The Three Ps of Radicalization: Push, Pull and Personal. A Systematic Scoping Review of the Scientific Evidence about Radicalization Into Violent Extremism

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ABSTRACT

In this article, we present the findings of the first systematic scoping review of scientific literature on radicalization into violent extremism since the Al Qaeda attacks on 11 September 2001. We selected and categorized all scholarly, peer-reviewed, English-language articles published between 2001 and 2015 that empirically investigated the factors of radicalization into violent extremism ($N = 148$). In the analysis we consider two main dependent variables (behavioral and cognitive radicalization) and three main independent variables (push, pull, and personal factors). "Pull" factors of radicalization emerge as the main factors of radicalization across studies focused on different geographical areas and ideologies. This article points to the need to focus more on the interaction between push, pull, and personal factors, and to diversify the methodologies used in the field.

The reasons why people participate in violent extremism, and engage with movements employing the violent methods of terrorism, remain a matter of contention, with scholars struggling to arrive at a consensus about the basic mechanisms of radicalization. A substantial body of research has been published on the issue since the 11 September 2001 (9/11) attacks in 2001, but only a small number of systematic reviews of the substantive knowledge on the topic have so far been attempted in books[1] and research reports.[2] And even then, despite representing important steps toward the understanding of the field, those reviews generally do not meet the standards for methodological transparency and replicability. For example, in many reviews coding occurred with no mention of inter-coder reliability, and the reported findings tended to be cherry-picked without sufficiently transparent criteria.

Remarkably, given the volume of scholarly articles published, only a handful of systematic review articles about the factors of radicalization into violent extremism and terrorism have been published in scientific journals, where they have undergone a more formal peer-review process to meet scientific standards. Relevant among these are the excellent (although technically unsystematic) narrative reviews of specific subfields like

suicide bombing and domestic terrorism, and Borum's and Victoroff's reviews of the existing theories that explain radicalization into violent extremism.[3] To our knowledge, the only articles that provide a truly systematic quantitative overview of the scientific knowledge about the causes of terrorism are Campana and Lapointe's systematic scoping review of the literature about root causes of non-suicide terrorism,[4] and Jacques and Taylor's review of the literature about female terrorism.[5] To date, there has been no comprehensive systematic review of the scientific studies that looked at radicalization into violent extremism.

One main obstacle to conducting systematic reviews of this issue is the ambiguity of key terms such as radicalization and extremism, which by their very nature identify a relative position on a continuum of opinions and behaviors. Depending on the context, the line that defines an extremist/radical opinion or behavior from a moderate/legitimate opinion or behavior can be drawn at different points in the continuum. Moreover, structural and circumstantial factors (such as the agendas of governments and security agencies) influence the definition of those terms in different circumstances and for different institutions, potentially creating conflicting classifications. Ultimately, radicalization and extremism remain ambiguous and contested concepts and sources of confusion,[6] to the point that some scholars even deny that radicalization exists.[7]

At the same time, however, it needs to be remembered that the definitions of virtually all phenomena of political significance are problematic and contested, including such fundamental concepts as nationalism, revolution, empire, and colonialism.[8] Just as it is possible, and indeed, necessary, to research these issues despite their problematic nature, so too "radicalization" and "extremism" represent phenomena too important to ignore. And, as this article sets out to demonstrate, some significant lines of consensus and important findings have emerged in the scientific literature of the past decade and a half since the 9/11 attacks made terrorism a central issue of our times.

As Sedgwick and Neumann noted, common usage of the term radicalization in the academic literature emerged following the 9/11 terrorist attacks, but the term became only widely used after 2005.[9] This period corresponds to what Pape defined as the second wave of terrorism studies, which has been characterized by more sophisticated methodologies, more complex theories, and more attention to the causes and the consequences of the terrorism.[10] At the same time, the second wave, for all its promise, has also been criticized for having been unable, as yet, to fully develop as a mature scientific approach.[11]

This article reviews and consolidates the scientific knowledge produced between 2001 and 2015 regarding radicalization into violent extremism, and it aims to address very basic descriptive questions such as: which areas are most under-researched and why? What factors are universal in predicting radicalization into violent extremism across ideologies and geographical contexts? What are the main methodological biases that researchers should be aware of? This article is intended to be a systematic scoping review,[12] in that it addresses a broad topic (the causes of radicalization into violent extremism), and a comprehensive range of publications, including diverse study designs of varying quality and methodological transparency. This diversity and methodological flexibility poses important challenges to the achievement of an objective review of the

field. This will be discussed at some length in the methods and limitation sections of this article.

At a time where numerous studies of various quality are published each month, this review is a valuable exercise to map this field of research. It provides a general picture of the progress made, the knowledge aggregated and consolidated so far, the main pitfalls, and the challenges ahead.

Scope and Structure of the Review

This review study focuses exclusively on the radicalization into violent extremism, a matter of immediate concern to states and communities. The definition of radicalization into violent extremism generally refers to the path that leads an individual to endorse or commit a politically motivated act of violence (e.g., terrorism, kidnappings, assassinations).[13]

This article distinguishes between two different types of radicalization into violent extremism. Specifically, it conceptually separates the studies that focus on *behavioral radicalization* (which focuses on an individual's engagement in violent action) and *cognitive radicalization* (which focuses on an individual's adoption and internalization of violent and extremist beliefs). The two generally go together but many people behaviorally radicalize without a correspondingly significant degree of cognitive radicalization and vice-versa.

We considered a wide range of factors as predictors of radicalization, which, in order to make analytical comparisons possible, we grouped in three broad categories: push, pull, and personal factors. "Push factors" overlap with the structural root causes of terrorism that drive people toward resorting to violence,[14] and include, for example, state repression, relative deprivation, poverty, and injustice (please see the methods section for a more comprehensive list). "Pull factors" capture the aspects that make extremist groups and lifestyles appealing to some people, and include, for example, ideology, group belonging, group mechanisms, and other incentives. "Personal factors" include related but more specifically individual characteristics that make certain individuals more vulnerable than their circumstantially comparable peers to radicalization. This includes for example psychological disorders, personality traits, and traumatic life experiences. We acknowledge that certain psychological disorders (such as depression) can certainly develop in conjunction with, or even as a result of, the radicalization process (e.g., because of the isolation from primary ties), but the studies that focus on personal factors generally look at those disorders *preceding* radicalization and often in conjunction with other structural and group-level mechanisms.

In reality, push, pull, and personal factors are all closely interrelated. Push factors, which identify contextual and structural conditions, often can be the root cause of both pull and personal factors. For example, structural conditions (such as poverty) could contribute substantially to personal conditions (such as depression and low self-esteem) while simultaneously boosting the appeal of pull factors (like material incentives or the need to belong to a group). Moreover, we acknowledge that radicalization, for the most part, takes place in social settings, with "three-fourths of those who join the Islamic State or al-Qaeda" doing so in groups that "involve pre-existing social networks and

typically cluster in particular towns and neighbourhoods."[15] This means that factors such as the consumption of propaganda, narratives, or political grievances do not operate by themselves but rather have effect within specific social settings.

Notwithstanding the fact that they rarely occur in isolation, we also see the need to attempt a clear theoretical distinction between push, pull, and personal factors because they capture different levels of explanation of radicalization into violent extremism: push factors largely focus on structural, political, and sociological explanations; pull factors tend to focus on group-level sociocognitive explanations; and personal factors are concerned primarily with individual psychological and biographical explanations. Each of those levels is then associated with a different set of preventative measures and policies, which, in turn, tap into the political, socioideological, and psychological–medical spheres. This theoretical distinction between the three levels of analysis (macro, meso, and micro) is used in established theoretical approaches to analysis in the field of political violence and in cognate fields such as collective action studies. Examples include Kleinmann's distinction between individual-level, group-level, and mass-level factors of radicalization,[16] and Duncan's distinction between perceived injustice, identity, and efficacy and personality and life experiences as predictors of collective action.[17] We think Duncan's model of collective action is also a relevant benchmark because radicalization into violent extremism can been seen as a form of collective action.

Methods

Search

In April 2016 we searched for the keywords "radicali*ation" (in order to allow both American and English spelling) or "extremis*" in title, abstract, and keywords sections in the following databases: PsycINFO, PubMed, Sociological Abstracts, Web of Science, Worldwide Political Science Abstracts, EconLit, Embase, PAIS Index, and Scopus. We restricted the data range from 2001 to 2015, and we searched for articles in the English language. After eliminating the duplicates, we had an initial set of 6,335 items.

Data coding

Inclusion criteria

The first criterion for including articles in our review was relevance. We included only the articles that looked at the factors that explain why an actor (either individual or group) would support or engage in violent extremism. For example, we excluded the articles that focused on the polarization of opinions if not explicitly referring to support for violent ideas,[18] as well as mathematical models of opinion and behavior polarization. We also excluded articles that looked at the predictors of voting for extremist parties (i.e., at the extreme left and right of a country's political spectrum). This is because even though some political parties, such as, for example, Greece's Golden Dawn have been associated with violent militancy, voting and electoral participation belong in the domain of legitimate activities, and the focus of this review article is exclusively on the illegitimate activity of politically motivated violence. Moreover, descriptive articles that describe violent extremist ideas and behaviors without investigating the predictive

factors were excluded from the review.[19] In short, we exclusively included the articles that focused on explaining the factors that predict the dependent variables of interest: cognitive and behavioral radicalization into violent extremism.

The second criterion was being published in peer-reviewed scientific journals. We searched exclusively for journal articles that have undergone a formal review process. We therefore excluded books, book chapters, reports, theses, and other so-called "grey area" literature. We acknowledge that in doing this we have undoubtedly overlooked relevant work, but we are also confident that the articles that we have included meet standard criteria of quality and transparency that are not consistently found in gray area literature.

The third criterion was availability. We excluded articles that were in languages other than English and that were not publicly accessible from our university library access.

The fourth inclusion criterion was empirical evidence. We included all articles that presented empirical evidence about the radicalization factors, including original interviews, fieldwork, content analysis, original analyses of existing databases, and other open source data. We excluded theoretical articles that were based on literature review and research published elsewhere.[20] We also excluded articles that referred to empirical data from secondary sources that were collected unsystematically, without consistent transparency with respect to methodology for data collection and data analysis.[21] Nevertheless, some articles that analyzed primary sources (such as YouTube videos published by extremist groups) were included, even though the methodology of analysis was not completely transparent.[22]

To ensure that the exclusion/inclusion of the articles was done in a replicable way, three independent reviewers separately coded fifty articles. The results were then compared and any disagreements were discussed. We repeated the process until we obtained an agreement of 97 percent.

Independent variables

Our independent variables are comprised of three non-exclusive categories: push, pull, and personal. Push factors include: loss of legitimacy, geopolitical factors, state repression, relative deprivation, inequality, intergroup contact (e.g., the presence of different religious or ethnic group in the same space), violence (e.g., high level of violence such as a war). In our coding, push factors also include variables such as unemployment and education, because they capture the consequences of structural conditions on the individual.

Pull factors include: cognitive factors (e.g., consumption of propaganda, cultural congruence, perceived efficacy and morality of a group, search for adventure), social mechanisms and group processes (e.g., identity fusion and identification, group dynamics, recruitment, and leadership), and emotional and material incentives. We coded individual-level variables that refer to ideology and attitudes in this category: for example, the individual's consumption of the extremist group's propaganda was coded as a pull factor.

Personal factors include: individual psychological vulnerabilities independent of push and pull factors (e.g., mental health conditions, depression, trauma), personality traits (such as narcissism and impulsivity), and individually specific demographic

characteristics (e.g., age, gender, country of birth) that constitute subjective states that make the individual more vulnerable to extremism.

The inter-connectedness between push, pull, and personal factors poses an "operationalisation challenge": for example, unemployment could be seen as both a push and a personal factor, depending on whether the level of analysis is macro (looking at structural factors) or micro (looking at biographical availability or frustration). We coded as push factors all the factors that have been identified in the literature as "root causes" of terrorism, such as unemployment or poverty, even when they were investigated at a micro level of analysis. Only demographic (age, gender), biographical (substance abuse, criminal record) and psychological characteristics (like disorders and personality characteristics) have been coded as personal factors. We believe that this coding strategy represents a practicable approach to accurately reflecting the difference between researching the causes of radicalization in sociological forces versus psychological and individual paths, which although possibly related to structural forces, tend to express unique biographical journeys.

Dependent variables

Our dependent variables are comprised of two categories: cognitive and behavioral radicalization. Cognitive radicalization refers to studies that focus on an individual expressing support for violent extremist acts (e.g., terrorist attacks), people (e.g., Anders Breivik), and groups (e.g., Al Qaeda) that committed acts of violent extremism (e.g., terrorism). Behavioral radicalization refers to studies that focus on an individual committing an act of violent extremism (e.g., terrorism) or joining a violent extremist group (e.g., Islamic State of Iraq and the Levant or Al Qaeda).

Three independent reviewers coded each article's dependent and independent variables. To ensure the replicability of this process, each reviewer separately coded fifty articles, and the results were discussed and compared until reaching a satisfactory agreement (all Kappas $> .70$).

Finally, a more straightforward process of data extraction was conducted to identify unambiguous information such as the methodology used (i.e., qualitative, quantitative, mixed methods, social network analysis, and the use of control groups), the data sources (i.e., existing datasets like the Gallup poll or the Global Terrorism Database (GTD), original databases compiled with open sources, text analyses, original interviews, ethnographies), the focus on group versus individual radicalization, sample sizes and composition, geographical focus, focus on "lone wolves" and ideology (i.e., *jihadism*, far-right, or other ideologies).

Analytical approach

First, we present a quantitative descriptive overview of the information coded and extracted from the articles considered. Second, we provide a comprehensive qualitative description of the factors of radicalization that we encountered in each of the push, pull, and personal categories. Third, we conduct cross-tabulations and chi-square tests to examine whether there are significant differences in the proportions of different types

of radicalization factors across articles that focus on different geographical areas, ideologies, and research methods.

Data Analysis and Results

Descriptive statistics

Of the initial 6,335 articles, 79.1 percent ($n = 5,013$) were coded as not relevant, 3.1 percent ($n = 198$) were found not to be peer-reviewed journal articles, 1.4 percent ($n = 91$) were in a foreign language, 2.7 percent ($n = 173$) were not accessible, and 6.7 percent ($n = 422$) were not empirically based. The remaining 2.4 percent ($n = 148$) were included in this review. Figure 1 shows the distribution over time of the articles included in this review. Please refer to the Appendix for a full list of the articles included in this review.

As for the dependent variables, 77.7 percent ($n = 115$) of the articles focused on behavioral radicalization, and 22.3 percent ($n = 33$) on cognitive radicalization. As for the independent variables, the articles were distributed as follows:

- 25.0 percent ($n = 37$) had a combination of push and pull factors;
- 21.6 percent ($n = 32$) only pull factors;
- 17.6 percent ($n = 26$) a combination of pull and personal factors;
- 14.2 percent ($n = 21$) had a combination of push, pull and personal factors;
- 14.2 percent ($n = 21$) only push factors;
- 4.1 percent ($n = 6$) a combination of push and personal factors;
- 3.4 percent ($n = 5$) only personal factors.

Overall, pull factors are cited as a driver of radicalization in 78.4 percent of the articles ($n = 116$), push factors in 57.4 percent of the articles ($n = 85$), and personal factors in 39.2 percent of the articles ($n = 58$).
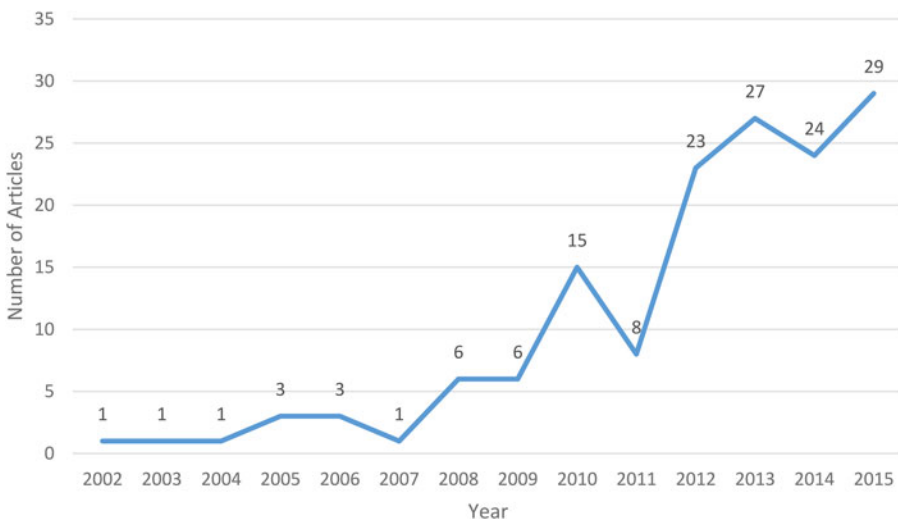

Figure 1. Distribution of the empirical articles over time (frequency of articles per year).

Additionally, we extracted the following information:

- Focus on group (32.4 percent, $N = 48$) versus individual (67.6 percent, $N = 100$) radicalization;
- Methodology; that is, qualitative (53.4 percent, $n = 79$), quantitative (39.9 percent, $n = 59$), mixed methods (6.1 percent, $n = 9$), social network analysis (0.7 percent, $n = 1$);
- Use of control groups (12.8 percent, $n = 19$);
- Data source (non-mutually exclusive); that is, existing datasets (12.8 percent, $n = 19$), original database compiled from open sources (12.8 percent, $n = 19$), text analysis (23.6 percent, $n = 35$), original interviews (54.1 percent, $n = 80$), ethnography (2 percent, $n = 3$);
- Sample size (only reported in some studies, $n = 64$), with a minimum of 1 and a maximum of 6,020 ($M = 577.53$, $SD = 1,385.27$);
- Sample composition (non-mutually exclusive): extremists (16.9 percent, $n = 25$), general population (23.6 percent, $n = 35$), experts (6.1 percent, $n = 9$);
- Geographical scope; that is, Europe, North America, and Australia (46.6 percent, $n = 69$), Middle East and Central Asia (12.8 percent, $n = 19$), Africa (5.4 percent, $n = 8$), Other (18.2 percent, $n = 27$), and multiple countries in a comparative perspective (16.9 percent, $n = 25$);
- Lone wolves (5.4 percent, $n = 8$);
- Ideological focus; that is, *jihadism* (53.4 percent, $n = 79$), far-right (18.9 percent, $n = 28$), other ideology (6.8 percent, $n = 10$), and multiple ideologies (20.9 percent, $n = 31$).

The push factors of radicalization

Within the eighty-five articles mentioning at least one push factor as a cause of radicalization, a variety of push factors were identified. The push factor that appears most often in the literature is the relative deprivation of a social group,[23] which has been also framed in terms of injustice,[24] inequality,[25] marginalization,[26] grievance,[27] social exclusion,[28] frustration,[29] victimization,[30] and stigmatization.[31] In the case of *jihadist* radicalization, numerous articles mention as a push factor the increasing frustration and sense of injustice derived from the aggressive foreign policies of Western states in Muslim majority countries, such as the Global War on Terror,[32] the war in Afghanistan,[33] Western attacks against the *ummah*,[34] Western colonization of Muslim-majority countries,[35] and more generally the perception of Western dominance in world politics.[36] The perceived threat to a group is mentioned as a push factor of radicalization in the context of right-wing extremism where the threat is couched in primarily racial terms[37] but some articles also mentioned threat perception as a push factor in the context of jihadist radicalization[38] and Jewish extremism.[39]

State repression is another push factor that is often cited, especially beyond Europe and North America in places such as India,[40] Israel,[41] the Middle East and North Africa,[42] Russia and post-communist countries,[43] Indonesia, and Tanzania.[44] In Western countries, the only articles that see state repression as a cause of radicalization

Table 1. Push factors by group/individual focus (frequencies and column percentages).

	Individual radicalization	Group radicalization
No push factors	47 (47.0%)	16 (33.3%)
Push factors in combination	45 (45.0%)	19 (39.6%)
Push factors alone	8 (8%)	13 (27.1%)
Total	100 (100%)	48 (100%)

X^2 (2, $N = 148$) $= 9.97$, $p = .01$.

are focused on left-wing anarchist groups in Denmark,[45] and *jihadist* radicalization in prisons in France[46] and Britain.[47]

Poverty is cited as a push factor of radicalization exclusively in qualitative articles that look at radicalization in Africa,[48] with the exception of one article that finds an association between low income and right-wing extremism in Russia.[49] The articles that focus on African radicalization also tend to mention corruption as a push factor of radicalization.[50]

One of the most frequently cited push factors of radicalization is unemployment.[51] The relationship between unemployment and radicalization is usually explained in two ways: first, unemployment can be a source of frustration that triggers individual's anger in combination with other factors.[52] Second, unemployment can be a factor indicating a biographical availability (i.e., more free time and more practical availability to recruitment into violent extremism).[53]

Level and type of education is another variable connected with push factor that is often cited as being a predictor of radicalization.[54] Education can be a predictor of radical opinions because lower levels of education are usually associated with less sophisticated and more black-and-white worldviews, which are a predictor of cognitive radicalization.[55] Being located within the educational system (and therefore having a higher level of education), however, is in some instances seen as a marker of biographical availability to terrorist recruitment.[56]

We tested whether push factors were more cited in articles that focused on one specific dependent variable. We found no statistically significant differences, with push factors being mentioned in 60.6 percent of the articles focused on cognitive radicalization and in 56.5 percent of the articles focused on behavioral radicalization.

Push factors are comparatively more cited as a driver of group radicalization than individual radicalization, even though they are also mentioned in about half of the articles about individual radicalization. Specifically, push factors alone are most frequently cited to explain group radicalization, and push factors in combination with pull and personal factors to explain individual radicalization (Table 1). The differences between groups were statistically significant, X^2 (2, $N = 148$) $= 9.97$, $p = .01$.

The pull factors of radicalization

In the 116 articles that discuss pull factors, the one that appears most is the consumption of extremist propaganda. This particular pull factor is mentioned as a cause for radicalization in about two thirds (66.9 percent) of the articles included in this review. In the scientific literature, extremist propaganda is examined at a group level in terms of propaganda,[57] but also in terms of culture,[58] and myths,[59] and also at the individual level in terms of individual beliefs[60] and views.[61] The fundamental characteristic of a

propaganda that predicts radicalization into violent extremism is justification of violence, which is generally done through mechanisms of moral disengagement and dehumanization.[62] Three articles also found traits such as Right-Wing Authoritarianism and Social Dominance Orientation to be associated with radicalization, but not necessarily within the right-wing context.[63] It is important to note that, in the context of *jihadist* extremism, knowledge of Islam and religiosity are often negatively associated with radicalization, with extremists generally being less religious and having lower knowledge of religious texts before their radicalization into violent extremism.[64] Given that religiously framed extremism generally involves religious fundamentalism this is not particularly surprising, because a key characteristic of religious fundamentalism is the rejection of established, mainstream, religious scholarly tradition and learning, in the name of (hubristically) going "back to scripture" untainted by tradition and interpretation.

The second most cited pull factor is group dynamics, which appears in more than one third (36.5 percent) of the articles reviewed. The group dynamics that are relevant to radicalization into violent extremism are described in terms of peer pressure,[65] the formation of strong bonds with like-minded people,[66] the fulfillment of belonging and identity needs and the total identification of the individual with the group,[67] the influence of family and kinship ties.[68] Empirical research on right-wing extremist homicides for example found that in most cases they happen in group settings.[69] Some articles establish a connection between group dynamics and ideology, because in group settings (especially small groups), individuals are socialized to violent ideologies.[70] Online groups can also fulfill this role.[71]

A special role is attributed to charismatic leaders and recruiters, who inspire and sometimes even coach violent extremists throughout their radicalization path, creating a special relationship with the recruits. This relationship is described in the literature in terms of traditional recruitment networks,[72] but also in more loose terms of charismatic authority,[73] and religious leadership in the context of *jihadist* radicalization.[74]

Other pull factors of radicalization are related to material and emotional rewards. Material incentives are monetary rewards, and mostly appear in the literature focusing on *jihadist* radicalization in Africa.[75] Material incentives (especially in association with criminal activities) are also mentioned in the context of far-right extremism in Canada and Russia.[76] The only case in which material incentives are cited in the European context concerns illegal immigrants in the Netherlands.[77] Emotional incentives concern the fulfillment of the desire for adventure and excitement, and they are found in research on *jihadism* in the Western countries,[78] and Russia,[79] and extremist groups in Colombia.[80] Emotional triggers are also found in research that analyzed extremists' propaganda, specifically audio-visual material,[81] and leaders' speeches.[82] Another emotional pull factor is the excitement for violence, especially in far-right contexts.[83]

We found no significant differences in the number of articles that mentioned pull factors to explain the two dependent variables. Pull factors are mentioned in about three quarters (75.8 percent) of the articles on cognitive radicalization, and about four fifths (79.1 percent) of the articles on behavioral radicalization. We also found no significant differences when we looked at the proportions of articles mentioning pull factors to explain individual versus group radicalization.

Table 2. Personal factors by dependent variables (frequencies and column percentages).

	Behavioral	Cognitive
No personal factors	75 (65.2%)	15 (45.5%)
Personal factors in combination	35 (30.4%)	18 (54.5%)
Personal factors only	5 (4.3%)	0
Total	115 (100%)	33 (100%)

X^2 (1, $N = 148$) $= 7.24$, $p = 0.3$.

The personal factors of radicalization

The personal factors of radicalization appear in about two fifths (39.2 percent) of the articles ($n = 58$). The first and most important category of personal factors concerns the individual's mental health, which appears in the cases of lone wolf terrorism in terms of psychological disorder,[84] mental illness,[85] and disturbance.[86] In the cases of cognitive and behavioral radicalization in Western countries (not necessarily lone wolf), key psychological issues are described in terms of depression,[87] low self-esteem,[88] personal alienation, isolation, friendless, loneliness, and misfit.[89] Those psychological states are often associated with a personal crisis,[90] a cognitive opening,[91] and the consequent search for meaning,[92] that is then fulfilled with extremist worldviews.

Another category of personal factors concerns the personality traits and cognitive structure of the individuals who engage in violent extremism, who have been found to have narcissistic personality,[93] low tolerance of ambiguity,[94] high personal uncertainty,[95] black-and-white type of thinking,[96] and impulsiveness.[97]

Certain demographic characteristics have also been found to be prevalent among violent extremists: extremists tend to be young,[98] male,[99] and in the case of far-right extremism also White,[100] and are generally born in the country where they live.[101] Moreover, previous experiences such as criminal behavior leading to having a criminal record, substance abuse, military experience and knowledge of weapons is associated with violent extremism, especially for far-right and lone wolf offenders.[102]

Personal factors are more often used to explain cognitive radicalization than behavioral radicalization in association with push and pull factors. Personal factors also appear as the sole factor of radicalization to explain behavioral radicalization when there are strong psychological disorders. The differences in proportions are statistically significant, X^2 (1, $N = 148$) $= 7.24$, $p = .3$ (Table 2).

Personal factors appear in about a half (53.0 percent, $n = 53$) of the articles that focus on individual radicalization, but only in about one-tenth (10.2 percent, $n = 5$) of the articles that explain group radicalization, X^2 (1, $N = 148$) $= 24.68$, $p < .01$. This is not surprising because personal factors capture subjective elements that pertain to the individual sphere. Personal factors are also more frequently cited in articles that focused on lone wolf attacks, with the difference approaching statistical significance X^2 (1, $N = 148$) $= 4.55$, $p < .10$.

Geographical differences

We noticed that articles focusing on North America, Australia, and Europe, investigated cognitive radicalization more than articles focusing on the rest of the world, X^2 (1, $N = 148$) $= 6.86$, $p < .05$ (Table 3).

Table 3. Dependent variables by geographical focus (frequencies and column percentages).

	North America, Australia, and EU	Other countries
Behavioral	47 (68.1%)	68 (86.1%)
Cognitive	22 (31.9%)	11 (13.9%)
Total	69 (100%)	79 (100%)

X^2 (1, $N = 148$) = 6.86, $p = 0.01$.

Table 4. Push factors of radicalization by geographical focus (frequencies and column percentages). Please note that categories are not mutually exclusive.

	North America, Australia, and EU	Other countries
Push factors (overall)*	37 (53.6%)	48 (60.8%)
State repression	4 (5.8%)	10 (12.7%)
Threat	3 (4.3%)	3 (3.8%)
Western foreign policies	3 (4.3%)	9 (11.4%)
Disadvantage	27 (39.1%)	27 (34.2%)
Total	69 (100%)	79 (100%)

*X^2 (1, $N = 148$) = 0.76, $p = .38$.

Table 5. Pull factors of radicalization by geographical focus (frequencies and column percentages). Please note that categories are not mutually exclusive.

	North America, Australia, and EU	Other countries
Pull factors (overall)*	54 (78.3%)	62 (78.5%)
Ideological pulls	47 (68.1%)	52 (65.8%)
Social pulls	27 (39.1%)	27 (34.2%)
Emotional pulls	3 (4.3%)	3 (3.8%)
Material pulls	2 (2.9%)	9 (11.4%)
Total	69 (100%)	79 (100%)

*X^2 (1, $N = 148$) = 0.01, $p = .97$.

Overall, push factors are mentioned as factors of radicalization across different geographical areas. The indicators of disadvantage (including inequality, exclusion, poverty, unemployment, access to education, and in general sources of injustice, marginalization, grievance, and victimization) appear in very similar proportion across geographical areas. Even though the differences are not statistically significant ($p > .1$), state repression, threat, and Western foreign policies are less cited in studies focusing on North America, Australia and Europe, compared to other geographical areas (Table 4).

Pull factors are also consistently mentioned as factors of radicalization across different geographical areas. Even though the difference only approaches statistical significance ($p = .06$), material pulls (i.e., economic incentives) are less cited in studies focused on North America, Australia, and Europe, compared to other geographical areas (Table 5). All other pull factors proportionally appear across different contexts.

As Table 6 shows, personal factors appear more frequently in studies that focus on North America, Australia and Europe, compared to the rest of the world, X^2 (1, $N = 148$) = 5.52, $p < .05$. Specifically, the factors that appears proportionally more in studies focusing on North America, Australia and Europe are mental health issues, X^2 (1, $N = 148$) = 9.15, $p < .01$. Military experience is not mentioned as a personal factor of radicalization in countries other than in North America, Australia and Europe.

Table 6. Personal factors of radicalization by geographical focus (frequencies and column percentages). Please note that categories are not mutually exclusive.

	North America, Australia, and EU	Other countries
Personal factors (overall)*	34 (49.3%)	24 (30.4%)
Military experience	2 (2.9%)	0
Criminal history	5 (7.2%)	1 (1.3%)
Gender (male)	8 (11.6%)	3 (3.8%)
Mental health	15 (21.7%)	4 (5.1%)
Total	69 (100%)	79 (100%)

*X^2 (1, $N = 148$) = 5.52, $p < .05$.

Ideological differences

An important issue that needs to be addressed is whether or not the factors predicting radicalization into violent extremism are the same across different ideologies. What we found is that there are no significant differences in the proportions of push factors across studies that looked at different ideologies. The only factor where differences approach statistical significance is that of state repression, which is more present in articles about *jihadist* radicalization, X^2 (2, $n = 117$) = 54.93, $p < .1$ (articles focused on multiple ideologies were excluded from this calculation). Outrage at Western foreign policies is, in the literature reviewed, exclusively a factor of *jihadist* radicalization. This aside, there are no statistically significant differences in the proportions of pull factors across studies that looked at different ideologies. No significant differences appear also for personal factors in general.

Military experience exclusively appears as a predictor of far-right extremism, even though anecdotally we know that in some instances *jihadist*-inspired attacks have been conducted by individuals with military background (such as Nidal Hasan's Fort Hood shooting). At the same time, being male appears as a predictor of far-right extremism more than in other ideologies, X^2 (2, $n = 117$) = 12.39, $p < .1$.

Methodological differences

Is the use of a specific method or sample consistently associated with a research focus on a certain factor of radicalization? We found articles using data from existing datasets (e.g., opinion polls or the GTD) being more likely to identify push factors as causes of radicalization, X^2 (1, $N = 148$) = 3.62, $p = .06$). Also, qualitative studies mention pull factors as drivers of radicalization significantly more than quantitative and mixed-methods studies, X^2 (1, $N = 148$) = 8.03, $p < .01$. Personal factors appear less frequently in studies that used text analysis X^2 (1, $N = 148$) = 7.08, $p < .01$), and in articles using qualitative methodologies X^2 (1, $N = 148$) = 16.30, $p < .01$.

Finally, and very importantly, we found that the articles that exclusively used qualitative methodologies gave a more narrowly defined explanation of radicalization as a product of either single types of factors (e.g., only pull) or as a combination of two factors (e.g., push and pull) X^2 (2, $N = 148$) = 6.05, $p < .05$. Conversely, articles that used quantitative or mixed methodologies more often proposed an explanation of radicalization that included a combination of push, pull, and personal factors.

Discussion

This article presents a systematic scoping review of the literature about radicalization into violent extremism. The findings show that there has been an increase of empirical research over time, which is an extremely positive trend. However, studies in the field—as reflected in the 2001–2015, empirically based, English-language journal articles studied—are predominantly focused on *jihadist* radicalization in North America, Europe, and Australia—and largely use exclusively qualitative methodologies.

The empirical research disproportionately focuses on pull factors, which appear in 78.4 percent of the articles, while push factors (appearing in 57.4 percent of the articles) and personal factors (appear in 39.2 percent of the articles) are comparatively under-researched. This finding appears to contradict, at least in part, that of Sedgwick, who stated that "the concept of radicalisation emphasizes the individual and, to some extent, the ideology and the group, and significantly de-emphasized the wider circumstances."[103]

We acknowledge that our coding decisions have influenced the low rate at which personal factors appear in the literature. As a robustness check, we recoded all micro-level studies (i.e., the studies focusing on a small sample of less than fifty individuals), and we placed factors like unemployment and poverty in the "personal" category instead of the "push" category. After the re-coding, push factors were cited as drivers of radicalization in 49.3 percent ($n = 73$) instead of 57.4 percent ($n = 85$) of the articles, and personal factors were cited as drivers of radicalization in 47.3 percent ($n = 70$) instead of 39.2 percent ($n = 58$) of the articles. We re-run all the analysis and we found no change in the results of the Chi-square tests that we report in this article. After the re-coding, however, the number of articles focusing of personal and push factors becomes almost identical.

This review shows that there is a dominant focus in the scholarly literature on pull factors, and a lesser focus on personal factors. Some could interpret the lower appearance of personal factors in the literature as a sign that they are less relevant to explain radicalization. We believe, however, together with King and Taylor,[104] that this more likely reflects a lack of research on personal factors, especially outside North America, Australia, and Europe. As King and Taylor noted: "current theorising emphasizes situational factors as the primary—and in some cases the exclusive—drivers of radicalization," but it fails to understand the role of individual characteristics in determining "how people respond to situations."[105] The comparatively lower appearance of personal factors in the literature might also reflect a problem to access reliable biographical data in the field, even though recent databases have proposed to fill this void (see, e.g., the Profiles of Radicalization in the United States [PIRUS]) database published by the Study of Terrorism and Responses to Terrorism [START]). Personal factors are more often cited to explain cognitive radicalization, but they also appear as a unique cause of behavioral radicalization in relation to lone wolf behavior. This confirms McCauley and Moskalenko's observation that "lone attackers are likely to have weapons experience, depression or other mental disorder."[106]

Overall, we found that push and pull factors of radicalization are evenly mentioned in the scholarly literature across case-studies drawn from different geographical regions. For example, the indicators of disadvantage (including inequality, exclusion, poverty,

unemployment, access to education, and in general sources of injustice, marginalization, grievance, and victimization) are mentioned as factors of radicalization in empirical research from all over the world, including Western and non-Western countries. Similarly, group processes and propaganda pulls appear as relevant factors of radicalization across all geographical regions. Moreover, we found that push, pull, and personal factors are present in similar proportions across studies that focus on different ideological groups. Clearly, some factors such as a sense of outrage generated by perceptions of Western foreign policies being adversarial to Muslims are exclusively present among *jihadist* groups.

Nevertheless, there were no other statistically significant differences emerging from our review. This suggests that radicalization, in its fundamental mechanisms, so far as recent scholarly literature in English is a guide, is a cross-ideological and global process that entails similar fundamental categories of factors: (1) a political grievance, (2) a reward or appeal of violent extremism, and (3) a personal vulnerability or predisposition. We believe that various combinations of push, pull, and personal factors largely capture the dimensions that allow us to understand the "richness and diversity of situations that breed terrorism."[107] Although the radicalization process entails similar categories of factors, we acknowledge that there may be important geographical or other differences in the frequency of the factors within the larger aggregate categories of push, pull, and personal factors. In other words, the causes of radicalization may differ in different contexts, even though the categories of factors are recurring.

At the same time, however, when we zoom into each category of radicalization factors, we start to see important variations. For example, poverty is only cited as a radicalization factor in articles that focus on African countries. Also, even though the difference is not statistically significant, state repression, threat, and Western foreign policies are less cited in studies focused on North America, Australia, and Europe, compared to other geographical areas. Material incentives are more frequently cited in developing countries (although not absent in Europe, such as among extremely disadvantaged groups like illegal immigrants), and certain personal characteristics like being a male and having a military background are more often associated with right-wing extremism in Western settings.

Finally, we found that qualitative methods tend to over-represent pull factors as a cause of radicalization, and also tend to fail in detecting the interactions between personal, push, and pull factors. This suggests that the imperative to construct an explanatory narrative inherent in qualitative methods results in an overly simplistic reading of the dynamics involved. It also suggests that there has not been a dramatic change since Silke's 2001 review of the methods used in the field, when he wrote that "the methods used by terrorism researchers are essentially exploratory."[108] Rigorous hypothesis-testing continues to be rare: for example, only 12.8 percent ($n = 19$) of the studies considered in this review uses a control group, and only one single study used a control group of nonviolent extremists to identify the distinct characteristics and risk factors of violent extremism.[109] In the future, rigorous research designs that include the use of control groups of nonviolent extremists will be necessary to distinguish between cognitive and behavioral radicalization, and to identify the specific and unique factors that lead an individual from support to action. Given the growth of empirical research in the past

years (see Figure 1), however, and the relatively small quota of more systematic research, we agree with the viewpoint presented by Freilich et al., that "there is reason to be optimistic about the future of terrorism studies."[110]

Limitations and Future Research Directions

The main limitation of this review concerns the flexibility of the operationalization of the concepts contained in the articles that we reviewed. In most of the qualitative research the dependent and the independent variables were not explicitly defined, let alone operationalized in standardized terms. As a consequence, the coding process involved a degree of subjectivity. Nevertheless, we addressed this issue by transparently reporting the methods and by reaching satisfactory inter-coder reliability. However, we also acknowledge that the coding system could have been conducted differently, which might have led to slightly different results. Findings from different cultural contexts might have been forced into the a-priori categories of push, pull, and personal factors, because the coders had the implicit assumption that those categories would be meaning- ful across such diverse cases.

For practical reasons we did not collect information about the factors that the empir- ical studies found to be uncorrelated with radicalization. We made this choice because most of the existing empirical research does not use hypothesis-testing designs, and it is therefore impossible to rigorously determine when an article had empirical evidence about a factor having a "null" effect on the dependent variable. Therefore, we decided to exclusively focus on the "positive" effects. We acknowledge that this choice has potentially silenced disagreement within the field. For example, Campana and Lapointe found that variables such as economic development, economic inequalities and socioe- conomic conditions had positive, negative, and null tests in the literature, which means that there is no agreement about their impact on the number of terrorist attacks.[111] However, the methodological variability and lack of rigor in the field does not allow to properly conduct this type of test for the literature that we considered in this review. We also acknowledge that by only searching for the terms "radicali*ation" and "extremis" we might have missed important works that prefer to use the term terrorism and not mention the terms radicalization or extremism. Including the search term "terrorism" would have retrieved too many non-relevant articles and would have expo- nentially increased the number of articles to be manually screened by the coders' team, making the size of the review impracticable.

Finally, the lack of rigorous methods in the field also leaves unanswered the questions about the causal relations between the factors that we assumed to be dependent and independent variables. This issue has been highlighted also in recent reviews in the field of suicide terrorism.[112] For example, there is no definitive answer to the question whether the adoption of an extreme ideology precedes engagement in violence or it fol- lows it. Moreover, certain push factors (such as poverty) and personal factors (such as demographic characteristics and personality traits) certainly precede radicalization because of their nature, but others (such as the development of a mental disorder) might, at least in some cases, also follow or develop alongside radicalization, being, in part, caused by it. In this article we accept the causal direction that the authors of the

research articles that we considered suggest, but we acknowledge that it might be problematic. We believe that this is one of the most important future challenges for the entire field of terrorism studies.

Conclusion

We believe that our categorization of the literature allows one to identify the main characteristics of the field. Moreover, our system of categorization highlights the basic structure of the process of radicalization as a mechanism that entails a real or perceived political grievance, a perceived reward or appeal of violent extremism and a personal vulnerability. Our review is limited to articles published through 2015. We envisage that the wave of the Islamic State of Iraq and Syria–inspired attacks around the world in 2016 and 2017, and in 2018 continuing beyond the collapse physical caliphate in Syria and Iraq, would have inspired more studies on personal factors of radicalization, especially focused on lone wolves and jihadist radicalization. Moreover, we expect that new datasets (such as the PIRUS database developed by START) would trigger more quantitative empirical research in the field, continuing the increase in empirical studies that we captured in this review.

We propose that future research should aim to understand the interaction between push, pull, and personal factors for both cognitive and behavioral radicalization, and the specific conditions that develop the emergence of different types of those factors in certain contexts. A number of very important questions remain to be addressed. For example: do all push, personal factors have the same effect on the radicalization process? What is the specific combination of personal, push, and pull factors that triggers radicalization in a specific context? Are there any differences in the push, pull, and personal factors that predict cognitive and behavioral radicalization? What factors are more important to identify the move to action? We believe that these represent some of the most important questions that disciplined and theoretically informed empirical research should focus on, to move the field of terrorism studies forward.

Notes

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Intent: The Secret Life of Function Words," *Dynamics of Asymmetric Conflict* 4, no. 2 (2011): 92–102.

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Appendix. Articles used in the current study

Author	Title	Year	Journal
Abbas T., and Siddique A.	Perceptions of the processes of radicalization and de-radicalization among British South Asian Muslims in a post-industrial city	2012	*Journal for the Study of Race, Nation and Culture,* *18*(1), 119–134.
Abdulagatov Z.M.	The influence of the religious factor on the extremist behavior of Dagestani Youth	2013	*Russian Education and Society,* *55*(2), 67–81.

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Author	Title	Year	Journal
Acevedo G.A., and Chaudhary A.R.	Religion, cultural clash, and Muslim American attitudes about politically motivated violence	2015	*Journal for the Scientific Study of Religion*, *54*(2), 242–260.
Achilov D., and Shaykhutdinov, R.	State regulation of religion and radicalism in the post-Communist Muslim republics	2013	*Problems of Post-Communism*, *60*(5), 17–33.
Adamczyk A., Gruenewald J., Chermak S.M., and Freilich J.D.	The relationship between hate groups and far-right ideological violence	2014	*Journal of Contemporary Criminal Justice*, *30*(3), 310–332.
Aghedo I., and Osumah O.	The Boko Haram uprising: How should Nigeria respond?	2012	*Third World Quarterly*, *33*(5), 853–869.
Ahmad I.	Theorizing Islamism and democracy: Jamaat-e-Islami in India	2012	*Citizenship Studies*, *16*(7), 887–903.
Akchurina V., and Lavorgna A.	Islamist movements in the Fergana Valley: A new threat assessment approach	2014	*Global Crime*, *15*(3–4), 320–336.
Al Baghal, T.	Estimating support for extremism and its correlates: The case of Pakistan	2014	*ASK Research & Methods*, (23), 35–56.
Al Qurtuby S.	Ambonese Muslim jihadists, Islamic identity, and the history of Christian-Muslim rivalry in the Moluccas, eastern Indonesia	2015	*International Journal of Asian Studies*, *12*(1), 1–29.
Alao A.	Islamic radicalization and violent extremism in Nigeria	2013	*Conflict, Security & Development*, *13*(2), 127–147.
Alimi E.Y.	The relational context of radicalization: The case of Jewish settler contention before and after the Gaza pullout	2015	*Political Studies*, *64*(4), 910–929.
Alonso R.	The spread of radical Islam in Spain: Challenges ahead	2012	*Studies in Conflict & Terrorism*, *35*(6), 471–491.
Aly A., and Striegher J.L.	Examining the role of religion in radicalization to violent Islamist extremism	2012	*Studies in Conflict & Terrorism*, *35*(2), 849–862.
Amble J.C., and Meleagrou-Hitchens A.	Jihadist radicalization in East Africa: Two case studies	2014	*Studies in Conflict & Terrorism*, *37*(6), 523–540.
Amjad N., and Wood A.M.	Identifying and changing the normative beliefs about aggression which lead young Muslim adults to join extremist anti-Semitic groups in Pakistan	2009	*Aggressive Behaviour*, *35*(6), 514–519.
Andre V.	The Janus face of new media propaganda: The case of Patani neojihadist YouTube warfare and its Islamophobic effect on cyber-actors	2014	*Islam and Christian-Muslim Relations*, *25*(3), 335–356.
Andre V.	"Neojihadism" and YouTube: Patani militant propaganda dissemination and radicalization	2012	*Asian Security*, *8*(1), 27–53.
Aning K., and Abdallah M.	Islamic radicalization and violence in Ghana	2013	*Conflict, Security & Development*, *13*(2), 149–167.
Badran D.	Hybrid genres and the cognitive positioning of audiences in the political discourse of Hizbollah	2010	*Critical Discourse Studies*, *7*(3), 191–201.
Baines P.R., O'Shaughnessy N.J., Moloney K., Richards B., Butler S., and Gill M.	The dark side of political marketing: Islamist propaganda, reversal theory and British Muslims	2010	*European Journal of Marketing*, *44*(3–4), 478–496.
Bartlet J., and Miller C.	The edge of violence: Towards telling the difference between violent and nonviolent radicalization	2012	*Terrorism and Political Violence*, *24*(1), 1–21.

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Author	Title	Year	Journal
Berntzen L.E., and Sandberg S.	The collective nature of lone wolf terrorism: Anders Behring Breivik and the anti-Islamic social movement	2014	*Terrorism and Political Violence*, *26*(5), 759–779.
Besta T., Szulc M., and Jaśkiewicz M.	Political extremism, group membership and personality traits: who accepts violence? [Extremismo político, pertenencia al grupo y rasgos de personalidad: ¿Quién acepta la violencia?]	2015	*International Journal of Social Psychology*, *30*(3), 563–585.
Bhui K., Everitt B., and Jones E.	Might depression, psychosocial adversity, and limited social assets explain vulnerability to and resistance against violent radicalization?	2010	*Plos ONE*, *9*(9), e105918.
Bhui K., Warfa, N., and Jones E.	Is violent radicalization associated with poverty, migration, poor self-reported health and common mental disorders?	2014	*Plos ONE*, *9*(3), e907188.
Biberman Y., and Zahid F.	Why terrorists target children: Outbidding, desperation, and extremism in the Peshawar and Beslan school massacres	2016	*Terrorism & Political Violence*, 1–16. (first published in 2015).
Blair G., Fair C.C., Malhotra N., and Shapiro J.N.	Poverty and support for militant politics: Evidence from Pakistan	2013	*American Journal of Political Science*, *57*(1), 30–48.
Botha A.	Political socialization and terrorist radicalization among individuals who joined al-Shabaab in Kenya	2014	*Studies in Conflict & Terrorism*, *37*(11), 895–919.
Boudreau G.B.	Radicalization of the settlers' youth: Hebron as a hub for Jewish extremism	2014	*Global Media Journal*, *7*(1), 69–85.
Bowman-Grieve L., and Conway M.	Exploring the form and function of dissident Irish Republican online discourses	2012	*Media, War & Conflict*, *5*(1), 71–85.
Braddock K.	The utility of narratives for promoting radicalization: The case of the animal liberation front	2015	*Dynamics of Asymmetric Conflict*, *8*(1), 38–59.
Canter D., Sarangi S. and Youngs D.	Terrorists' personal constructs and their roles: A comparison of the three Islamic terrorists	2014	*Legal & Criminological Psychology*, *19*(1), 160–178.
Capellan J.A.	Lone wolf terrorist or deranged shooter? A study of ideological active shooter events in the United States, 1970–2014	2015	*Studies in Conflict & Terrorism*, *38*(6), 396–413.
Caspi D.J., Freilich J.D., and Chermak S.M.	Worst of the bad: Violent White supremacist groups and lethality	2012	*Dynamics of Asymmetric Conflict*, *5*(1), 1–17.
Cheong P.H., and Halverson J.R.	Youths in violent extremist discourse: Mediated identifications and interventions	2010	*Studies in Conflict & Terrorism*, *33*(12), 1104–1123.
Chris L., Corman S.R., Furlow B.R., and Errickson K.W.	Cooking the books: Strategic inflation of casualty reports by extremists in the Afghanistan conflict	2012	*Studies in Conflict & Terrorism*, *35*(5), 369–381.
Coester M.	Commentary: Right-wing extremism and bias crime in Germany	2010	*Journal of Ethnicity in Criminal Justice*, *8*(1), 49–69.
Dalacoura K.	Islamist terrorism and the Middle East democratic deficit: Political exclusion, repression and the causes of extremism	2006	*Democratization*, *13*(3), 508–525.
Davydov D.G.		2015	*Russian Education & Society*, *57*(3), 146–162.

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Author	Title	Year	Journal
	The causes of youth extremism and ways to prevent it in the educational environment		
de Bie J.L., de Poot C.J., and van der Leun J.P.	Jihadi networks and the involvement of vulnerable immigrants: Reconsidering the ideological and pragmatic value	2014	*Global Crime*, *15*(3–4), 275–298.
De Koster W., and Houtman D.	Stormfront is like a second home to me	2008	*Information, Communication & Society*, *11*(8), 1155–1176.
Deckard N.D., and Jacobson D.	The prosperous hardliner: Affluence, fundamentalism, and radicalization in Western European Muslim communities	2015	*Social Compass*, *62*(3), 412–433.
Doosje B., Loseman A., and van den Bos K.	Determinants of radicalization of Islamic youth in the Netherlands: Personal uncertainty, perceived injustice, and perceived group threat	2013	*Journal of Social Issues*, *69*(3), 586–604.
Dornschneider S.	Belief systems and action inferences as a source of violence in the name of Islam	2010	*Dynamics of Asymmetric Conflict*, *3*(3), 223–247.
Edwards C., and Gribbon L.	Pathways to violent extremism in the digital era	2013	*The RUSI Journal*, *158*(5), 40–47.
Eissa A.M.A.	Islamist political movements in Yemen	2013	*Contemporary Arab Affairs*, *6*(1), 41–70.
Ellis B.H., Abdi S.M., Lazarevic V., White M.T., Lincoln A.K., Stern J.E., and Horgan J.G.	Relation of psychosocial factors to diverse behaviors and attitudes among Somali refugees	2015	*American Journal of Orthopsychiatry*, *86*(4), 393–408.
Enstad J.D.	"Glory to Breivik!": The Russian far right and the 2011 Norway attacks	2015	*Terrorism & Political Violence*, *29*(5), 773–792.
Feddes A.R., Mann L., and Doosje B.	Increasing self-esteem and empathy to prevent violent radicalization: A longitudinal quantitative evaluation of a resilience training focused on adolescents with a dual identity	2015	*Journal of Applied Social Psychology*, *45*(7), 400–410.
Fodeman A.D.	Safety and danger valves: Functional displacement in American anti-abortion terrorism	2015	*Behavioural Science of Terrorism and Political Aggression*, *7*(3), 169–183.
Freilich J.D., Adamczyk A., Chermak S.M., Boyd K.A., and Parkin W.S.	Investigating the applicability of macro-level criminology theory to terrorism: A county-level analysis	2015	*Journal of Quantitative Criminology*, *31*(3), 383–411.
Fricano G.	Horizontal and vertical honor in the statements of Osama bin Laden	2012	*Critical Studies on Terrorism*, *5*(2), 197–217.
Gargan I., Meldon F.K., Aherne C., Fitzgerald N., and McNicholas J.	Terrorists meeting their victims: A case study of psychologists' experiences of former terrorists meeting survivors	2012	*Journal of Aggression, Conflict and Peace Research*, *4*(4), 216–225.
Gartenstein-Ross D.	Lone wolf Islamic terrorism: Abdulhakim Mujahid Muhammad (Carlos Bledsoe) case study	2014	*Terrorism and Political Violence*, *26*(1), 110–128.
Gelfand M.J., Lafree G., Fahey S., and Feinberg E.	Culture and extremism	2013	*Journal of Social Issues*, *69*(3), 495–515.
Gill P., Horgan J., and Deckert P.	Bombing alone: Tracing the motivations and antecedent behaviors of lone-actor terrorists.	2013	*Journal of Forensic Sciences*, *59*(2), 425–435.

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Author	Title	Year	Journal
Ilardi G.J.	Interviews with Canadian radicals	2013	*Studies in Conflict & Terrorism*, *36*(9), 713–738.
Ingram H.J.	An analysis of the Taliban in Khurasan's *Azan* (Issues 1–5)	2015	*Studies in Conflict & Terrorism*, *38*(7), 560–579.
Ingram H.J.	The strategic logic of Islamic State information operations	2015	*Australian Journal of International Affairs*, *69*(6), 729–752.
Jacobson D., and Deckard N.	The Tribalism Index: Unlocking the relationship between tribal patriarchy and Islamist militants	2012	*New Global Studies*, *6*(1), 1–18.
Jitpiromsri S., and Sobhonvasu P.	Unpacking Thailand's southern conflict: The poverty of structural explanations	2006	*Critical Asian Studies*, *38*(1), 95–117.
Joosse P., Bucerius S.M., and Thompson S.K.	Narratives and counternarratives: Somali-Canadians on recruitment as foreign fighters to Al-Shabaab	2015	*The British Journal of Criminology*, *55*(4), 811–832.
Karpantschof R.	Violence that matters! Radicalization and de-radicalization of leftist, urban movements— Denmark 1981–2011	2015	*Behavioural Sciences of Terrorism and Political Violence*, *7*(1), 35–52.
Kerodal A.G., Freilich J.D., Chermak S.M., and Suttmoeller M.J.	A test of Sprinzak's split delegitimization's theory of the life course of far-right organizational behavior	2015	*International Journal of Comparative and Applied Criminal Justice*, *39*(4), 307–329.
Khan M. M., and Azam A.	Root causes of terrorism: An empirical analysis	2008	*Journal of Interdisciplinary Studies*, *20*(1–2), 65–86.
Khosrokhavar F.	Radicalization in prison: The French case	2013	*Religion & Ideology*, *14*(2), 284–306.
Kleinmann S.M.	Radicalization of homegrown Sunni militants in the United States: Comparing converts and non-converts	2012	*Studies in Conflict & Terrorism*, *35*(4), 278–297.
Kropiunigg U.	Framing radicalization and deradicalization: A case study from Saudi Arabia	2013	*Journal of Individual Psychology*, *69*(2), 97–117.
Kuhn H.P.	Adolescent voting for right-wing extremist parties and readiness to use violence in political action: Parent and peer contexts	2004	*Journal of Adolescence*, *27*(5), 561–581.
Laryš M., and Mareš M.	Right-wing extremist violence in the Russian Federation	2011	*Europe-Asia Studies*, *63*(1), 129–154.
Lemieux A.F., and Asal V.H.	Grievance, social dominance orientation, and authoritarianism in the choice and justification of terror versus protest	2010	*Dynamics of Asymmetric Conflict*, *3*(3), 194–207.
Macklin G., and Busher J.	The missing spirals of violence: four waves of movement–countermovement contest in post-war Britain	2015	*Behavioural Sciences of Terrorism and Political Aggression*, *7*(1), 53–68.
Malthaner S.	Contextualizing radicalization: The emergence of the "Sauerland-Group" from radical networks and the Salafist movement	2014	*Studies in Conflict & Terrorism*, *37*(8), 638–653.
Mastors E., and Siers R.	Omar al-Hammami: A case study in radicalization	2014	*Behavioural Sciences & the Law*, *32*(3), 377–388.
Matsumoto D., Frank M.G., and Hwang H.C.	The role of intergroup emotions in political violence	2015	*Current Directions in Psychological Science*, *24*(5), 369–373.
Mccauley C.	Testing theories of radicalization in polls of U.S. Muslims	2012	*Analysis of Social Issues and Public Policy*, *12*(1), 296–311.
McNamee L.G., Peterson B.L., and Peña J.	A call to educate, participate, invoke and indict:	2010	*Communication Monographs*, *77*(2), 257–280.

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Author	Title	Year	Journal
	Understanding the communication of online hate groups		
Meagher K.	Leaving no one behind?: Informal economies, economic inclusion and Islamic extremism in Nigeria	2015	*Journal of International Development, 27*(6), 835–855.
Milla M.N., and Faturochman A. D.	The impact of leader-follower interactions on the radicalization of terrorists: A case study of the Bali bombers	2013	*Asian Journal of Social Psychology, 16*(2), 92–100.
Milton D., Spencer M., and Findley M.	Radicalism of the hopeless: Refugee flows and transnational terrorism	2013	*International Interactions, 39*(5), 621–645.
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Mueller J., and Stewart M.G.	Terrorism, counterterrorism, and the Internet: The American cases	2015	*Dynamics of Asymmetric Conflict, 8*(2), 176–190.
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Author	Title	Year	Journal
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Appendix. Continued.

Author	Title	Year	Journal
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