

Headhunting Among Extremist Organizations: An Empirical Assessment of Talent Spotting

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Abstract

In recent years, terrorism scholars have proposed that more established and popular extremist organizations make pragmatic assessments of their human capital needs and modify operating standards to acquire members with advanced training and expertise such as medical, religious, or military backgrounds that may benefit extremist activities. To examine these claims, we rely on data pertaining to 105 extremist organizations gathered throughout the Leadership of the Extreme and Dangerous for Innovative Results (LEADIR) project. The results provide empirical support for these propositions by suggesting that older and more publicly supported extremist organizations contain membership populations that possess expertise, and these organizations also become increasingly diverse across demographic characteristics of members. We conclude with suggestions for future research that extend the study of extremist recruitment and provide recommendations for practitioners in terms of addressing terrorism prevention initiatives.

Keywords: Recruitment, Extremist Organizations, Human Capital, Headhunting, Talent Spotting

Introduction

Since the attacks of September 11, 2001, violent extremism has gained near universal attention among researchers, media, governmental officials, and the general public concerned about national defense and public safety.[1] Terrorism researchers, in particular, have dedicated considerable energy toward understanding radicalization processes and what people do once they become members of terrorist groups.[2] To a lesser degree, terrorism researchers have also examined the dynamic nature of extremist recruitment, which refers to an “active process through which an organizational insider gets a new person to work for the organization.”[3]

Prior research focused on extremist recruitment highlights a variety of individual-level characteristics that influence a person’s receptivity toward extremist participation, including one’s “biographical availability,”[4] relationship with formal and informal social-networks,[5] and psychological vulnerabilities such as depression, deprivation, and perceived discrimination.[6] Moreover, in the case of extremist radicalization, researchers often focus on individual-level variation such as offender characteristics[7] and distinctions between group-based and lone offenders.[8] While we agree that individual-level characteristics are critical issues that deserve further attention, the current investigation represents a key step forward by investigating variation at the organizational level.

Specifically, we test recent propositions by terrorism scholars who suggested that extremist groups, like conventional organizations (e.g., Apple Inc.), make pragmatic assessments of their human capital needs and modify operating standards to acquire recruits with diverse expertise (e.g., medical, religious, or military training) that may help the group achieve ideological objectives.[9] Currently, however, these claims have not been assessed in an empirical fashion beyond case studies. To address this gap in the literature, we employ data on 105 extremist organizations gathered throughout the Leadership of the Extreme and Dangerous for Innovative Results (LEADIR) project. The purpose of the current article is to empirically test whether there is systematic variation in human capital between extremist groups at various stages of social popularity and organizational age.

Such an investigation may have substantial implications for terrorism prevention initiatives due to the fact that internal organizational activities (e.g., branding, recruitment) have been identified as essential components for ensuring sustainability of extremist activities through the supply of resources (i.e., manpower).[10] From this

perspective, knowing where an extremist group is in its lifecycle can give clues as to what demographics are most vulnerable to recruitment strategies. Finally, due to the analogous group structures and internal dynamics shared among violent extremist groups and conventional organizations,[11] the current investigation has the potential to highlight important points of continuity between terrorist groups and the broader realm of organizational behavior. In the following sections, we discuss specific hypotheses tested throughout the current study as well as key concepts that guide our analysis.[12]

Recruitment Cycling among Extremist Organizations

Due to the dynamic nature of extremist violence, organizational tactics often evolve as terrorist campaigns intensify and extremist organizations respond to counter-terrorism measures. For example, both the Provisional Irish Republican Army and al-Qaeda experienced structural and tactical shifts as consequences of effective counter-terrorism measures.[13] Governmental pressure forced both groups to implement a “cellular” organizational structure with increased autonomy among individual cells in order to evade infiltration. As a result of this move from a hierarchical to cellular structure, recruitment efforts were redirected toward individuals who were already close to the movement and within existing social networks – effectively limiting the group’s recruitment pool. In addition to external pressures from state and security apparatuses, scholars in the field of terrorism studies have also suggested that recruitment approaches evolve over time as extremist organizations become established and the number of quality applicants interested in joining the group increases. [14] In particular, Bloom argues that, like conventional organizations[15], extremist groups follow a “cycle” of recruitment that alternates between labor-intensive and expertise-intensive recruitment periods.[16]

The labor-intensive period is characterized as “open recruitment,” which is inclusive and contains low standards for acceptance.[17] During this recruitment phase, extremist organizations target “low hanging fruit” - individuals often lacking strong ideological convictions and/or expertise that would benefit the organization. [18] As Bloom argues, this recruitment strategy is particularly common for newly established extremist organizations, as they must initially focus energy and resources toward recruiting large numbers and securing financial resources. While individuals recruited during this phase may lack experience or skills that benefit the organization, this recruitment strategy allows the group to maximize the number of supporters either active in the organization, or at least, sympathetic toward the cause. Such an approach can then have subsequent favorable outcomes on the organization’s brand by projecting an image of strength and large size to external stakeholders.[19]

Alternatively, expertise-intensive periods involve raising the standards for admittance and intentionally targeting individuals with expertise that help the group achieve organizational objectives.[20] In these situations, instead of enacting open recruitment strategies, more established extremist organizations engage in “talent spotting” or “headhunting” recruitment techniques.[21] These recruitment strategies involve the selection of educated and trained individuals with specific expertise such as religious, military, or medical training. According to Hunter and colleagues, experts are necessary for sustaining operational functioning as they are more effective and creative in problem-solving matters and possess a wider knowledge-base. This is especially relevant for extremist organizations who control territory and function as service providers (e.g., law enforcement, developing infrastructure, education) in place of government structures. [22]

Based on the propositions set forth by Bloom and Hunter and colleagues that human capital needs shift over time as extremist organizations become more established, we hypothesize that as extremist organizations become more popular, these groups will diversify their workforce by making pragmatic assessments of their human capital needs and acquire members with advanced training and expertise. Moreover, we hypothesize that as extremist organizations become more popular, their membership population will diversify regarding age, race, ethnicity, and gender because the organizational value or benefit regarding expertise and training will offset the composition of a prototypical membership population in terms of observable characteristics (e.g., gender). In other words, these groups begin to place a premium on skillsets rather than maintaining homogeneous individual-level characteristics. These observations lead us to the first and second hypotheses to

be tested in this study.

H₁: Popular extremist organizations are more likely to contain a membership population with experience, expertise, and advanced training.

H₂: Popular extremist organizations are more likely to contain a membership population with an assortment of individual-level characteristics (e.g., gender, race, age).

In the next section, we provide a brief overview of how conventional organizations specialize as they mature and the numerous benefits that can be expected from this recruitment approach.

An Organizational Perspective on Headhunting and Specialization

While the application of an organizational perspective to the study of terrorism may seem novel, scholars have generated a considerable body of research that explores the applicability of this framework to help explain violent extremism vis-à-vis organizational theory, signaling theory, organizational trust, transnational advocacy networks, social entrepreneurship, marketing as well as organizational branding and legitimacy. [23] Despite these advances, however, the use of an organizational perspective to study terrorist recruitment remains substantially underdeveloped.

To address this issue, the current study relies on organizational life-cycling (OLC) theory to examine variation in human capital needs among extremist organizations. Research focused on OLC has made considerable empirical advancement by modeling what happens to organizations as they age and gain stakeholder support. [24] In general, OLC models suggest that organizations progress through a number of different transitional stages over time. [25] While there is no straightforward evidence as to how many distinct stages an organization may experience, there is consensus among researchers that each stage is determined by contextual factors such as age, growth, and size. Researchers also agree that an organization's leadership will prioritize needs of the group based on these contextual factors. [26]

During transitional phases, organizations will inevitably encounter challenges that arise as a firm grows in size, age, and/or popularity. For example, while researchers have found that organizations do have some degree of discretion when dealing with institutional pressures such as growth and stakeholder support, [27] changes experienced by contextually similar organizations (e.g., those in the same industry) can result in commonalities in how disparate organizations respond. [28] In a similar way, it is well-established that the "talent pool" changes depending on the maturity of the firm and that more popular organizations are able to attract a greater number of talented applicants, which increases an organization's ability to be more selective in whom it hires. [29]

In light of these challenges, OLC theorists have identified some generic strategies across each transitional stage. [30] Of specific focus as it relates to propositions from Bloom and Hunter and colleagues are the human resource (HR) strategies organizations utilize to navigate these changes. [31] By HR strategies, we refer to the formal and informal practices used by an organization to resolve personnel problems. A common HR strategy is to align firm-specific resources in a way that gives the organization a competitive advantage. Dess and Lumpkin identified human capital as one of these firm-specific resources, which involves "individual capabilities, knowledge, skills, and experience of the company's employees and managers." [32]

For example, OLC researchers have found that newly formed organizations are less effective at research and development (R&D) activities because young firms lack an adequate number of employees to execute the mission of the organization, much less engage in long-range thinking required for R&D. In these situations, newly formed organizations can overcome a lack of production by conducting open recruitment and hiring minimally competent employees. Moreover, OLC researchers note the importance of formalizing an organizational identity for new firms and have found that identity formation initially plays a pivotal role in determining workforce composition. [33] In these situations, newly formed organizations are more likely to prioritize individual-level characteristics (e.g., age, race) that contribute to the organization's identity formation

process. For instance, a newly formed tech company may initially place a premium on appearing energetic and vigorous and as a result recruit younger applicants who project this sense of identity.

As the organization matures, however, recruiting shifts to align human capital needs in a strategically competitive way. For instance, mature organizations will modify recruitment strategies and aim to attract individuals who will enhance the organization's competitive advantage rather than hire unskilled employees because they match organizational identity needs.[34] If successful, these organizations will be able to produce firm-specific resources that are deemed valuable, rare, and difficult to imitate. From this perspective, a focus on specialization rather than individual-characteristics (e.g., gender, ethnicity) as a response to dominant strategic problems (e.g., need to make more sophisticated widgets) occurs predominantly among older, more mature organizations whose goal is to stay competitive by strategically aligning talent in a way that benefits the organization.[35]

Based on existing OLC theory, we hypothesize that older extremist organizations will contain a diversified workforce by making pragmatic assessments of their human capital needs and acquire members with specialized experience, expertise, and advanced training. We also hypothesize that older extremist organizations will possess a diversified membership population regarding age, race, ethnicity, and gender because these groups place a premium on expertise rather than individual-level characteristics. These observations lead us to the third and fourth hypotheses to be tested in this study.

H₃: Older extremist organizations are more likely to contain a membership population with experience, expertise, and advanced training.

H₄: Older extremist organizations are more likely to contain a membership population with an assortment of individual-level characteristics (e.g., gender, race, age).

In the next section, we outline the methodology and analytic approach used to answer our hypotheses. Following this section, we present results from the LEADIR dataset.

Methodology

Data Collection

The current study relies on data collected from the Leadership of the Extreme and Dangerous for Innovative Results (LEADIR) project.[36] The LEADIR dataset contains organizational and leadership data on extremist organizations active between 1970 and 2016. Organizational data were gathered using a historiometric approach, which involves the testing of hypotheses by applying quantitative techniques to qualitative data. [37] Historiometry is widely used in personality studies and social psychology[38] as well as industrial and organizational (IO) psychology[39] to examine historically notable instances of performance of people and organizations during their period of peak performance (e.g., Dean Simonton uses the approach to study Presidents during their terms in office).[40]

LEADIR relies on historical accounts described in open-source data gathered from academic and government sources (e.g., National Consortium for the Study of Terrorism and Response to Terrorism, Southern Poverty Law Center, Federal Bureau of Investigation, Mapping Militant Organizations), scholarly case studies (e.g., The Jamestown Foundation Militant Leadership Monitor, the West Point Counter Terrorism Center), and public-records databases (e.g., Lexis-Nexis). We also used primary documents from extremist organizations themselves, such as propaganda, videos, and websites run by the groups (e.g., all sources were queried and translated from the Open Source Center). Sources were evaluated on a credibility scale, comprised of items to assess internal validity (i.e., report quality, authorship credentials) and external validity (i.e., generalizability), allowing for statistical control of source quality.[41] As one indication of the depth and detail of the data collection, source material for organizations in LEADIR averaged fifteen pages of text or roughly 3,454 words per extremist group.

Information and data resources were gathered by graduate students with expertise in criminology, IO psychology, and information science and technology. Prior to data collection, researchers received 20 hours of training bearing on the nature of ideological organizations, extremist recruitment, and their manifestation in the context of extremism as well as on search tactics and filtering information. This ensured that (a) all data were gathered from reputable sources; and (b) sufficient data were found for a variety of organizational characteristics (e.g., member demographics). The accuracy of the data was safeguarded through periodic “consistency checks” and any inconsistencies were discussed between raters and project managers. Data that were found to be conflicting between sources were further investigated, with information from academic and government resources being the primary sources to determine the final ratings for each of the indices assessed.

In accordance with best practices in historiometric methods,[42] organizational data were collected for specific time spans termed “period of peak performance” in order to ensure enough data was able to be reliably collected from archival records. This period was characterized by (a) consistent organizational performance (e.g., executing attacks); (b) the largest period of growth in terms of membership and/or financing; and (c) relative stability of organizational structure and leadership. The benefit of this strategy is that it ensures that sufficient and reliable data are being collected, coded, and used in subsequent analyses as extremist organizations tend to have the most written about them during their peak performance years. The drawback is that the period of peak performance is not universal and often differs between extremist organizations. Furthermore, any given extremist organization often ebbs-and-flows in their level of activity and determining their specific period of peak performance can be difficult. To mitigate this issue, subject matter experts (SMEs) with ten or more years of domain expertise in terrorism research were consulted for groups without a clear period of peak performance. These criteria (i.e., multiple credible sources, agreed upon period of peak performance) resulted in 105 extremist organizations for inclusion in the present study.

Coding Strategy

After data collection, a research team consisting of subject matter experts (SMEs) in extremist organizations developed behaviorally anchored rating scales (BARS) for organizational predictors.[43] These scales included operational definitions with readily observable and concrete examples as a reference point to facilitate reliable, valid ratings for each category of variables (i.e., organizational characteristics, performance-related constructs, and source controls) and were developed with the same practices used in psychometric test development.[44] The development of BARS requires an initial oversampling from the population of interest to identify low, moderate, and high behavioral examples of a given construct. We oversampled by 10%, and then randomly selected 10% of that sample to *a priori* identify benchmark behaviors to exemplify constructs.[45] These illustrative examples provide a sample-bound reference for raters to use in assessing organizational constructs relative to those of other outstanding groups. This approach is commonly employed in the use of historical records to examine organizational behavior.[46] These BARS were also defined, iteratively reviewed, and edited to ensure clarity, parsimony, and uni-dimensionality.

The central purpose of this methodological approach is to reliably assess organizational constructs of interest across independent raters based on SME-generated benchmarks to increase the validity of inferences drawn from the historical records of interest.[47] A benefit of this approach is that it takes into account the context in which each organization conducted affairs, and because of the depth of the investigations, the data are often quite rich. More importantly, as opposed to cross sectional research (e.g., one-time interviews, surveys), historiometric approaches allow us to examine the sustainability of performance.[48] Because the approach itself is rooted in the historical significance of these organizations, examining the lasting (and sometimes non-lasting) effects of their decisions provides researchers with a time-tested gauge of performance.[49]

To assess reliability among judges, raters coded 10% of the sample independently, resulting in an interrater reliability of $\alpha = .93$, which is much higher than the accepted appropriate interrater reliability with historiometry ($\alpha = .80$).[50] Ratings were then averaged across independent judges to lessen the likelihood of spurious errors in any one individual's scores.

Sample

Table 1 presents descriptive statistics for extremist organizations in our sample. As illustrated, organizational size of these groups varies from less than 100 to over 10,000 members. Organizational size is an ordinal scale of the membership used to assess the number of individuals that contribute to the group’s overall strength. As noted previously, membership data for each of these organizations were collected during the group’s period of peak performance, which is defined by the period in which the organization was most active. Given that best practices in studying organizations via historiometry requires an examination of groups during their period of peak performance, [51] figures relating to organizational size may be slightly elevated. Despite this concern, the rich open-source data gathered during the organizations’ periods of peak performance provide important insights pertaining to these groups that could not have been gathered through other approaches.

Among these organizations, religiously motivated groups accounted for half of our sample (50.0%) followed by ethno-nationalist (43.8%), left-wing (25.7%), and right-wing (13.3%) groups. These ideological clusters are not mutually exclusive and more than a quarter (28.3%) of the extremist organizations were classified in multiple categories. For example, the Kurdistan Workers’ Party prescribes to both ethno-nationalist and left-wing ideological beliefs.[52] Finally, in terms of region of operations, the current sample is diverse with organizations located in six out of the seven continents. With that said, most organizations operated in the Middle East and North Africa (26.7%), South Asia (19.0%), Western Europe (16.2%), and North America (15.2%).

Table 1. *Sample Characteristics (n = 105)*

Variable	n	%
Organizational Size		
1-99	28	26.7%
100-999	30	28.6%
1,000-9,999	29	27.6%
10,000+	18	17.1%
Ideology		
Religious	53	50.0%
Ethno-nationalist	46	43.8%
Left-wing	27	25.7%
Right-wing	14	13.3%
Region of Operation		
Middle East and North Africa	28	26.7%
South Asia	20	19.0%
Western Europe	17	16.2%
North America	16	15.2%
Sub-Saharan Africa	10	9.5%
Southeast Asia	5	4.7%
South America	5	4.7%
Eastern Europe	2	1.9%
East Asia	2	1.9%

*Note: Ideology does not add up to 100% because these categories are not mutually exclusive.

Independent Variables

To examine whether older and more popular extremist organizations vary from younger and less reputable organizations in regard to human capital needs, we selected the following independent variables: organizational

age and public support.

Organizational age is an estimate of the total number of years an organization was in existence. As Miller notes, operationalizing the age of terrorist organizations can be difficult considering how often groups rebrand by changing their name or form and break up alliances.[53] Furthermore, defining the year in which a group ends is often problematic, especially when an extremist organization contains weak organizational boundaries or competing performance goals. As such, we calculated organizational age as the number of years (in whole numbers) that have elapsed between the year in which the group was founded and the year they ended, inclusive of the year of founding. If the group is still active, we used the last year data were collected (i.e., 2016).

In terms of the current study, extremist organizations that underwent a rebranding effort were only considered “new” if the change had a substantive impact on the extremist organization’s mission. For example, we argue that the Islamic State “began” in 2004 when then leader, Abu Musab al-Zarqawi, pledged alliance to Osama bin Laden and formally became al-Qaeda in Iraq (AQI). Prior to the rise of the Islamic State, al-Qaeda was (and still is) the dominant brand among global Jihadi groups. Thus, al-Zarqawi’s pledge of alliance had significant implications for their recruitment and fundraising beyond what was available to Tawhid and Jihadi – AQI’s name before becoming an al-Qaeda franchisee. The same could be said for other al-Qaeda affiliates such as al-Qaeda in the Islamic Maghreb (2007-2018) and al-Qaeda in the Arabian Peninsula (2009-2018).

For extremist organizations which are currently inactive, we drew from source material as well as incident-level data to determine when each organization ended. We agree with Miller’s assertion that the sole use of incident-level data is not optimal for determining when an extremist organization ended, particularly for those groups which oscillate between periods of violence and non-violence.[54] In light of these concerns, quality control checks were conducted among raters and SMEs to avoid inflating the ages of extremist organizations whose ideology may still exist but which do not advocate violence. Similar protection measures were conducted for groups which have largely disbanded only to resurface under the same or a similar name later. For example, the Army of God (1982-2001), the Red Brigades (1969-1988), November 18 Revolutionary Organization (1975-2002), and the Armed Revolutionary Nuclei (1977-1988) are all examples of groups that underwent SME adjudication of age.

In terms of the current analysis, organizational age was recoded into a 4-point categorical variable reflecting the total number of years an extremist organization was in existence. The four categories are as follows: 1) newly formed = 1-5 years; 2) up-and-coming = 6-18 years; 3) experienced = 19-32 years; and 4) veteran = 33+ years. The age ranges coinciding with each category were developed using the mean (19.52) plus or minus one standard deviation (14.06) and remaining values were used to represent extremist organizations at both extremes. Table 2 indicates that 14 extremist organizations were classified as “newly formed” (13.3%), 48 as “up-and-coming” (45.7%), 23 as “experienced” (21.9%), and 20 extremist organizations were classified as “veteran” (19.0%).

The average age of the organizations in LEADIR was approximately 19.52 years old (SD = 14.06). Based on our sample, organizational age is rather high considering most extremist organizations do not last this long. In fact, Rapoport suggests that most terrorist groups last less than one year.[55] Recall, however, that our focus is on “successful” extremist organizations based on the theoretical postulations set forth by Bloom and Hunter and colleagues,[56] which largely excludes extremist groups which lasted less than one year. Furthermore, Philips has recently suggested that terrorist groups are more durable than conventional wisdom suggests.[57]

Our second independent variable is *public support*, which reflects the degree to which some or all of the public support the organization’s mission, tactics, media reputation, or actions. Indicators of high public support included non-coercive backing such as contributing material support (e.g., money, weapons), publicly displaying sympathy, and claiming allegiances (e.g., social media followership, exhibiting organizational flags or logos) or concentrating government aid toward the group. Alternatively, low levels of public support involved a lack of social acceptance (e.g., social stigma, protests) or coercive support such as imposing taxes or tariffs on citizens or mandating participation in the organization (e.g., Boko Haram). Using a 3-point categorical variable ranging from 1 (*very limited to no public support*) to 3 (*high public support*), raters coded each extremist

organization indicating the amount of public support in their favor during their period of peak performance. For example, the Japanese Red Army received a low public support rating because its leaders were not effective in gaining wide-spread sympathy for their organization’s mission. As Table 2 illustrates, 46 (43.8%) extremist organizations were classified as having “little to no public support,” 30 (28.6%) as a “moderate public support,” and 29 (27.6%) extremist organizations were classified as having a “high public support.”

Table 2. *Frequency Distribution of Key Variables*

Variable	n	%
Organizational Age		
Newly Formed	14	13.3%
Up-and-Coming	48	45.7%
Experienced	23	21.9%
Veteran	20	19.0%
Public Support		
Low	46	43.8%
Moderate	30	28.6%
High	29	27.6%
Deep-Level Diversity		
Low	17	16.2%
Below Average	36	34.3%
Average	23	21.9%
Above Average	16	15.2%
High	13	12.4%
Surface-Level Diversity		
Low	19	18.1%
Below Average	38	36.2%
Average	25	23.8%
Above Average	16	15.2%
High	7	6.7%

Dependent Variables

To examine whether older and more popular organizations differ from younger and less reputable organizations in regard to human capital needs, we selected the following dependent variables: deep-level diversity and surface-level diversity.

Deep-level diversity is a 5-point Likert-type scale reflecting the degree to which an extremist organization’s membership is categorized by an assortment of individual characteristics including educational background, wealth, and/or specialized skills such as weapons or religious training. One indicator of deep-level diversity included the degree to which organizations engaged in attacks demanding a high level of expertise or advanced training. For example, the level of technical skill required for driving a truck through a crowded street or shooting people in a populated area is considered low, whereas complex attacks involving improvised explosive devices (IEDs) or flying a hijacked plane are considered high.[58] As a method of triangulation, we also coded the level of tactical diversity demonstrated by the organization.[59] Tactically diverse organizations are more likely to have the necessary human capital to execute different types of violence (e.g., shootings, bombings, hijackings, kidnappings), while groups with low levels of tactical diversity are likely pulling from a limited membership base.[60] The Global Terrorism Database (GTD) offered comparable quantitative data on both the types of weapons and type of attacks employed by each organization.[61] Whenever possible, we triangulated data with government, media, and thinktank reports (e.g., Militant Leadership Monitor) that profile individual members

of extremist organizations in our sample.

Overall, deep-level diversity ranged from 1 (*organization recruits any person regardless of skillset*) to 5 (*organization actively recruits individuals based on specialization*). Table 2 indicates that 17 (16.2%) extremist organizations were classified as low on deep-level diversity, 36 (34.3%) as below average, 23 (21.9%) as average, 16 (15.2%) as above average, and 13 (12.4%) extremist organizations were classified as high on deep-level diversity. Taken together, a little over half (50.5%) of the extremist organizations in our sampled scored below average on deep-level diversity as compared to just over one-fourth of our sample (27.6%) that were classified as above average.

Surface-level diversity is a 5-point Likert-type scale reflecting the degree to which an extremist organization’s membership is heterogeneous in terms of individual-level traits such as race, age, gender and/or ethnicity. Responses ranged from 1 (*organization is homogeneous and adheres to strict codes regarding racial, religious, or ethnic status*) to 5 (*organization is heterogeneous and is welcoming of individuals with assorted racial, religious, or ethnic backgrounds*). For example, the Liberation Tigers of Tamil Eelam received a high surface-level diversity rating because they actively recruited members of a variety of ages and welcomed both male and female members. Table 2 indicates that 19 (18.1%) extremist organizations were classified as low on surface-level diversity, 38 (36.2%) as below average, 25 (23.8%) as average, 16 (15.2%) as above average and 7 (6.7%) extremist organizations were classified as high on surface-level diversity. Taken together, 54.3% of our sample was classified as below average on surface-level diversity.

Statistical Analysis

To examine the relationship between our independent (i.e., organizational age and public support) and dependent variables (i.e., deep-level diversity and surface-level diversity), we used between subject analysis of variance (ANOVA). A Scheffe post hoc test was then employed to probe for the sources and direction of differences between extremist organizations.

Results

As a preliminary diagnostic assessment, we employed a Levene’s test to assess potential violations of the homogeneity of variance assumption. All four Levene’s tests produced a non-significant F-statistic ($p > .01$), which indicated that heterogeneity of variance was not problematic. As illustrated in Table 3, results obtained in the analyses of variance highlight four noteworthy trends. First, as expected, public support was found to share a significant relationship with the degree of deep-level diversity among extremist organizations $F(4, 102) = 15.88, p \leq .001$. Post-hoc analysis indicated notable differences between organizations with the lowest levels of public support and those with the highest levels of public support. Specifically, extremist organizations with low levels of public support were found to contain lower levels of deep-level diversity, whereas extremist organizations with higher levels of public support displayed significantly higher levels of deep-level diversity ($M = 2.17$ vs. $M = 3.66$). These observations support hypothesis 1: *Popular extremist organizations are more likely to contain a membership population with experience, expertise, and advanced training.*

Table 3. Analysis of Variance

Variables	Deep-Level Diversity			Surface-Level Diversity		
	MS	F	E	MS	F	E
Organizational Age	17.57	15.87***	0.32	6.20	5.25**	0.14
Public Support	19.54	15.88***	0.24	9.26	7.91**	0.13

Note. *df* organization age (1, 101), *df* public support (1, 102). *E* reflect effect size using Cohen’s (1988) formula; ** $p < .01$ *** $p < .001$

This finding is in line with prior research focusing on the cyclical nature of organizational popularity and extremist activities (e.g., recruitment, branding, attacks).[62] Based on this framework, increased popularity

leads to sustainable performance, which in turn, leads to more popularity. To ensure sustainable performance over time, extremist organizations have been found to “up-skill” their workforce by recruiting highly qualified members.[63] A common method used to attract highly qualified recruits is to depict the organization as capable of providing meaningful opportunities as well as highlighting military prowess and organizational legitimacy.[64] Web-based approaches such as social media (e.g., Facebook, Twitter) and video exchange sites (e.g., YouTube) are well suited for developing such an image as they can reach a wide audience and present information in a tailored way.[65] For instance, in a review of YouTube videos posted by The Islamic State of Iraq and the Levant (ISIL), Dauber found images that projected meaningful jobs with orderliness, training, and resources.[66] Moreover, in an examination of ISIL’s social media output, Zelin found that ISIL often highlights its social services as well as “the great life one can live under the Caliphate, especially by foreign fighters.” [67] The mixture of organizational popularity, operational success, and effective branding creates a need for more qualified recruits that helps ensure sustainability over time when conducting highly destructive acts of terrorism.

Second, public support was also found to share a significant relationship with an extremist organization’s surface-level diversity of members $F(4, 102) = 7.91, p \leq .01$. Specifically, extremist organizations with low levels of public support were found to have more homogenous memberships in terms of observable differences, whereas extremist organizations with high levels of public support had more heterogeneous memberships ($M = 2.13$ vs. $M = 3.14$). This observation supports hypothesis 2: *Popular extremist organizations are more likely to contain a membership population with an assortment of observable individual-level characteristics (e.g., gender, race, age).*

As outlined by Hunter and colleagues, extremist organizations make pragmatic assessments of their human capital needs and modify operating standards based on environmental and organizational conditions.[68] For example, even the most patriarchal terrorist groups have been found to allow women to serve as front-line fighters in times of need.[69] From this perspective, extremist organizations in the process of up-skilling their workforce may place expertise and organizational sustainability at a premium and overlook individual characteristics that may not adhere to the prototypical membership profile. In this way, irrespective of the individuals’ background characteristics (e.g., age, gender, race), extremist organizations understand the likelihood of operational success increases with more talented members. As a result, popular extremist organizations are more likely to contain a diversified workforce in terms of age, race, and gender in exchange for sustainable organizational success. Taken together, these two findings indicate that publicly supported extremist organizations are more likely to contain members with high expertise and training and are also more likely to welcome qualified individuals whose surface-level characteristics (e.g., age, race) may not adhere to the standard of their ideal membership.

Third, similar observations were obtained regarding organizational age and deep-level diversity. Based on the data, older extremist organizations contained membership populations with more expert, specialized affiliates, $F(2, 101) = 15.87, p \leq .001$. In general, differences regarding organizational age and deep-level diversity were most prominent between the “newly formed,” “experienced,” and “veteran” extremist organizations ($M = 1.64$ vs. $M = 3.00$ vs. $M = 3.95$). Specifically, younger extremist organizations were found to attract less talented members compared to the highly specialized skillsets and backgrounds found among older extremist groups. Apparently, older extremist organizations, regardless of surface-level characteristics (e.g., age, race, ethnicity), contained members with more education and training. These observations support hypothesis 3: *Older extremist organizations are more likely to contain a membership population with experience, expertise, and advanced training.*

This finding further supports Bloom’s argument pertaining to the Provisional Irish Republican Army’s (PIRA) decades long expansion, selective recruitment operations, and the establishment of command and control structures throughout the latter part of the twentieth-century.[70] In particular, PIRA’s recruitment operations were aimed at college students with advanced educational degrees in STEM-related fields (science, technology, engineering, mathematics). As Bloom explains, this approach is in stark contrast to younger extremist organizations which cast as wide a net as possible and accept any recruit, regardless of their professionalism or experience.[71] Moreover, this finding supports prior research pertaining to al-Qaeda, an extremist organization

that has long been involved in insurgencies spanning from Africa to Southeast Asia over the past three decades [72]. For example, an operations document known as the *Manchester Manual* lists 14 different desirable assets that characterize a prospective jihadi member such as intelligence, ability to observe and conceal oneself, as well as maturity and a willingness to make sacrifices.[73] Along these lines, recently declassified documents recovered from Osama bin Laden's former compound revealed that al-Qaeda recruits were asked to provide information on relevant experiences and expertise such as their proficiency in foreign languages, previous occupations, and relevant military experience.[74] Taken together, these lines of research complement our quantitative findings by indicating that older, more experienced extremist organizations assess their human capital needs and target recruits with advanced training and expertise.

Finally, significant differences were identified between the youngest extremist organizations and the oldest organizations with regard to surface-level characteristics $F(2, 101) = 5.25, p \leq .01$. Specifically, older extremist organizations were more likely to contain members with diverse backgrounds in terms of race, ethnicity, and/or age. Based on our results, "veteran" extremist organizations were identified as containing the most diversified membership populations ($M = 1.93$ vs. $M = 2.38$ vs. $M = 2.70$ vs. $M = 3.30$). This observation supports hypothesis 4: *Older extremist organizations are more likely to contain a membership population with an assortment of individual-level characteristics (e.g., gender, race, age).*

Based on structural inertia theory,[75] as organizations age they invest in stable technologies and gain other resources that develop dense social networks.[76] If we apply this framework to extremist organizations, as these groups age and invest in stable technologies such as web-based and social-media methods (e.g., Twitter, Facebook, YouTube), these groups would expect to see a "return" on their investments in the form of dense social networks.[77] ISIL, for example, has been found to use web-domains and automated mechanisms (i.e., "bots") to disseminate their messages in a coherent, layered fashion.[78] These methods allow organizations to attract a larger pool of potential recruits from a wider range of demographic backgrounds. The benefit of this approach is that extremist organizations increase their chances of operational success by connecting with more talented recruits and simultaneously poaching talent away from competitors.[79]

Discussion

In recent years, terrorism scholars have proposed that extremist groups, like conventional organizations, make pragmatic assessments of their human capital needs and modify operating standards to acquire members with advanced training and expertise (e.g., medical, religious, or military training) that may help the group achieve organizational objectives.[80] Relying upon data from 105 extremist organizations gathered throughout the Leadership of the Extreme and Dangerous for Innovative Results (LEADIR) project, the current study provides empirical support for these propositions. In particular, our findings point to two conclusions. First, in support of Bloom's argument, more popular extremist organizations tend to contain highly diversified membership populations in terms of education, training, and skill sets. The mixture of organizational popularity, and operational success creates a need for more qualified recruits that helps ensure sustainability over time while engaging in terrorist campaigns. Second, our results support Hunter and colleagues' claims that older, more established extremist organizations prioritize specialization, and as a result, recruit members with skills that will benefit the organization irrespective of their demographic backgrounds. In doing so, these organizations diversify their workforce, sustain operational functioning, and increase their competitive advantage.

These findings are important for at least four reasons. First, this study innovatively compares extremist groups to uncover variation at the organizational level. While terrorism scholars have examined radicalization processes and developed models to explain individual-level variation, far less attention has been aimed at understanding organizational-level variation. Our review of the literature indicates that this is one of first studies to conduct such a comparison.[81] Instead of adopting a "one-size fits all" approach toward extremist organizations, the current study draws special attention to the dynamic nature of extremist groups and highlights the importance of exploring heterogeneity between these collectives. In particular, while extremist organizations contain similarities that bring them together (e.g., political or religious grievances), these groups also possess unique

organizational factors that differentiate them from one another (e.g., level of expertise, network density, selection criteria, demographic composition).

Second, despite previous efforts to apply organizational perspectives to the study of terrorism, this framework remains substantially underutilized among terrorism scholars. To address this issue, the current study relied on organizational life-cycling theory to examine variation in human capital needs among extremist organizations. In doing so, the current investigation highlights overlap between violent extremist groups and industrial and organizational psychology. For instance, while there are numerous pressures that uniquely impact an organization's overall performance, both extremist groups and conventional legal organizations respond to internal (e.g., membership growth and decline) and external pressures (e.g., competition for resources and legitimacy). One takeaway from this study is that, like conventional organizations, the greater the number of quality recruits interested in joining an extremist organization, the better the talent pool these groups have to pursue organizational objectives.

Third, scholars often debate about the effects of organizational age on violent performances.[82] While some scholars have found that older organizations are more likely to be more violent because they learn from past experiences and acquire knowledge that increases chances of successful violent performances,[83] other researchers have found that organizational age does not have an effect or has an inverse effect on violence. [84] Findings from the current study add to this debate by highlighting variation in human capital among older and younger extremist groups. Specifically, we found that older extremist organizations contain highly qualified members with training and tactical expertise, which allows these groups to engage in more complex attacks and execute a wide range of actions (e.g., shootings, bombings, hijackings, kidnappings). From this perspective, in addition to overcoming organizational setbacks, older extremist organizations "up-skill" their workforce, and therefore, increase chances of successful violent performance and sustainability.

Finally, while the focus of the current study tends to favor a "top-down" recruitment strategy, there are important theoretical implications for a "bottom-up" approach. In recent years, emerging insights into the recruitment processes of al-Qaeda and ISIL demonstrate a selection component. Specifically, these organizations have been found to determine whether a recruit has unique skills such as engineering or computer programming versus whether he/she is better suited for combat. While consideration of an individual's background qualifications are critical in the selection process, placement is often based on environmental and organizational demands. [85] For instance, while officially enlisting as an ISIL recruit in Suluk, Syria, former Columbia University student Mohimanul Alam Bhuiya advertised his "clever... technical knowledge" and hoped to plan attacks that would "break down aircraft" but was rather assigned as a front-line operative.[86] From this perspective, although highly qualified recruits may seek out and enlist into extremist organizations, these individuals might be assigned to serve in a capacity below their training because this role best serves the immediate human capital needs of the group.

In terms of policy, knowing where an organization is situated in its lifecycle can give clues as to which individuals are most vulnerable to recruitment. Based on prior research, there is a growing concern that extremist organizations are increasingly focused on recruiting younger individuals.[87] This demographic is especially vulnerable to organizations that portray themselves as capable of providing a stronger sense of self and purpose. In recent years, governmental and non-governmental efforts have focused on disrupting recruitment processes via counter-messaging campaigns. Since our findings indicate extremist organizations may favor talented individuals who possess advanced educational degrees in science, technology and engineering and prior research highlights the role of cyber-mediated recruitment strategies,[88] we recommend that counter-messaging strategies should be tailored toward younger, highly educated individuals (e.g., experts in software programming, aviation, or engineering) who utilize cyber communication devices. Moreover, according to source credibility theory,[89] the origin of these messages are just as important as content of the message. From this perspective, in addition to targeting highly educated youth, counter-messaging strategies should originate from highly credible sources whom technically skilled individuals hold in high regard (e.g., other technically expert individuals). In this way, using tailored strategies to disrupt recruitment processes may increase counter-messaging viability and effectiveness.

Despite these contributions, several limitations related to this study are important to bear in mind. First, although studies relying upon open-source data have come to play important roles in terrorism research, secondary data have the potential of reporting inaccurate, biased or false information, or are tainted by government censorship and disinformation.[90] It is important to note that in the present effort, however, researchers employed a historiometric technique to overcome source credibility limitations, and this technique is used successfully in a wide variety of other literatures that examine outstanding or unique organizational phenomena.

Second, it is important to note that certain ideological motivations have a role in extremist recruitment strategies. For instance, a variety of ethno-national extremist groups (e.g., National Alliance) are unlikely to target and select individuals who do not adhere to specific individual characteristics (e.g., race, religious denomination, ethnicity), regardless of their expertise and training.[91] In these situations, it is possible to see a divergence from the talent spotting or headhunting recruitment strategies previously theorized because membership is predicated by rigid ideological convictions (e.g., Ku Klux Klan's slogan of "100 percent American"). Thus, future studies should examine these types of groups to determine how they manage these stringent individual-level selection criteria when searching for highly qualified members.

Finally, while we were unable to examine organizational changes over time, the current investigation represents a key step forward in moving beyond case study approaches that investigate a single group or small number of organizations. In doing so, we provide empirical support that suggests differences in human capital across extremist organizations. Given that best practices in studying organizations via historiometry requires an examination of groups during their period of peak performance,[92] we examined these groups at the pinnacle of their extremist reigns. From a developmental standpoint, this is likely when the organization's most prototypic mode of performance will manifest itself. From a pragmatic and scholarly standpoint, we have also found that this is when the organization is "watched" the most. Studying organizations during their period of peak performance may yield the most information about organizational style and contextual influences associated with this behavior as more academic biographers and journalists are likely to record events during this period.

In terms of future research, we think it is important to examine the interaction between extremist recruitment techniques and individual life-history characteristics. To date, psychological models of radicalization have been primarily individual-focused. They emphasize the cognitive and emotional processes that motivate individuals' involvement in extremism.[93] At the same time, researchers have found that extremist recruitment strategies are often tailored around themes of organizational legitimacy intended to highlight strong leadership style, strategic branding, and consistent ideological messaging.[94] An investigation that examines the interaction between consumption (i.e., individual) and messaging (i.e., extremist recruitment strategies) could eventually be used to enhance our understanding of how extremist organizations capitalize on individual vulnerabilities and predispositions.

Moreover, in the case of extremist organizations, there are numerous pressures that uniquely impact an organization's overall life-cycle and these factors rarely occur in isolation. While the primary focus of this study was on the role of age, public support, and human capital, it is unlikely these are the only factors affecting extremist activities. Rather, organizational characteristics such as leadership style, fundraising, and marketing vary widely from organization to organization, and even within organizations there is often a great deal of variation. As a counterpoint, it is possible our findings regarding public support may also be influenced by regional demographics. For instance, extremist groups like the Taliban often draw from unskilled labor pools to fill their ranks, which might contrast with other groups who have access to better qualified and educated recruits. Moreover, due to the fact that extremist groups have been found to provide training for new members,[95] higher rates of bomb-making experts, suicide bomber handlers, and financial experts among older extremist organizations may be influenced by "on the job" training.[96] Future research should examine these issues as well as investigate other factors that may influence recruitment strategies and the selection of specialized recruits.

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