%)	1 (.50%)	8 (38.10%)	1 (.60%)	0 (0%)	1 (1.20%)

Note: Percent of total items in each column are in parentheses. Frequencies that are proportionally overrepresented within each column appear in bold.

values, $\chi^2(4, N = 838) = 568.29, p < .001$, Cramer's $V = 0.82$. Propaganda from ethno-nationalist/separatist groups was no more likely to emphasize individualizing or binding values. Frequencies by group type are displayed in Table 1.

Next, we examined whether specific ideologies were associated with appeals to each of the five specific moral values in terrorists' propaganda using a 5 (ideology) \times 5 (specific value type: care, fairness, loyalty, authority, purity) chi-square test, $\chi^2(16, N = 838) = 1718.52, p < .001$, Cramer's $V = 0.72$. Results suggested that the propaganda of extremist right-wing groups was most likely to emphasize ingroup loyalty (adj. stdized res. = 25.9), religious groups' propaganda was most likely to emphasize purity (adj. stdized res. = 17.9), and separatist groups' propaganda was most likely to emphasize authority (adj. stdized res. = 8.0). Extremist left-wing groups were most likely to emphasize fairness in their propaganda (adj. stdized res. = 21.7) and single-issue groups emphasized care (adj. stdized res. = 25.0). Taken together, H1 and H2 were mostly supported. In general, these findings conceptually replicate work by Hahn et al. (2019).

Extending Hahn et al.'s (2019) work identifying the moral motivations of terrorist groups, H3 suggested that terrorist groups' moral motivations (as identified by Hahn and colleagues) would predict groups' emphasis on specific moral values in their propaganda. Because the propaganda proportion variables each exhibited a bimodal distribution, we used non-parametric tests to test H3 and answer RQ2. To test H3, we first conducted two Mann-Whitney U tests to examine whether groups motivated by individualizing or binding values (the independent variable) were more likely to emphasize individualizing or binding moral values in their propaganda (using the propaganda proportion variables as dependent variables). Because H3 suggested a clear directional prediction that propaganda's emphasis on certain moral values would be greater in groups who are motivated by those moral values than groups who are motivated by other moral values, we report one-tailed p values (Levine & Banas, 2002). Results of the first test showed that individualizing-motivated terrorist groups appealed more to individualizing moral values in their propaganda ($M = 0.61, SD = 0.43, Mdn = 0.75$) than binding-motivated terrorists ($M = 0.23, SD = 0.34, Mdn = 0.00$), $U = 511.50, z = -4.14, p_{\text{one-tailed}} < .001, r = -0.44$. Results of the second test revealed that binding-motivated terrorist groups appealed more to binding moral values in their propaganda ($M = 0.63, SD = 0.41, Mdn = 0.75$) than individualizing-motivated terrorists ($M = 0.37, SD = 0.42, Mdn = 0.19$), $U = 638.00, z = -2.83, p_{\text{one-tailed}} = .003, r = -0.30$.

Next, we conducted a series of Mann-Whitney U -tests with each of the five specific propaganda proportion variables as dependent variables, and the group's specific moral

motivations dummy-coded as the independent variable. We found that the proportion of propaganda items emphasizing care was higher for groups identified as being motivated by care ($M = 0.62, SD = 0.50, Mdn = 1.00$) compared with those who were not motivated by care ($M = 0.04, SD = 0.17, Mdn = 0.00$), $U = 219.00, z = -5.28, p_{\text{one-tailed}} < .001, r = -0.452$. The proportion of propaganda appealing to fairness was higher for groups motivated by fairness ($M = 0.45, SD = 0.43, Mdn = 0.50$) compared with those who were not ($M = 0.18, SD = 0.32, Mdn = 0.00$), $U = 690.00, z = -3.31, p_{\text{one-tailed}} < .001, r = -0.32$. Results exhibited a similar pattern for ingroup loyalty, where the proportion of propaganda emphasizing loyalty was higher for groups motivated by loyalty ($M = 0.27, SD = 0.39, Mdn = 0.00$) compared with those who were not ($M = 0.15, SD = 0.33, Mdn = 0.00$), $U = 1130.50, z = -1.84, p_{\text{one-tailed}} = 0.03, r = -0.18$. Finally, the proportion of propaganda emphasizing purity was higher for groups motivated by purity ($M = 0.20, SD = 0.36, Mdn = 0.03$) compared with those not ($M = 0.03, SD = 0.16, Mdn = 0.00$), $U = 221.00, z = -4.54, p_{\text{one-tailed}} < .001, r = -0.44$. Results for authority did not reach the threshold for statistical significance ($p_{\text{one-tailed}} = .15, r = -0.10$). H3 was mostly supported.

Finally, to answer RQ2, we correlated each propaganda proportion variable with the number of groups' violent incidents and casualties both worldwide and in the USA. Due to the propaganda proportion variables' bimodal distribution, we report Spearman's rho. Correlations among all variables appear in Table 2. Results revealed that propaganda's emphasis on purity was significantly correlated with the number of violent incidents, $r = 0.35, p = .003$; casualties worldwide, $r = 0.40, p < .001$; and casualties in the USA, $r = 0.41, p < .001$. Propaganda's emphasis on ingroup loyalty was significantly correlated with USA casualties, $r = 0.32, p = .005$.

Discussion

Applying the MIME to a novel media context, the present study investigated (a) the specific moral appeals that terrorists exploit in their propaganda, (b) how certain characteristics of terrorist groups predict their propaganda's focus on different moral values, and (c) the extent to which exposure to certain moral appeals in propaganda may be correlated with the severity of terrorist groups' attacks. A secondary goal was to develop an expansive database of terrorist propaganda, the PTO-US, available to scholars for use in their own research. Overall, findings revealed a preponderance of loyalty and fairness appeals in terrorist propaganda, and that terrorist groups' ideologies and moral motivations predicted the moral values they appeal to in their propaganda. Additionally, terrorist groups' emphasis on purity in their propaganda was

Table 2. Correlations among proportion of propaganda featuring moral values and incident characteristics

Variable	1	2	3	4	5	6	7	8	9
1. Individualizing values	–								
2. Binding values	–0.81**	–							
3. Care	0.53**	–0.46**	–						
4. Fairness	0.65**	–0.47**	–0.23	–					
5. Loyalty	–0.34**	0.40**	–0.18	–0.17	–				
6. Authority	–0.47**	0.63**	–0.36**	–0.18	–0.31**	–			
7. Purity	–0.10	0.11	–0.00	–0.12	0.17	–0.20	–		
8. Number of attacks	0.09	–0.13	0.08	0.11	–0.15	–0.05	0.35**	–	
9. Worldwide casualties	–0.03	–0.04	–0.04	0.12	0.21	–0.18	0.40**	0.66**	–
10. USA casualties	–0.02	0.10	0.05	0.06	0.32**	–0.11	0.41**	0.46**	0.76**

* $p < .05$; ** $p < .01$.

positively correlated with their attack frequency and with the number of human casualties they caused worldwide and in the USA. Terrorists' emphasis on ingroup loyalty in propaganda was also positively correlated with the number of US human casualties they caused. Below, we consider the implications and limitations of this study.

Theoretical implications

At least three critical theoretical contributions are offered by the present study. First, our results demonstrating predictable patterns of moral appeals in propaganda according to both the terrorist creator's ideology and moral motivation support the idea that violent extremist groups can be thought of as their own morality subcultures. Although violent actors are often thought to be void of a moral compass, the present findings challenge this commonly held belief by identifying the specific moral values around which different terrorists groups tend to organize themselves and their media production. This work provides a conceptual replication (H1 and H2) and extension (H3) of work by [Hahn and colleagues \(2019\)](#). In a novel media context, the present results support the MIME's logic that media circulated and produced within a morality subculture's closed media system are laden with moral values that reflect its members' values. In addition to advancing understandings of the media production processes described by the MIME, these results add to a growing body of evidence supporting the MIME's morality subculture logic across several media contexts, including television produced for different cultures ([Prabhu et al., 2020](#); also see [Tamborini et al., 2012](#)), news produced for audiences of different political bent ([Bowman et al., 2014](#)), and audiences of different ages ([Tamborini et al., 2017](#)).

Second, our work provides a foundation for novel, socially exigent, and replicable research into the content and consequences of extremist communication. This foundation offers both theoretical and practical implications (practical implications are described in the next section). Theoretically, the MIME offers a testable, falsifiable model for examining both the proximate and ultimate causes of terrorism, including aggregate patterns in the values emphasized in extremists' media environments, where they come from, and how repeated exposure to these values may elicit attitudinal or behavioral effects. To our knowledge, the present study is the first to examine terrorists' media production alongside its antecedents and effects. With this in mind, the present work offers a valuable approach for examining the content of an otherwise difficult-to-study form of communication by highlighting the MIME's ability to predict, explain, and control patterns in

extremist communication according to a theoretical scheme of moral values and based on specific characteristics of terrorist groups. By highlighting the role of terrorists' media production in a comparatively closed media system, the present work sheds light on the process by which terrorist groups may use media to build ideological cohesion, reinforce existing moral convictions of their audiences, and ultimately sustain the closed media system that has perpetuated their group's motivational imbalance ([Kruglanski et al., 2021](#); [Rieger et al., 2020](#); [Skitka & Morgan, 2014](#)).

To further advance understandings in this area, future researchers could adopt alternative frameworks of morality to provide further understandings of the appeals imbued in terrorist propaganda, as well as the extent to which these appeals may instigate coordinated violence. For instance, scholars could investigate whether propaganda emphasizes specific types of cooperation outlined by the morality as cooperation framework ([Curry, 2016](#)), and whether collective group violence is more likely to be spurred in response to specific cooperation appeals (e.g., group cooperation, heroism, etc.). Demonstrating support for the MIME's causal processes with a different scheme of values would strengthen confidence in the MIME's explanatory value.

Third, our findings extend MIME work to demonstrate patterns in the extent to which different moral appeals may be correlated with real-world behaviors. Although some previous work has focused on the extent to which exposure to value-laden media can influence immediate moral judgments or prosocial donation behaviors ([Hahn et al., 2022b](#); [Tamborini et al., 2017](#)), the current study extends these findings to suggest that consumption of value-laden media is correlated with more distal behaviors, particularly violence. That propaganda's appeals to purity were correlated with more casualties in the USA and more violent attacks and casualties worldwide may suggest that purity-based subcultures exhibit particularly strong conviction to their causes. Given the potential for confounding variables in these relationships, it is beyond the scope of the present data to make causal claims about the nature of terrorist propaganda's influence on audiences. Still, these findings suggest that investigating the media and interpersonal communication systems of purity-based subcultures may be a fruitful avenue for future research, as they provide socially exigent correlational evidence in line with a growing body of work highlighting group-based moral values' association with dangerous outcomes ([Hoover et al., 2021](#); [Kennedy et al., 2023](#); [Skitka & Morgan, 2014](#); [Workman et al., 2020](#)). Future work should examine this claim more closely by (a) attempting to account for

confounding variables in the relationship between morally laden propaganda and violent outcomes and (b) adopting the MIME as a guiding theoretical framework for experiments examining the effects of exposure to terrorist propaganda.

Theoretically-informed practical implications

Finally, beyond offering a robust framework for examining extremist media content alongside its antecedents and consequences, MIME logic also offers insight into how stakeholders could intervene in terrorists' persuasive attempts. Understanding the moral appeals in terrorists' public-facing persuasive messages according to a stable framework of values could provide a foundation for standardized, theoretically informed counter-messages designed to assist intelligence agencies deradicalize those at risk of committing violence. For example, if a group's propaganda about immigration appeals to audiences' loyalty sensitivity, MIME logic would suggest that well-designed counter-messages should focus on decreasing the salience of the superordinate loyalty value in audiences, increasing the salience of the care value or attempt to de-moralize the audiences' goals altogether.

In line with the PPMM (Feinberg et al., 2019), intervention strategies focused on de-moralization may offer the greatest chance at deradicalizing audiences who have been exposed to moral propaganda. Compared with non-moral messages, previous work suggests that exposure to persuasive moral messages about an issue can decrease audiences' willingness to compromise on that issue (Kodapanakkal et al., 2022). Given the present findings that terrorist groups use propaganda to moralize the groups' goals in audiences' minds, we might expect that morally-laden propaganda amplifies audiences' moral conviction in the group's cause, making those who agree with the group's message less likely to accept non-violent alternatives to achieve the group's goals (Feinberg et al., 2019; Skitka & Morgan, 2009).

PPMM logic suggests that de-moralization may be possible through messages designed to facilitate cognitive reappraisal in audiences, specifically by decreasing audiences' moral emotions around the accordant issue (Feinberg et al., 2019; see also Luttrell & Togans, 2021; Kodapanakkal et al., 2022; Mooijman et al., 2018; Skitka & Morgan, 2009, 2014). For example, interventions designed to de-moralize immigration as a loyalty issue might discuss immigration as something mundane (i.e., people coming and going from one country to another) that naturally occurs in every society, rather than a morally charged "us versus them" issue. Although the utility of such a high-stakes intervention is untested, findings from future theoretically informed research in this area stand to have great humanitarian implications.

Limitations

Although our sample included a total of 873 materials from ($n = 73$) terrorist groups, future work should attempt to account for propaganda that was unavailable for 70 (48.95%) of the 143 terrorist groups in the PPT-US. Propaganda could be unavailable for many reasons, including terrorists' use of private social media meant to target like-minded people, such as Rumble or Telegram (e.g., see Gilbert, 2023), their use of websites that are unindexed by search engines, or because their recruitment efforts were primarily interpersonal. Although our detailed five-phase search strategy suggests that the propaganda included in the present study is that which is most publicly available and thus most likely to be encountered by people online,

future researchers should examine the extent to which different communication strategies might predict terrorist message content and subsequent behavioral outcomes (e.g., Matusitz, 2018).

Second, our use of manual coding to identify moral value appeals in propaganda content is vulnerable to bias as a result of the human coders' moral foundation salience, demographics, and general attitudes (Al Kuwatly et al., 2020; Hopp & Weber, 2021; Weber et al., 2018). We adopted a manual, rather than automated, coding procedure due to the diversity of text, image, and audiovisual propaganda in our sample. Despite the fact that one of our coders was an international student, that all three coders were undergraduate students from the same university leads to the potential that their similar backgrounds may have influenced their coding decisions. Future work should attempt to minimize the potential for coder bias by increasing the number of annotators, relying on annotators with more diverse backgrounds, and possibly, by building on existing automated procedures to account for image and/or audiovisual media content (Artstein & Poesio, 2005; Crone et al., 2018; Hopp et al., 2021). With this in mind, we hope our annotated PTO-US database could be useful as a set of training data for future work developing automated procedures capable of capturing moral appeals in non-text-based propaganda.

Third, although our search criteria for propaganda were intended to include all content created by the terrorist group to promote their cause, we did not extract the communicative intent of each item. That some propaganda items may have been created with the intention of persuading people's attitudes whereas others may have been created for the purpose of spurring direct action at a particular protest may have influenced the specific moral appeals present in each item (e.g., Matusitz, 2018). Future research should add nuance to the analyses outlined here to determine whether certain variables such as persuasive intent or even the date range of their attack(s) moderate moral appeals' influence on the groups' behavioral outcomes.

Fourth, when choosing a date to access terrorist organizations' websites in our search for propaganda on the Internet Archive's Wayback Machine, we chose a date closest to the group's last known attack. Although this was an intentional decision that would allow us to investigate the moral appeals used by a group around the time they were known to be violent, this procedure may have missed moral appeals used by groups who planned, but failed to carry out, attacks as a result of law enforcement intervention. To the extent that details about planned attacks are publicly available, future researchers should investigate the moral appeals on terrorist organizations' websites surrounding planned attack dates.

Conclusion

Despite a slight decline in the number of terrorist attacks globally over the past several years, terrorism remains an ongoing threat to citizens across the globe (START, 2021). As the success of extremist groups relies heavily on the recruitment of new members (Stern, 2003), investigating the process of extremist recruitment remains socially exigent. Guided by the MIME, we attempted to provide a foundation for this type of investigation by examining the extent to which known violent terrorist organizations appeal to audiences' moral values in their propaganda, whether group characteristics may predict propaganda's moral appeals and whether certain moral appeals are correlated with the severity of groups' violence. Although the proximate and

ultimate causes of what leads people to commit violent atrocities are complex, incremental advances in the social-scientific understandings of these causes can be useful supplements for addressing terrorism as the humanitarian crisis that it is.

Conflicts of interest

None declared.

Notes

1. Given MFT's focus on innate, gut-level responses to behaviors that uphold or violate principles concerned with the five foundations, and its underlying social intuitionist logic (Haidt, 2001), the MIME initially drew its conception of morality from MFT, in part, to explain and differentiate audiences' intuitive, gut-level responses to morally laden media from their rational, deliberative responses. However, the MIME does not suggest MFT's list of domains is exhaustive, and its logic leaves room for domains to be added or eliminated as knowledge on moral psychology advances. For instance, researchers could attempt to incorporate the morality as cooperation framework (MAC; Curry, 2016) with the MIME's logic. The MAC outlines seven moral domains that differ slightly from MFT's. Given how useful previous research has found MFT's scheme for investigating media content, we examined the moral concerns outlined by MFT in the present study, but we encourage future researchers to build on our work using new moral frameworks (e.g., MAC) with the goal of providing comparative evidence on which framework might be better suited for examining MIME processes.

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