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Motivations for violent extremism: Evidence from lone offenders' manifestos

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Abstract

This study explores the motivational drivers of violent extremism by examining references to motivational goals—values—in texts written by lone offenders. We present a new database of manifestos written by lone offenders ($N = 103$), the Extremist Manifesto Database (EMD). We apply a dictionary approach to examine references to values in this corpus. For comparison, we use texts from a matched quota sample of US American adults ($N = 194$). Compared to the general population, extremists referred more often to values of security, conformity, tradition, universalism, and power, and less often to values of benevolence, stimulation, and achievement. In extremist manifestos, ingroup descriptions referred more to security and universalism values, whereas power values dominated outgroup descriptions. Non-extremists referred to the same values in conjunction with "us" and "them" (benevolence and self-direction). The values that extremists referenced suggest interpersonal detachment and a clear delineation of value narratives around "us" and "them".

INTRODUCTION

Definitions of acts of terrorism commonly include two features: (1) a violent act or acts (2) committed to achieve social or political goals through intimidation (Schouten, 2010). What differentiates terrorism from other forms of violence is the motivation behind the violent act. Nonetheless,

academic investigations of terrorism in the behavioral sciences have paid less attention to the specific reasons for committing terrorist attacks than to the group processes and dynamics in which these attacks are embedded. This paper presents the Extremist Manifesto Database (EMD)—a database of texts written by lone-actor terrorists to explain or justify their attacks. We use automated text processing for an exploratory assessment of these texts to identify references to basic human values. Values are desirable end goals that motivate action (Bardi & Schwartz, 2003; Schwartz, 1992). The values in terrorists' manifestos may clarify the motivational drivers of their violent extremism. To identify the unique features of the motivational profile of violent extremists, we compare the value profiles of lone offenders to both text-based and self-reported value profiles of the general population.

Psychological theories of terrorism

Psychological accounts of terrorism commonly view it as an organized activity, carried out in groups (Spaaij, 2010). The theories proposed to explain terrorism focus on the group and intergroup processes that underlie recruitment, indoctrination, preparation, and execution of violent acts.

Moghaddam (Moghaddam, 2005, 2006) situated terrorist violence as the end point of a narrowing "staircase to terrorism", a six-step process that takes an individual from dissatisfaction with the material conditions of the group to the terrorist act itself. In his view, terrorism is not an irrational impulse, but a rational choice in a constrained environment: the behavioral options become more limited as the radicalization progresses. The crucial components of the model are steps 4 through 6 that detail radicalization within an extremist organization: moral engagement with the organization and its causes, strengthening opposition between "us" and "them", and normative pressure that disinhibits violence.

A similar metaphor compares the process of radicalization to a pyramid: At the base are all people sympathetic to a particular cause; at the apex are the people who are willing to perform terrorist acts (McCauley & Moskalenko, 2008, 2017). In a seminal paper, McCauley and Moskalenko (2008) conceptualized 12 mechanisms responsible for radicalization. Only two mechanisms occur at the individual level: personal victimization (perceived injustice against an individual as opposed to a group) and political grievance (disagreement with the political or social trends).

Taylor and Louis (2005) used psychological theories of the self and identification to describe how terrorist acts can promote the needs of the self. They argued that situations in which collective identity is weak or insufficiently positive create a vacuum and a need for strong collective identity that terrorist recruiters can fill. In this view, contempt and reactance against the outgroup strengthen the collective identity and increase the significance of ingroup norms (Louis & Taylor, 2002).

The significance quest theory (Kruglanski et al., 2009, 2014, 2018) specifies three drivers of radicalization: (1) a motivational component, desire for significance, defined as a desire to matter, be respected, and have meaning, (2) an ideological component, a narrative that identifies means for achieving significance and justifies violence, and (3) a social component, networks and group dynamics through which the ideology is shared and the goal is pursued (Kruglanski et al., 2014). Unlike other theories intended to explain terrorist acts, the significance quest theory focuses first on the motivation of the individual. The group processes are the context that enables achieving the desired goal (significance) through a terrorist act.

Individual motivation for terrorist acts: "Lone wolf" terrorism

"Lone wolf" terrorists are "individuals who plan, organize, and execute their attacks in the absence of a financially or physically supportive terrorist organization" (Alakoc, 2017, p. 514). The term "lone wolf" has been debated in terrorism studies literature because it implies that the perpetrator operates in complete isolation. In fact, however, lone offenders are often involved in radical networks online or offline (Schuurman et al., 2019). Schuurman et al. (2018), for example, show that 78% of lone actors had exposure to external sources of justification or endorsement of violence. It is more appropriate to view the perpetrators of violence on a continuum from truly alone to group-based (Schuurman et al., 2019). Nonetheless, those on the "lone" end of the spectrum, are a particularly interesting group for the study of individual motivations of terrorism. The absence of group pressure from the terrorism organization and relative weakness of conformity motives to carry out the attack make lone offender terrorism particularly useful for understanding the role that individual ideas and beliefs play in motivating terrorist acts (Moskalenko & McCauley, 2011).

The psychological study of lone terrorists is challenging because they are one of the hardest-to-reach populations. Shortly after committing their crime, most lone terrorists commit suicide, are killed, or are imprisoned. However, they often leave behind manifestos, letters, or online posts. The explicit intention of these texts is often to explain the motivation behind the offender's actions. This presents psychologists with a unique opportunity to understand what goes into "the making of violent extremists" (Kruglanski et al., 2018).

Historically, analyses of texts in psychology employed qualitative paradigms. Recent years have seen significant advances in the use of automated text analysis by behavioral scientists (Iliev et al., 2015). Some commonly used techniques include topic-specific dictionaries, feature extraction, and co-occurrence analysis (Iliev et al., 2015). The growing sophistication of these tools and the availability of textual data have boosted the popularity of these techniques despite their methodological limitations. Automated text analysis is complementary to traditional survey methods because it does not suffer from such limitations of self-reports as response biases, participant fatigue, and experimenter effects (Paulhus & Vazire, 2007).

Although terrorist manifestos are written specifically to explain the motivations behind attacks, few have applied the newly developed automated text analysis techniques to these texts. To our knowledge, Kaati et al. (2016) is the only published effort to quantitatively analyze lone offender manifestos. They analyzed ten manifestos using the LIWC dictionary (Pennebaker et al., 2015). They found that lone offenders used significantly longer words than their control group (blog posts), used third person plural pronouns (they, them) more frequently, expressed more negative and fewer positive emotions, and referenced the concept of *power* more often and *friends* less often than authors of blogs. Limitations of this study are the absence of a theoretical justification for the selection of the comparison group and of the measured properties of the texts. This makes it difficult to interpret the findings and link it to the existing literature on the psychology of terrorism.

Values as motivational goals: Theory of basic human values

In this study, we draw upon the Schwartz theory of basic human values (Schwartz, 1992, 1994; Schwartz et al., 2012) because it is uniquely useful for conceptualizing the contents of motivation. This theory defines values as beliefs about the importance of desirable goals that people
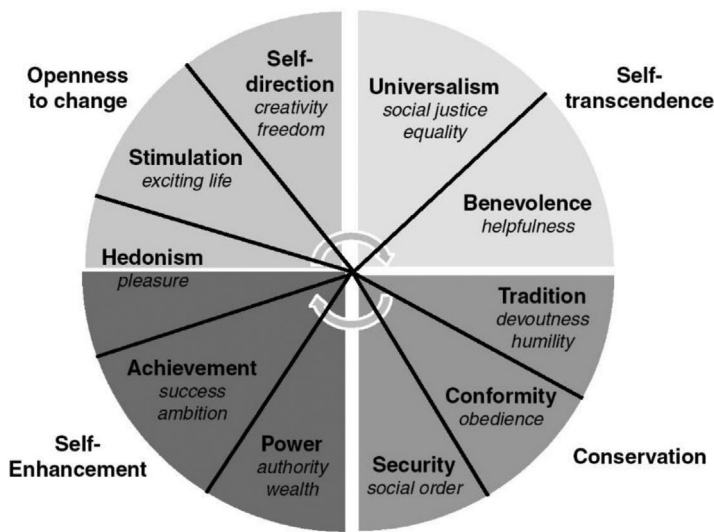
FIGURE 1 Schwartz's circular motivational continuum of 10 values. *Note*: Adapted from Bardi et al. (2014).

use as criteria to evaluate and select behavior across situations. The basic values in the theory are cognitive representations of three universal, evolutionarily significant needs: biological needs of the organism, interaction needs for coordination, and the group requirements to survive and flourish. Although the underlying motivational drives are universal, people order their values hierarchically according to their relative importance based on their experience and heredity.

In widely replicated studies (Schwartz, 1992, 1994; Schwartz & Bilsky, 1990), Schwartz and colleagues found that the endorsement of values can be summarized by two motivational oppositions: self-transcendence versus self-enhancement (values concerned with outcomes for others versus values concerned with the outcomes for the self) and openness to change versus conservation (values that emphasize novelty and opportunity versus values that emphasize predictability and maintenance of the status quo). The original theory locates ten broad, basic values on these two dimensions (Figure 1), organizing them according to the motivational goals they express. This makes it especially useful for differentiating between motivations based on their content.

The personal values dictionary

The personal values dictionary (PVD, Ponizovskiy et al., 2020) is a dictionary developed to assess references to Schwartz's basic human values in text. The dictionary approach is the dominant type of automated tool for text analysis intended to capture psychological constructs (Guo et al., 2016). The underlying assumption of this psycholexical approach (Allport & Odbert, 1936; Galton, 1884/1949) is that the choice of words reveals the psychological traits or states of the author. Psychologists have developed dictionaries to measure personality traits (Kosinski et al., 2013), moral foundations (Graham et al., 2009), stereotype content (Nicolas et al., 2020), emotional states (Pennebaker et al., 2015), and more. The PVD uses similar techniques to detect references to values in text. The PVD consists of 1068 value-laden words, grouped into 10 sub-dictionaries, each measuring one of the 10 basic values by Schwartz (1992). Ponizovskiy et al. (2020) developed and validated the PVD using a wide range of textual data authored by over 180 000 individuals in social media posts, blog entries, book chapters, and essays. This makes the PVD generalizable across types of texts. The PVD showed excellent internal consistency, good test-retest reliability

and convergent and discriminant validity, and small-to-moderate correlations with self-reported values (Ponizovskiy et al., 2020). In the data reported in the present article, the internal consistency of the dictionary estimated with the Kuder-Richardson formula 20 ranged from .95, 95% CI [.92, .97] to .98, 95% CI [.96, .99].[1]

The present study

This exploratory study uses the PVD to investigate texts that lone-actor terrorists produced to justify or explain their attacks. We seek to better understand the motivations for terrorist attacks. We ask the following exploratory questions: (1) Can one use references to values to differentiate between perpetrators with different ideological stances? (2) How do references to values in texts written by lone offenders differ from references to values in texts written by the general population? Our study extends the current psychology of terrorism literature by developing and describing a new dataset of lone offender manifestos and by analyzing it with a theoretically grounded dictionary designed specifically to capture motivationally relevant content in text.

METHOD

Extremist manifesto database (EMD)

To compile the database, we searched available case studies of lone offenders and their writings (Kaati et al., 2016; Moskalenko & McCauley, 2011), the Global Terrorism Database (START, 2020), and news reports using relevant keywords. The criteria for inclusion were as follows: (1) The attack was committed by a single person who had no known ties to terrorist organizations or networks; (2) There is reasonable certainty that the text was written personally by the perpetrator; (3) The text was written before or shortly after the attack; (4) The text was clearly related to the attack; (5) The text was either written in English or was translated into English by a credible source. The search and selection of texts was carried out between September 2020 and January 2021. The coding of variables described below was done between January and March 2021.

Variables

The resulting database includes texts from 103 lone offenders. The database provides information on the offender's name, the name and place of the attack, type of text (manifesto, online post, note, etc.), year of publication, whether the text was available in full, and whether it was originally written in English. We further coded whether the attack sought to advance personal or

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[1] The KR-20 (Kuder & Richardson, 1937) is the recommended measure of reliability for dictionaries (Boyd et al., 2022). A correlation between different parts of the text, perhaps, offers a more intuitive measure of reliability. The correlations between value scores for the first and the second halves of the extremist manifestos averaged .44. For control essays, the average correlation was .28. The relatively low scores reflect both the measurement error and the lower tendency for tautology in the written word compared to psychological tests: in texts a point, once made, is often not repeated. Lower correlations for essays support this interpretation, as they are, on average, shorter, and thus offer less opportunity for repetition.

political goals. For the politically motivated attacks, we coded the specific ideological motive using a classification scheme for specific motives from the Center for Strategic and International Studies (Jones et al., 2020). It includes categories for right-wing, left-wing, religious, ethnonationalist, and anti-government attacks.[2] Three members of the team coded these variables independently and resolved disagreements through discussion. We calculated Fleiss' Kappa as a measure of inter-rater agreement. There was substantial agreement (based on benchmarks provided by Landis & Koch, 1977) for the goal of the attack (political/personal; $\kappa = .64$, $p < .001$) and ideological motive ($\kappa = .67$, $p < .001$). In conflicting cases, when the text represented more than one ideology, we selected a category that the coding group agreed was most prominent in the content of the text. For example, we coded the manifesto by Ted Kaczynski, "Industrial Society and Its Future," as anti-government rather than left- or right-wing, although it contained elements of both ideologies. Finally, based on openly available information, we also coded perpetrator's gender, age, race, level of education, and whether they were diagnosed with mental illness.

Sample

The database covers the timespan from 1963 to 2019. The length of texts varied between 16 and 791,281 words, $Med = 430$, $M = 12,392$, $SD = 79,239$. Most texts (83%) were originally written in English. Most attacks were carried out in the USA (72%), with only one to four attacks from any other single country. All perpetrators were male, with a mean age of $M = 32$, $SD = 14$. Sixty-four percent of the sample was White, 14% Black, 2% Asian, and 20% could not be categorized into one of the commonly used racial categories. Forty percent were university students or graduates, 12% had completed vocational training or an associate degree, 19% had a secondary education, and the education level could not be determined for 29%. A third of the perpetrators were diagnosed with a mental health disorder. Eighty-eight of the attacks were politically motivated, with the following distribution of specific motives: right-wing ($N = 42$), religious ($N = 23$), anti-government ($N = 10$), ethnonationalist ($N = 7$), and left-wing ($N = 6$).

Non-extremist comparison group

Participants

We obtained a national sample of US American adults from Prolific Academic, stratified to match the US adult population on age, gender, and ethnicity ($N = 404$). Participants received the equivalent of $3.4 for their time. The sample was balanced in terms of gender (51% female, 48% male, 1% non-binary or did not respond), with mean age of $M = 46$, $SD = 15$. Sixty-nine percent of participants self-identified as White, 13.4% as Black, 8.2% as Asian, and 6.7% as Hispanic. The majority (68.6%) of participants had a university degree (BA, MA, PhD, or a professional degree), 9% had an associate degree in college, 14.8% had some college but no degree, and 7.4% were high school graduates or had not completed high school. Most participants were employees (54.9%) or self-employed (13.4%), and 30.6% were not working (unemployed, disabled, or retired). All

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[2] The CSIS classification does not include the category of anti-government attacks. The research team decided to add this category, because several cases were clearly anti-government in nature but could not be attributed unequivocally to either left- or right-wing ideologies.

comparisons between the extremist and non-extremist samples were conducted using a subsample of non-extremists matched with the extremist sample on gender and controlling for age and education (see Analytical strategy section below).

Procedure and measures

The decision to commit a terrorist act was likely one of the most important decisions the perpetrators made in their life. In the manifestos written prior to such acts, the authors usually sought to explain to others why they made that decision. To obtain a comparable sample of texts, we asked participants to write an essay about the most important decision they had made in their life and to describe why they made that decision. A pretest ($N = 7$) confirmed that this prompt elicited texts that contain value-relevant information. The essays varied in length from 173 to 414 words, $M = 243$, $SD = 54$. Additionally, we collected information on participants' socio-demographic backgrounds and measured their self-reported values with the revised Portrait Values Questionnaire (PVQ-R, Schwartz et al., 2012). The questionnaire included other scales that are outside of the scope of the current study. The questionnaire took an average of 22 min to complete. The study was not preregistered. All materials, data, and code can be found on the project's OSF page: https://osf.io/mvxkd.

Analytical strategy

We applied the PVD to our corpora using the *quanteda* package in R (Benoit et al., 2018) to obtain estimates of the ten values in each text. We first prepared the corpus by removing numbers, symbols, punctuation, capitalization, and stopwords (e.g., "the," "to"). We then trimmed the corpus by excluding the words that were extremely rare ($<5\%$) or extremely frequent ($>99\%$) in our corpus. We counted the number of matches between each text and each of the ten sub-dictionaries of the PVD. We then divided the number of matches by the total number of words in the text and multiplied by 100. Thus, the score for each value is the percentage of all the words in each text that matches the value. We applied within-person centering to obtain each person's profile of value priorities; that is, the frequency of mentions of each value relative to other values (see Schwartz, 2007, for a theoretical justification of centering).

First, we assessed the differences between perpetrators with different ideological motives in the values expressed in the EMD. This revealed whether the value profiles calculated using the PVD captured ideological differences in texts. Second, we assessed whether the value profile of extremists differed from that of a non-extremist group. For the latter purpose, we selected a subset of individuals from the comparison group, matched with the extremist group on country (only USA) and gender (only men).[3] We computed a MANCOVA with the ten values as dependent variables and the group (extremists vs. non-extremist) as the independent variable. We controlled for age and education on which the two groups were poorly matched. Third, we sought to better understand how extremists compared to the general population in construing the ingroup and

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[3] In the Supplemental Online Materials, we additionally report the extremists' value profile based on the full sample, the text-based and self-reported value profiles of the non-extremist comparison group based on the full sample, and self-reported value profile of a gender matched cross-cultural sample drawn from 10 countries from World Values Survey (WVS) 6 wave.
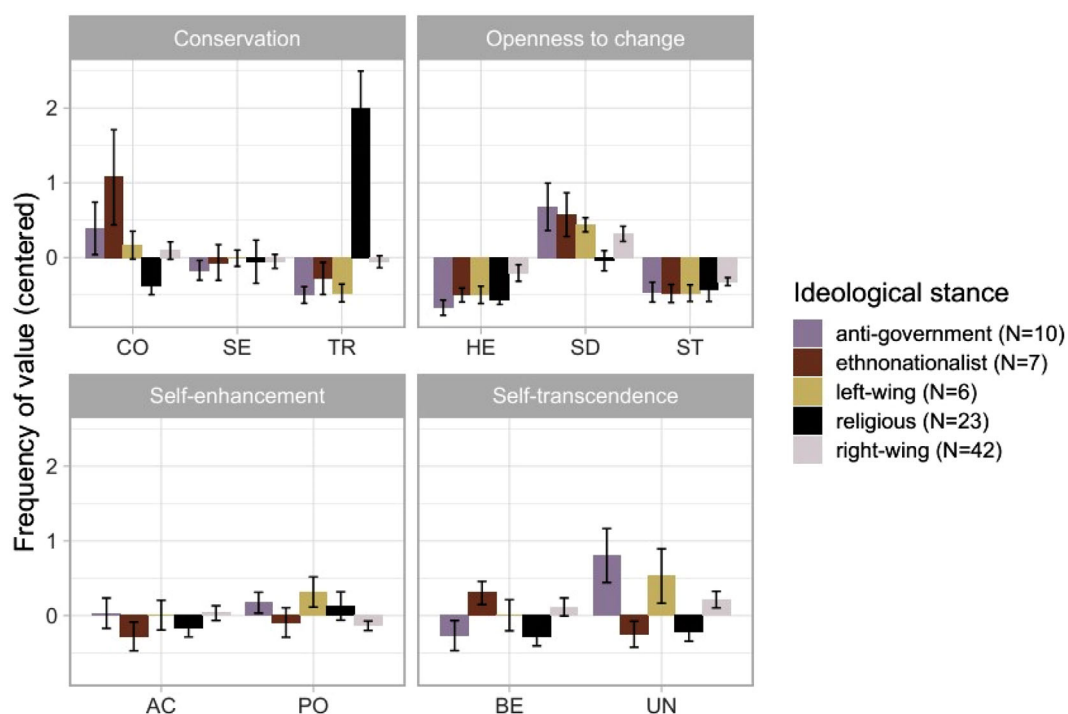
FIGURE 2 The value profiles of lone offenders by ideological stance. The error bars represent standard errors. Abbreviations: AC, achievement, BE, benevolence; CO, conformity; HE, hedonism; PO, power; SD, self-direction; SE, security; ST, stimulation; TR, tradition; UN, universalism. [Color figure can be viewed at wileyonlinelibrary.com]

outgroup. For this purpose, we conducted a collocation analysis, examining the use of value-laden words in conjunction with first person (e.g., us) and third person (e.g., they) plural pronouns.

We present multiple robustness checks in the online supplement, including sensitivity of the results to word frequency adjustments, outlier exclusion, and to the size of the collocation window for the collocation analysis.

RESULTS

Value profiles and ideological stances of offenders

A MANOVA with the nine centered values as dependent variables (one has to be omitted as centering creates linear dependency between the ten values) and the ideological stance of the offender as the predictor tested whether the value profiles of lone offenders differed as a function of the specific political goals they pursued. Ideological stance had a significant overall effect on value profiles, *Pillai's Trace* = .82, $F(4, 83) = 2.23$, $p < .001$, $\eta^2 = .21$. Univariate tests revealed significant differences for the values of conformity ($\eta^2 = .18$, $p = .003$), tradition ($\eta^2 = .38$, $p < .001$), universalism ($\eta^2 = .17$, $p = .003$), and self-direction ($\eta^2 = .11$, $p = .049$). Figure 2 portrays the value profiles of each of the five ideological subgroups.

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TABLE 1 Extremist and non-extremist sample characteristics.

|	N	Gender (% men)	Age M (SD)	Race	Education	Text length (Median)
Extremists	74	100	33 (15)	66% White 18% Black 1.4% Asian 0% Latinx 1.4% Mixed 13% Other	19% university graduate 26% university student 11% associate degree 15% secondary education 30% unknown	498
Non-extremists	194	100	46 (16)	70% White 13% Black 8% Asian 7% Latinx .5% Mixed 2% Other	69% university graduate 14% university student 8% associate degree 9% secondary education 0% unknown	219

The observed subgroup differences corresponded to the differences in ideological stances. The anti-government subgroup of offenders referred more frequently to values of universalism and self-direction (concern for the welfare of society and maintaining autonomy) than any other subgroup did. The ethnonationalists referred more frequently than any others to the value of conformity (obedience to ingroup norms and expectations). The religiously motivated subgroup referred more frequently than any others to the value of tradition (preserving religious customs and beliefs). The left-wing and right-wing subgroups did not stand out on any of the values. These findings suggest that PVD can capture meaningful differences in the value emphases of some of the ideological subgroups of offenders.

Differences in values between extremists and non-extremists

To match the EMD and the comparison sample by country, we selected all cases from EMD where the attack was carried out in the USA. To match the samples by gender, we selected all men from the comparison group. Table 1 presents the characteristics of the two subsamples. The two samples differed significantly by age, $F(1, 266) = 34.15$, $p < .001$, and level of education, $\chi^2(4) = 88.4$, $p < .001$, both of which are related to values (Schwartz, 2007). We therefore included both as covariates in the analysis. The samples also differed by text length, but we did not include it as a covariate since it was not related to value scores ($-.07 < r < .11$, all non-significant).

A MANCOVA with the centered values as dependent variables and the group as the independent variable, controlling for age and education, showed significant differences in value profiles between the two groups, *Pillai's Trace* $= .40$, $F(1, 261) = 12.4$, $p < .001$, $\eta^2 = .40$. Univariate effects were significant for eight of the ten values: security ($d = .49$, $p < .001$), conformity ($d = .82$, $p < .001$), tradition ($d = .52$, $p < .001$), benevolence ($d = -.83$, $p < .001$), universalism ($d = .77$, $p < .001$), stimulation ($d = -.48$, $p < .001$), achievement ($d = -.70$, $p < .001$), and power ($d = .43$, $p = .002$). Figure 3 illustrates these differences.

Large differences occurred in the frequency of references to the values of benevolence and achievement: extremists referenced both values considerably less often than the comparison group from the general public did. Extremists also referenced less often the value of stimulation.
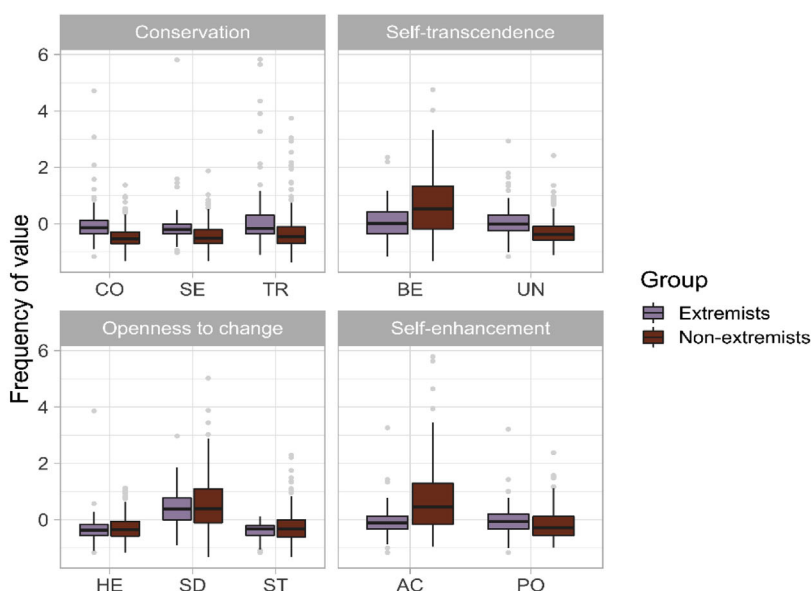
Note. CO – conformity, SE – security, TR – tradition, BE – benevolence, UN – universalism, HE – hedonism, SD – self-direction, ST – stimulation, AC – achievement, PO – power.
The hinges in the boxplot correspond to 25th and 75th percentiles, and the whiskers extend from lowest to highest value, but no longer than 1.5 * inter-quartile range from the hinge. The grey dots represent outliers.

FIGURE 3 Values of extremists compared to non-extremists. *Notes*: The hinges in the boxplot correspond to 25th and 75th percentiles, and the whiskers extend from lowest to highest value, but no longer than 1.5 * inter-quartile range from the hinge. The grey dots represent outliers. Abbreviations: AC, achievement; BE, benevolence; CO, conformity; HE, hedonism; PO, power; SD, self-direction; SE, security; ST, stimulation; TR, tradition; UN, universalism. [Color figure can be viewed at wileyonlinelibrary.com]

At the same time, extremists referenced more often the values of security, conformity, tradition, universalism, and power, and equally often values of hedonism and self-direction. These differences point to a certain inter- and intrapersonal detachment in the extremist sample: the concern for close others (benevolence), approval by the larger society (achievement), and pleasant arousal (stimulation) are referenced less by the extremists, whereas concern for broad societal issues outside of one's own immediate environment (universalism) and desire for dominance (power) are more pronounced.

Construals of "Us" and "Them"

To obtain a more nuanced understanding of how extremists construe and interact with their social environment, we next analyzed the use of value-laden words in conjunction with pronouns indicating the ingroup (us) and the outgroup (they). We performed a collocation analysis by identifying pronouns in the texts, capturing six words preceding and following each pronoun, and scoring the values expressed in the resulting texts using the PVD. We used the same scoring method as before, first calculating the percentage of words referencing each value among the
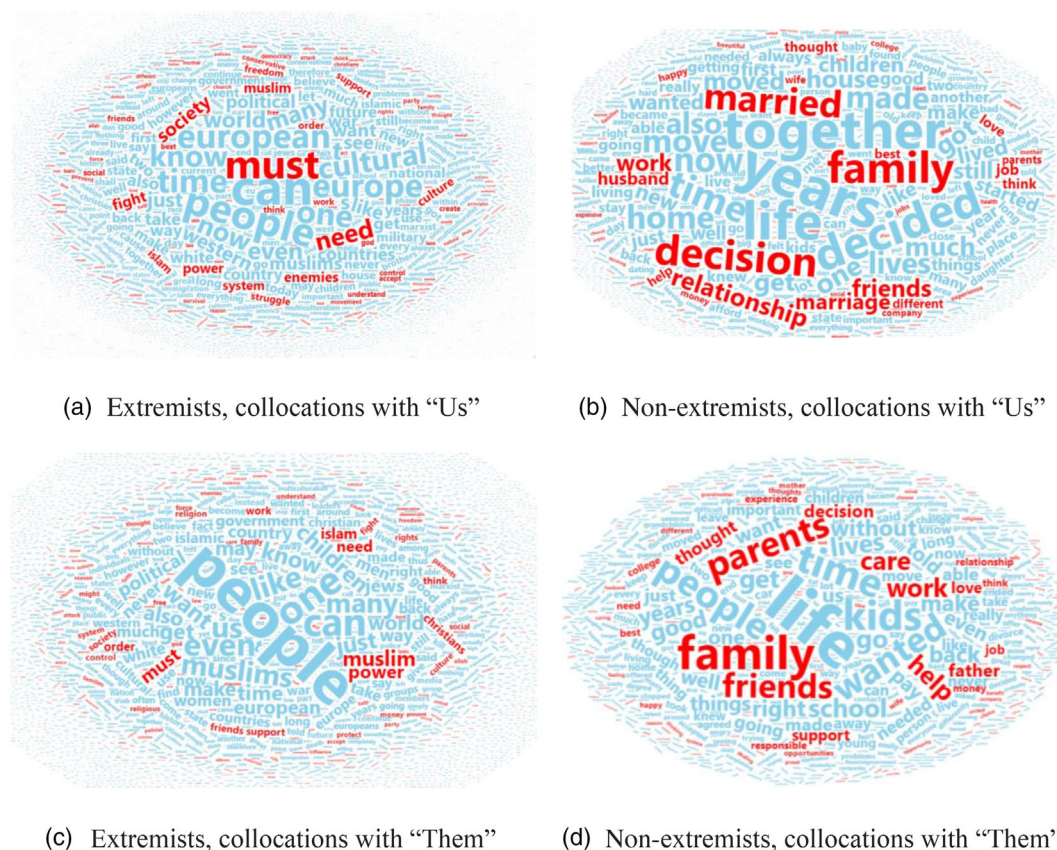
(a) Extremists, collocations with "Us"

(b) Non-extremists, collocations with "Us"

(c) Extremists, collocations with "Them"

(d) Non-extremists, collocations with "Them"

FIGURE 4 Word clouds of collocations of "us" and "them" in the extremist and non-extremist samples. [Color figure can be viewed at wileyonlinelibrary.com]

total number of words in the text and then centering these scores within individuals. Figure 4a–d show the most frequent words used in the extremist and non-extremist samples in conjunction with "us" and "them". Value words are in red.

In conjunction with "us" (we, our, etc.), extremists referred most frequently to the values of security (.04) and universalism (.04) and least frequently to the values of hedonism (−.06) and stimulation (−.04). In contrast, the non-extremist comparison sample referred most frequently to the values of benevolence (.15) and self-direction (.06) and least frequently to the values of conformity (−.06) and security (−.05). The largest differences were observed in the frequency of references to benevolence ($d = −.47$, $p < .001$, higher among non-extremists) and conformity ($d = .45$, $p < .001$, higher among extremists).

In conjunction with "them" (they, their, etc.), extremists referred most frequently to the value of power (.08). References to power were twice as frequent as references to the next most frequent value—self-direction (.04). The least frequent references were, once again, to the values of hedonism (−.04) and stimulation (−.04). The comparison group referred most frequently to the value of benevolence (.09), followed by self-direction (.03). All other values were referenced equally infrequently (−.02 to .1). The largest difference between groups in references to values were for power ($d = .46$, $p < .001$, higher among extremists) and benevolence ($d = −.35$, $p = .002$, higher among non-extremists).

This pattern of results complements our earlier findings. The non-extremist comparison group appears to associate "us" (ingroups) with care and concern for others (benevolence) and with independence and self-efficacy (self-direction). They do not associate "us" (ingroups) with constraints (conformity) or threats (security). In contrast, the extremists have a markedly different picture of "us." They associate "us" (ingroups) with security concerns and abstract universal goals. Ingroups apparently do not satisfy the immediate needs of belonging (low benevolence) and they provide little pleasure (low stimulation and hedonism).

The pattern of differences in the use of value-laden words in conjunction with "them" (outgroups) is even more stark. For the extremists, the value of power dominates the narrative around outgroups. In the non-extremist sample, the value of benevolence dominates the narrative. The general population construes "us" and "them" similarly: Both pronouns are used most often in conjunction with the values of benevolence and self-direction. The extremists, in contrast, have a clearly defined border between "us" and "them." "Us" evokes mainly security and universal concerns whereas "them" evokes a narrative of power and dominance.

DISCUSSION

The psychology of terrorism is dominated by intra- and intergroup theories; terrorism is studied predominantly through the lens of collective action (Hamm & Spaaij, 2017). To better understand *individual* motivations that drive people to commit ideological violence, the present study examined lone-actor terrorism. We presented the EMD—a database of lone offenders' writings in which the authors try to explain or justify their actions. We used the theory of basic human values (Schwartz, 1992; Schwartz et al., 2012) as a theoretical framework because it helps capture the content of motivational goals. Applying the personal values dictionary (PVD, Ponizovskiy et al., 2020) to the EMD, we identified lone offenders' value profiles and compared them to the value profiles of a non-extremist comparison group.

An analysis of differences between the value profiles of offenders with different ideological stances confirmed that the PVD captures meaningful motivational differences in the content of texts. For example, offenders with an anti-government stance referred more frequently than other offenders to the value of universalism, which reflects the importance of fairness and justice, and to the value of self-direction, which reflects the importance of independence. Religiously motivated offenders referred more frequently to the value of tradition, reflecting the importance of religion. Ethno-nationalists referred more to the value of conformity, reflecting the importance of their ingroup to them.

Sizeable differences in value references between offenders and non-offenders indicate that the motivational profile of a lone offender is distinct from that of the average person. Whereas higher prevalence of references to security, conformity, and tradition values in the extremist sample can be explained by the predominantly conservative ideological stance of this sample (right-wing and religious extremists constituted 63% of the sample), other differences could not be easily attributed to ideology. What differentiated extremists from non-extremists were the lower importance of close ties with others (benevolence), achievement according to societal standards, and pleasure and excitement in life (stimulation and to a lesser degree—hedonism).

If we consider the values of self-direction, achievement, and power as indicators of the "desire to matter" (Kruglanski et al., 2018), we can see that this desire itself did not differentiate well between extremists and non-extremists: extremists scored slightly higher on power but considerably lower on achievement and we found no differences in references to self-direction. While we do not find

evidence for differences in the desire to matter itself, there is some suggestion that extremists may perceive the conventional means of satisfying that desire (close relationships with others, personal success) as unavailable to them.

These findings are consistent with Merton's view of deviant behavior as outlined in his theory of anomie (Merton, 1938) or, as later referred to, the strain theory (Rosenfeld, 1989). Merton argued that deviant behavior occurs when cultural goals are accepted, but the institutionalized means for achieving them are unavailable. When the desire to matter remains high, but the conventional ways of mattering are not available or do not satisfy the need, a person may find other means to feel significant. They might find a mission: extremists referred more frequently to the value of universalism, which reflects the importance of broad societal concerns such as fairness and justice. However, the collocation analysis showed that the value of universalism is frequently referenced only when the authors write about the ingroup (us, we, etc.), but not the outgroup (them, they, etc.). Although the value of universalism is usually associated with tolerance and acceptance towards outgroups (Beierlein et al., 2016), in this case, it serves to divide rather than unite.

Importantly, value references were highly similar in the non-extremist group—both the ingroup and the outgroup were mentioned in conjunction with benevolence and self-direction values. In contrast, value references in conjunction with "us" and "them" were markedly different in the extremist group. While the extremists mentioned the values of universalism and security in conjunction with ingroup, they mentioned the value of power predominantly in conjunction with the outgroup. This narrative of dominance in relation to the outgroup can be another important marker of radicalization.

The value-based analysis of texts produced by lone offenders offers a unique window into the content of their motivations. Important limitations, however, remain. Automated text analyses offer only an imprecise picture of underlying psychological traits and states (Iliev et al., 2015). As the robustness checks presented in the online supplements indicate, the strength (but not the content) of the findings varies depending on the procedures used to calculate the value scores. Theory grounded, multi-method designs including survey, observational, and interview data collected from surviving lone offenders could help elaborate on the motivational profile of violent extremists.

The current study identified differences in the use of language between highly radicalized individuals and a sample representative of the general public. The specific prompt given to the comparison group in the writing task may also be important: comparisons with naturally produced texts (e.g., forum posts) or interview data in response to more than one question may shed light on different elements of the extremists' motivational profile.

Further research is needed to determine whether the method we employed is sufficient to differentiate between individuals at different stages of the radicalization process. For example, future studies could compare the texts from the Extremism Manifesto Database with texts produced by participants of peaceful protests (non-extremists who engage in individual or collective action to achieve political goals) or from extremist forums (radicalized individuals who had not yet committed violence). Such posts are more available and numerous than extremists' manifestos. They could serve as sources for more fine-tuned comparisons of the values of diverse types of activist and radicalized individuals.

CONFLICT OF INTEREST STATEMENT

The authors declare no conflicts of interest.

DATA AVAILABILITY STATEMENT

All study materials, including data and code, are available via the Open Science Framework (OSF) platform: https://osf.io/mvxkd. The study was approved by the ethics committee of the Ruhr University Bochum Psychology Department. We confirm that the manuscript adheres to ethical guidelines specified in the APA Code of Conduct and of the German Psychological Society (DGPs). For the purpose of open access, a Creative Commons Attribution (CC BY) license is applied to any Author Accepted Manuscript version arising from this submission.

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SUPPORTING INFORMATION

Additional supporting information can be found online in the Supporting Information section at the end of this article.

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