

The Causes of Radicalization

A review of social science literature
to assess its operational utility for open source social media research

Part of the KANISHKA Project

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By

Ragheb Abdo

SecDev Research Associate

What is Kanishka?

The Kanishka Project is a multi-year initiative funded by the Government of Canada to support research dedicated to improving Canada's ability to counter and/or prevent violent extremism at home and abroad. Unveiled on 23 June 2011, the project is named after the Air India Flight 182 that crashed on June 23, 1985 near the west coast of Ireland after a bomb planted on the aircraft exploded. The incident was the single largest loss of life to a terrorist attack in Canadian history killing 329 people, most of them Canadians.

The Kanishka Initiative invests in research to increase understanding of the recruitment methods and tactics of terrorists and other violent extremists, to help produce more effective policies, tools and resources for law enforcement and people on the front lines. Although the project's primary focus is on research, it also supports other activities necessary to build knowledge and create a network of researchers and students that spans multiple disciplines and research organizations.

This Report

This report, researched and prepared by Ragheb Abdo, a SecDev Research Associate, summarizes an initial literature review that was undertaken as background research to support The SecDev Group's Kanishka funded project that undertook limited social media analytic's experimentation around the theme of *Detecting Weak Signs of Radicalization Online*.

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For an overview summary of the research and lessons learned by the SecDev Kanishka Project, please see: The SecDev Group. 2014. "*Social media, Online Networks and the Prevention of Violent Extremism*" KANISHKA Research and Lessons Learned. Summary Overview. Available on: www.preventviolentextremism.info

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I. Introduction. Open source social media and PVE

The physical and cyber realms are becoming increasingly meshed and interdependent. Almost every domain of our social world now has a digitized cyber existence, including politics, diplomacy, warfare, and extremist violence. Like everyone else, extreme political actors with agency in cyberspace create digital footprints, rich with all kinds of data – from the narratives they use to inspire others through to their online networks and audiences.

Given the public consequences of violent extremism, the online data produced by violent extremist networks could prove to be a valuable resource for the early detection and prevention of violent extremism. Social media data is especially interesting in this domain since radicalization typically involves many social processes.¹

However, the question of whether and how *open source social media data* may be leveraged to prevent violent extremism (PVE) is just emerging.² Social media analytics is, itself, a newly emerging area – an array of approaches and techniques that are far from an established tradecraft. And, whether and how the internet and social media may, or may not, be implicated in the complex processes that culminate in violent extremist acts is also new, and suffers from the same challenges affecting the PVE enterprise writ large – namely, problematic and contested assumptions about the complex conditions that promote violent extremism (Horgan 2014).

This present paper acknowledges the nascent stage of this emerging research area. A critical precursor for exploring the potential of social media data for PVE (specifically, the early detection of radicalization) is to have some credible, operational indicators to apply and explore. To this end, this paper reviewed current research on the phenomenon of *radicalization towards violent extremism* with a view to identifying potential indicators, patterns or hallmarks that could be operationalized for social media experimental research.

¹ Focusing on the radicalization phenomenon is important from the perspective of early warning and

² After the research for this paper was completed in mid-2013, DEMOS released a very helpful literature review that, for the first time, undertook a systematic look at “social media intelligence capabilities for counter-terrorism” (Bartlett and Miller, 2013). This paper, funded by the Kanishka fund of Public Safety Canada, catalogued the widely divergent, fragmented, and nascent open social media research approaches techniques that could be applicable to counter-terrorism work. It also confirmed the absolute newness factor: “*It is notable that very little social media research found was directly related to counter-terrorism work, but much had, when extrapolated, implications for counter-terrorism,*” (p. 5). The paper also makes an important contribution in outlining the wide range of ethical and legal questions that must be addressed; but for which there is little clear precedent.

II. Literature Review Scoping

The review focused on research addressing the phenomenon of radicalization towards violent extremism to: (1) review the different ways practitioners defined radicalization; (2) explore whether there appear to be general patterns explaining why and how individuals radicalize; (3) identify a common profile for different radicals -- if possible; and, (4) capture the different factors that appear to shape an individual's journey down the path of radicalization towards violent extremism.

The literature review was not exhaustive. Rather it focused mostly on studies that showed promise of yielding operational results. Theoretical, descriptive, methodological, and policy literatures were not reviewed extensively since the main objective from conducting this review was to try to capture operational risk factors based on actual case studies. The reviewed literature came from the following sources:

- (1) Research undertaken by government agencies in Canada, the United States, the United Kingdom (UK), the European Union (EU), and Australia;
- (2) Research undertaken by independent research institutes in North America, the UK, and the EU; and
- (3) Scholarly articles published in academic journals in the fields of terrorism, conflict, and political violence, criminology, sociology, and psychology.

The purpose of the review was to:

- (1) Synthesize the state of knowledge on the causes of radicalization;
- (2) Highlight areas of debate and controversy in the literature;
- (3) Document the risk factors that have been linked to radicalization, and identify which ones may have potential to explore as potential early warning indicators;
- (4) Evaluate the reliability of empirical data and conclusions by assessing the accuracy and validity of data and measurements; checking for sample bias; and critically examining the validity of the analysis and conclusions;
- (5) Undertake a preliminary assessment of the potential early warning indicators to determine whether they a) apply in the Canadian context;³ and, (b) could be monitored in the cyber world.

The review also highlights areas of substantive agreement and debate in the literature, as well as conflicting evidence and gaps that cast doubt on findings.

³ The Canadian focus for the assessment component was deliberate, given that the research was funded by the Kanishka initiative of Public Safety Canada. See: <http://www.publicsafety.gc.ca/cnt/ntnl-scr/cntr-trrrsm/r-nd-flight-182/knshk/index-eng.aspx>

III. Radicalization Defined

Young men and women do not wake up one morning and decide to kill and terrorize people. An act of violence is the culmination of a process that typically begins much earlier. A robust counter-radicalization strategy would therefore prevent attacks by intervening at the earliest possible point in this process and not just when individuals begin planning an attack. By then it might well be too late.

The trend of “homegrown” terrorism in Western countries after September 11, 2001 has prompted security officials to reevaluate their counterterrorism efforts. The attacks on Madrid (2004), London (2005), Toronto (foiled 2006), Fort Hood (2009), Times Square (foiled 2010), and Boston (2013), were all perpetrated by individuals living in the West. These individuals were often citizens and not foreign terrorists recruited, trained, and financed by a global network. This new domestic threat is more amenable to early policy intervention since it lies within Western states’ borders where significant surveillance, policing, and intervention resources and capacity can be brought to bear.⁴

Determining why young people living in the West commit violence against their fellow citizens became a key question for academics and security practitioners alike. The focus of much of this research has been on “homegrown” Islamist extremists -- the most serious national security threat facing Western countries today. The consensus amongst academics and security officials studying this issue suggests that terrorists undergo a “radicalization” process, typically accelerated by an extremist ideology, prior to committing acts of violence. In other words, radicalization is, generally, the precursor to terrorism.

Social scientists and practitioners also broadly agree on the definition of radicalization (See Box 1). Radicalization is a gradual process where, because of the influence of many factors, individuals end up supporting violence as a legitimate way to achieve political ends. Before going through this transformational process, individuals initially hold beliefs and views that are well within the mainstream and their lives can be described as ordinary. A key factor pushing people down the path of radicalization is exposure to, or an internalization of, an extremist ideology. It is this ideology that produces a shift in beliefs that results in a dissatisfaction with the status quo. The same system of ideas also advocates for an alternative social order and justifies the use of violence to bring it into existence. Accordingly, the radicalization process is underpinned by ideological influences.

⁴ While the capability and potential is there, this issue is not without consequence for state-society relations, as found in the blowback from communities concerned about being targeted, profiled and defined as “at risk” by public safety authorities. For a solid practitioner’s perspective on these issues, see the Workshop Notes from the TSAS workshop on Security Policies and Community Relationships, held 4-5 November in Ottawa. <http://tsas.sites.olt.ubc.ca/files/2013/11/Dec-2013-TSAS-Workshop-Summary.pdf>

Box 1. Definitions of Radicalization

Official Definition: To cause (someone) to become an advocate of radical political or social reform or to introduce fundamental or far-reaching changes in (Oxford Dictionary).

Wikipedia Definition: Radicalization is a process by which an individual or group comes to adopt increasingly extreme political, social, or religious ideals and aspirations that (1) reject or undermine the status quo or (2) reject and/or undermine contemporary ideas and expressions of freedom of choice...Radicalization can be both violent and nonviolent (Wikipedia).

Government Definitions

Canada: A process where individuals, usually young people, are introduced to an ideology that encourages movement from the mainstream towards extreme views. Radicalization is considered a threat to national security only when it leads to espousing or engaging in violence (Royal Canadian Mounted Police 2009, 1).

United States: Gradually adopt[ing] an extremist religious/political ideology hostile to the West, which legitimizes terrorism as a tool to affect societal change. This ideology is fed and nurtured with a variety of extremist influences. Internalizing this extreme belief system as one's own is radicalization. The progression of searching, finding, adopting, nurturing, and developing this extreme belief system to the point where it acts as a catalyst for a terrorist act defines the process of radicalization. (New York City Police Department, Silber and Bhatt 2007, 16).

The process by which individuals come to believe their engagement in or facilitation of non-state violence to achieve social and political change is necessary and justified (Federal Bureau of Investigations, "Perspective" 2013).

United Kingdom: The process by which a person comes to support terrorism and forms of extremism leading to terrorism (UK House of Commons: Home Affairs Committee 2012, 14).

European Union: The phenomenon of people embracing opinions, views, and ideas which could lead to acts of terrorism (Transnational Terrorism, Security & the Rule of Law Research Project 2008, 4).

Academic Definitions

The process of adopting an extremist belief system, including the willingness to use, support, or facilitate violence, as a method to effect societal change...Radicalization is a complex and highly individualized process determined by the interaction of various structural and individual factors, and it is therefore very difficult to exactly capture in all its dynamics (Vidino 2011, 7).

Generally speaking, radicalization is understood as a change in beliefs, feelings and actions towards increased support of one side of intergroup conflict (Skillicorn, Leuprecht, and Winn 2012, 929).

Functionally, political radicalization is increased preparation for and commitment to intergroup conflict. Descriptively, radicalization means change in beliefs, feelings, and behaviors in directions that increasingly justify intergroup violence and demand sacrifice in defense of the ingroup. (McCauley and Moskaleiko 2008, 416).

A radical is understood as a person harboring a deep-felt desire for fundamental sociopolitical changes and radicalization is understood as a growing readiness to pursue and support far-reaching changes in society that conflict with, or pose a direct threat to, the existing order (Dalgaard-Nielsen 2010, 798).

Radicalization is a process of changes in attitude that lead towards sanctioning and, ultimately, the involvement in the use of violence for a political aim (Kleinmann 2012, 282).

IV. The “Root Causes” of Terrorism

Research done on the causes of terrorism has found that a large a number of factors increase the likelihood of terrorist violence. These factors are considered the “preconditions” of terrorism. They set the stage for violence in the longer term by creating an environment richer in opportunities for terrorism than in environments that lack them. Newman (2006) calls these conditions “permissive factors” and explains that they “provide a social environment...[that] results in the emergence of terrorist organizations and terrorists acts” (p. 750).

These root causes are in part political, economic, social, or cultural, i.e. they are “structural” factors. What is relevant about them for an early warning system is that they increase the probability of terrorism by creating a hospitable environment for the spread of the terrorism disease, to use a public health analogy. Scanning the cyber environment to identify their presence and assess their severity has several benefits. First, as *root* causes, they can be considered the first link in the causal chain leading to radicalization. In other words, as far as early warning goes, nothing comes earlier than root causes. Second, in addition to environmental influences, terrorist actors have individual-level variables (reviewed in the next section) that explain why they radicalize and commit acts of terrorism.

From the point of view of PVE, a robust early warning capability would monitor for risk factors at both the environmental and individual levels since radicalized individuals living in risky environments are more likely to commit acts of terrorism than those who don't.

Studies on the root causes of terrorism can be found in a wide range of literatures including the terrorism, revolution, ethnic conflict, civil war, and social movement literatures. Early and recent scholarship suggests that relationships exist between various types of political violence. Bjorgo argues that terrorism is often an extension and radicalization of other types of conflict (2005, 4). Canada's most serious terrorism incident, the 23 June 1985 downing of Air India Flight 182, is a good example of this relationship as it represents an extension of an ethnic conflict in India between Sikhs and Hindus playing out in Canada. The numerous waves of Palestinian terrorism in Israel and abroad are another supporting example of different forms of political violence sharing similar root causes.

The following sections review the different categories of root causes and provide a preliminary assessment of their value for further research as potential early warning indicators. The assessment evaluates whether the permissive factors identified in the literature: (a) apply in the Canadian context; and (b) can be monitored in the cyber world. The review also highlights areas of substantive agreement and debate in the literature, as well as conflicting evidence and gaps that cast doubt on findings.

Political Roots

State Illegitimacy

The emergence of terrorist violence directed at state targets has been attributed by many scholars to the delegitimization of the state (Della Porta, 1995; Sprinzak, 1990; Weinberg, 1991; Weinberg and Pedahzur, 2003; Weinberg, Pedahzur, and Perlinger, 2008). As perceptions of state legitimacy decreases, the likelihood that various oppositional groups, including radicals, will use violence increases. Sprinzak explains this inverse relationship by the dehumanization that occurs when oppositional groups extend delegitimization to every person they associate with the state (1990, p. 80-82). Weinberg (1991), Weinberg and Pedahzur (2003), and Weinberg, Pedahzur, and Perlinger (2008) found that political groups with revolutionary doctrines that seek to establish a new social order, and that stress the illegitimacy of the existing regime, are the *most* likely to use terrorism tactics (Weinberg, 1991, p. 437). There is substantive agreement in the literature that perceived regime illegitimacy is a key permissive factor that increases the likelihood of terrorism.

Evaluation. Democratic states, including Canada, enjoy higher levels of legitimacy than most authoritarian states. That being said, there will always be political actors who reject the status quo, or passionately oppose certain aspects of government domestic or foreign policy. In general, this factor should not be a significant risk in the Canadian case,⁵ but monitoring social media content to identify individuals, groups, networks, and online communities that delegitimize the Canadian state could alert to other risk factors. Content analysis technologies can support methods designed to measure perceptions of state legitimacy. **Operational Caveat:** While such monitoring could be possible to design, test and implement, it raises a host of difficult, and as yet very under-researched and under-debated ethical challenges. **See Box 2.**

⁵ As already noted, however, another consideration is the way in which public safety policies and approaches can make certain communities – who feel they are being delineated and targeted as “at risk” – feel alienated from the wider society and its social contract with the state. In this case it is not the legitimacy of the state that is questioned, but the legitimacy of certain of its policies. A similar dynamic can be found in consideration of foreign policy actions that are deemed to be “illegitimate” in the eyes of certain domestic populations – see the discussion under *grievances* below. Canadian society is not immune to these sorts of dynamics. See the TSAS workshop report on *Security Policies and Community Relationships* (<http://tsas.sites.olt.ubc.ca/files/2013/11/Dec-2013-TSAS-Workshop-Summary.pdf>)

Box 2. Open source social media analytics and PVE: Potential versus normatively acceptable and legally defined

In mid-2013, Edward Snowden’s disclosures of NSA “public security” practices sparked a much-needed global debate around the conundrums and trade-offs between citizen privacy and public security measures. The debate has also trickled over to the “open source” domain of social media research: What constitutes truly “open” data? This question seems to be interpreted differently depending on who is defining and implementing the information collection, by what authority, with what checks and balances, and for what purpose.

The bottom line is that capabilities for mining, extracting and analysing open source social media data has far outpaced a concomitant development in the legal and policy frameworks that should govern the process.

A recent review of the literature confirms the underdeveloped state of understanding, debate and policy when it comes to the legal and ethical conundrums of pursuing open source social media analytics for the purpose of PVE and public safety (Bartlett and Miller, 2013).** Discussion of this issue is beyond the bounds of this paper. However, it is important to stress this point: This paper flags indicators/risk factors that could merit further research for their utility for PVE; **however, for many of these indicators, operationalizing the research would raise potential ethical considerations, especially if undertaken on domestic populations.** As such, this paper helps to identify areas that merit robust engagement and discussion – by academics, front-line communities, public safety and privacy officials, practitioners and advocates, as well as the general public.

** This paper is an important starting point for a grounded understanding of the preliminary issues that require consideration.

State Repression

Transitioning from nonviolent opposition tactics to violent ones, including terrorism, has been linked to a government’s excessive use of violent repression (Callaway and Harrelson-Stephens, 2006; Crenshaw, 1995, 2001; Della Porta, 1995; Gurr, 1970; Weinberg, 1991). Della Porta’s 1970 study of German and Italian terrorist groups suggests that a government’s excessive crackdown on mobilized political actors is a key mechanism for state delegitimization. Police brutality and the use of violence in detention centers undermines the democratic legitimacy of the ruling regime and leads activists to conclude that they are dealing with an authoritarian order that can only be opposed with violence. Gurr’s (1970) research suggests that repression creates the perception amongst all political actors that the rules of the game have been changed and that the use of force has been legitimized. Repression also alters the balance of forces within the opposition, sending moderates into the ranks of extremists (Crenshaw 1995, 2001; Gupta, 1990).

Evaluation. The Canadian state considers nonviolent opposition a right for all Canadians. Peaceful opposition to government policy is not considered a threat to be

dealt with through the use of force. It would therefore not necessary to systematically track this environmental indicator on social media. It might be interesting though to track reactions to emergent incidents of excessive use of force by the police. These might create limited windows of opportunity for extremist actors to use violence.

Economic Roots

Modernization

Modernization is a broad concept used to explain various processes of social change that typically accompany rapid economic evolution. These processes produce a number of significant societal outcomes that include: the rapid expansion and centralization of the state; the marketization of economic relations; urbanization and the increase of population density; advances in communications and transportation infrastructure; and rapid technological advances. All these outcomes may create instability and destabilize society. There is substantive agreement in the literature that modernization-related societal instability increases the likelihood of political violence (Crenshaw, 1981; Kegley, 2002; Lia and Skjolberg, 2004).

Helmus (2009) and Paul (2009) provide a useful explanation that links the broad structural process of modernization with individual cognitive and psychological experiences that might provide triggers for political violence. They suggest that the best way to understand the relationship between terrorism and modernization is in terms of the effects of feelings of desperation, loss of valued traditions and relationships, and general anxiety that often accompany modernization. Structural economic changes, rapid technological advancements, and increased urbanization are often associated with job loss and weakened family and community ties. These visceral triggers of political violence have only been exacerbated by the modern effects of globalization.

Evaluation. The effects of modernization are more likely to increase the threat of terrorism in developing countries than in advanced capitalist democracies like Canada. These democracies, however, also have a significant population of new immigrants from developing countries, some of whom might experience a general anxiety from moving to/living in advanced modern societies. The wealth inequalities and dislocation caused by increasing globalization and technological change might also produce new alienated citizens, not just immigrants, who could become a source of recruits for all kinds of extremist groups. An early warning system capable of monitoring specific demographic groups for growing anxiety and desperation stemming from economic instability and social alienation would help identify individuals most vulnerable to recruitment by violent extremist groups. **Operational Caveat:** Monitoring public social media streams of specific demographic groups for the purposes of public safety raises a host of ethical questions (See Box 2 above).

Poverty

The literature that focuses on the relationship between poverty and terrorism suggests that poverty is not predictive of terrorism. The empirical evidence is not conclusive that there is a link in either direction. Micro-level evidence based on individual measures of income actually suggest that individuals with higher levels of income and education are slightly more likely to join terrorist groups. Krueger and Maleckova's (2003) study based on Hizbollah, Palestinian, and Jewish Underground militants finds no poverty-terrorism connection and instead identifies a positive correlation between higher standards of living and participation in Palestinian terrorism.

Studies based on macro-level indicators such as measures of economic development, unemployment levels, and levels of foreign direct investment, however, suggest that poverty may lead to increased levels of political violence. Li and Schaub (2004) find that economic growth in a country and its trading partners decreases the likelihood of terrorism. Gupta (1990) finds evidence that very high levels of unemployment are positively correlated with political violence. Robison, Crenshaw, and Jenkins (2006) also find that increased levels of foreign direct investment reduces transnational terrorism over time. Lia and Skjolberg's (2004) analysis of global terrorism incidents find Africa to be the continent with the highest number of terrorism-related injuries.

Evaluation. The ongoing debate on the relationship between poverty and terrorism suggest it should not be considered a factor that increases the risk of terrorism. Since poverty is less of a problem in Canada, and since it's not an indicator easily measured using open sources on social media, it should be dropped as a factor that could be considered in early warning research based on social media data.

Social and Cultural Roots

Education

The findings in the literature on the link between education and terrorism are counterintuitive. Terrorists seem to be *more* educated on average than the general population (Krueger and Maleckova, 2003). Magouirk, Atran, and Sageman (2008) studied terrorists belonging to the group *Jemaah Islamiyyah* and find that the majority of its members have some college or technical training. Despite this relatively advanced training, the majority were still employed in low-skill jobs.

Krueger and Maleckova provide an interesting hypothesis to explain this unexpected trend (2003, 142). The premise of their argument is that the more educated segments in any society are the segments we should expect to be the most engaged. And because terrorism is a *violent* form of political engagement, terrorists ought to be more educated than the general population.

Education can serve as a catalyst for terrorism through other mechanisms. Schools and other institutions of learning can become recruiting hubs for extremists. They could also become centers for the propagation of a violent ideology. These findings suggest that literacy rates are not reliable measures for evaluating the relationship between education and terrorism. Surely the type of education matters even more than the extent of education measured in years.

Evaluation. Determining how someone's education had an influence on their thinking and behaviour is not an area amenable to investigation using social media. Attributes such as level of education, the educating institution, and specialization might be. These attributes though are not sufficient for assessing the ideological and peer influences of an education. It is also reasonable to assume that Canadian public institutions are not hotbeds for violent extremism in the same way that Taliban madrassas might be. Educational indicators are therefore unlikely to be useful as early warning indicators.

Grievances (Narratives of)

Whenever leaders of Al-Qaeda make public statements to Western or Muslim audiences, they usually outline a long list of grievances to justify their violence. Most of these grievances are related to the foreign policy of the United States and its allies. This is not just a rhetorical device. Many surveys show that U.S. foreign policy is a significant source of grievances in the Middle East (Atran, 2004). A Defense Science Board report published following the 1996 terror attacks on U.S. military housing in Saudi Arabia finds that historical data show a strong correlation between America's overseas involvement and an increase in terrorist attacks against the United States (p. 74).

The sense of affront, injury, injustice, and indignity experienced by individuals can be a key factor that motivates them to commit acts of terrorism. Narratives of grievance sometimes originate in long-standing historical injuries, but recent events can rapidly develop into grievances as well. One of the most cited grievances by individuals involved in terrorism is humiliation (Kristof, 2002; Stern, 2003; Hoffman, 1998; Newman, 2006). Other related emotions include revenge, despair, and impotence. The basis for these grievances can be real or perceived. Political entrepreneurs use narratives of grievance to establish ideological incentives for action (Popkin 1987, p. 9), and to attract the greatest number of people to a particular cause. Collective grievances based on communal identities are a more powerful organizing force than individual injuries (Gupta 1990, p. 250; Crenshaw, 1998).

Evaluation. Reactions to current events are commonly expressed and debated on different social media platforms. Citizens exchange content, ideas, and arguments about these events that can congeal into narratives of grievance. Online social networks also support the diffusion of narratives of grievance. Monitoring social media content to track the development and diffusion of narratives of grievance amongst different Canadian demographics, including diaspora communities who are more sensitive to

foreign policy entanglements than the general population, could provide some utility for early warning and PVE. Likewise closer monitoring of more radical elements, who are known to ‘inspire’ and organize their followers into action, may have some potential **Operational Caveat:** Monitoring public social media streams of specific demographic groups for the purposes of public safety raises a host of ethical questions (See Box 2 above).

Social Ties

There is substantive agreement in the literature on the importance of social ties as mobilizing structures for terrorist action (Della Porta, 1995; Fernandez and McAdam, 1988; Koopmans, 1993; McAdam, 1986, 1999; Sageman 2004, 2008; Tarrow, 1995, 1998). Tilly considers these structures to be substantially more important as a causal factor than any cluster of preconditions (1978). Grievances and violent ideologies are irrelevant without the organizational structures that facilitate action.

The strength of relationships between family and friends appears to be more important than the strength of grievances or ideological faith in recruiting new members to terrorist groups.

Forty five percent of 1,214 Italian militants studied by Della Porta had personal ties to at least eight group members before joining their organization. Sageman also found that 75 percent of the 172 jihadists he identified had relational ties to individuals already involved in supporting terrorist activities. These scholars and others (McAdam, 1986, 1988; Snow, Zurcher, and Ekland-Olson, 1980) argue that the structure of relations between terrorist groups and new members is that of “bottom-up enlistment” rather than “top-down” recruitment. In other words, new members are joining because their friends are already members, not because they share the organization’s goals or ideology. Another interesting finding is that individuals with the weakest and fewest links to alternative networks are more likely to join a terrorist group than individuals with strong ties to other networks.

Evaluation. The identification, mapping, and analysis of extremist social networks online can be a very important tool for warning about Internet mobilizing structures that increase the likelihood of recruitment into violent extremist groups. Network structures can also be analyzed to identify key communicators and influencers in the network, key “inspirational content,” and other hallmarks of group affiliation, which could be useful for various counter-radicalization/counter-narrative strategies. **Operational Caveat:** the mapping of networks or audience spills over onto domestic soil, it can start to push up against legal and ethical considerations (see Box 2).

Ideology and Culture

Ideology increases the likelihood of terrorist violence by establishing a normative environment that justifies and legitimizes political violence within a collective (Gurr 1970, p. 155). There is substantive agreement in the literature that individuals are not born predisposed to violence and that a process of socialization into violence is necessary (Rhodes, 2000). This socialization process depends on the degree and scope of normative justification for violence within a particular group's culture. It also is a function of the historical utility of political violence -- i.e. the track record of achieving political ends through the use of violence.

The role of religion in contributing to a normative environment that supports political violence is a subject of debate in the literature. Juergensmeyer's (2001) widely referenced study examines five religious traditions and finds that religion on its own does not lead to violence. Only when norms for the use of violence are reinterpreted to serve the agenda of social and political movements does it become a contributing factor.

Al-Qaeda's emergence as a terrorist network on the global stage sharpened the focus on Islam. Many scholars argue that Islam is especially prone to violence because of its political character, historical legacy, and because it has not gone through the reformist period other religions have gone through (Lewis, 2002; Manji, 2004). However, an empirical study of British jihadists conducted by MI-5's behavioural science unit challenges this hypothesis as it finds that a strong religious identity in fact *protects* the individual from violent radicalization (Travis, 2008). Several hundred cases of Islamist extremists in the UK were analyzed in that same study and a large number of these cases were considered religious novices. Few were brought up in religious households, and many were illiterate about Islam. Canada's intelligence agency, CSIS, conducted its own assessment and concluded that "the data suggests that religiosity plays an important role - or at least cannot be disregarded - in the radicalization process" (CSIS, 2013, p.9).

Ideologies can also lay the normative groundwork for violence by encouraging a dichotomous worldview that creates a tightly knit "ingroup" which directs its hatred to an "outgroup" (Stern, 2003). This dichotomy can be between different religions, ethnicities, and interest groups: secular and religious; black and white; Islam and the West; traditional and modern; and so on.

Evaluation. Ideologies tend to have a distinct discourse that defines the identity of the "ingroup", its interests and grievances, its philosophy of change, and an "outgroup(s)" it is struggling against. The same discourse contains dominant narratives that make sense of the past and present. Analyzing the discourse of target radicalized groups by systematically reading their literature could assist in determining the extent to which their ideology increases the prospect of terrorism. Social media data could then be

scanned to identify content that resembles the discourse of target groups for further assessment and early warning.

Conclusion

The literature identifies a large number of factors that can increase the likelihood of radicalization and terrorism. Some of these factors are proximate causes, i.e. sparks and triggers that are more closely linked in time to terror incidents. Others are more remote and set the stage for violence by establishing a conducive environment. Root factors are the remote causes. In an early warning application, they could be used to prioritize monitoring resources on certain countries, cities, or communities where terrorism is a greater risk because of a hospitable environment.

A large number of root causes are considered environmental preconditions for terrorism. They can be categorized under three high-level causes: (1) perceived grievances that provide the motivation for violence; (2) norms that legitimize the use of violence; and (3) social organization mechanisms that provide the mobilizing structures for violence.

There is substantive agreement around a number of important factors: Perceptions of state illegitimacy, state weakness, and state vulnerability provide violent extremists with opportunities for terrorist action. Government repression is considered an important condition for terrorism in domestic contexts. Researchers agree that weak and transitioning democracies, as well as countries undergoing rapid modernization, are more vulnerable to terrorism. Curtailing civil and political liberties also has a radicalizing effect.

The role of political freedom, poverty, and education is debated in the literature. Part of this debate is about how much they matter. Some empirical studies, however, cast doubt on whether they matter at all. This review considered many root factors, including those that are debated. A root cause is considered relevant for potential early warning application if: it applies in the Canadian context; it is theoretically possible to operationalize and measure in cyberspace; and, the data needed for these measures is available using open sources. Table 4.1 provides a summary assessment. It suggests that social media analysis could be potentially useful to identify: subcultures that encourage violence; online social networks that support the organization and coordination of this violence; and shared narratives of grievance that inspire groups or individuals to commit acts of violence.

Table 4.1
Root Causes: Potential for Early Warning

Root Cause	Canadian Relevance	Cyber Applicability	Open Source	Operational Caveat
State illegitimacy	X	☐	☐	
State repression	X	☐	☐	
Modernization	X	X	X	
Poverty	X	X	X	
Education	X	X	X	
Grievances (Narratives of)	☐	☐	☐	Privacy/profiling** considerations
Social Ties	☐	☐	☐	Privacy/profiling** considerations
Ideology and Culture	☐	☐	☐	Privacy/profiling** considerations

Note: X = Not Applicable , ☐ = Relevant for Early Warning, **Highlight = Open Source Social Media Collection Potential**

** Especially in a domestic context, how these indicators are operationalized into research and methodological approaches could raise concerns from a privacy/profiling perspective. As discussed in Box 2 of this paper, these issues require concerned public and policy engagement.

V. Individual Causes of Violent Extremism

Every social science and humanities discipline has its own conceptual framework from which to analyze why and how individuals support or engage in violent extremism. Psychological frameworks focus on attributes of the individual that might lead to participation in violent extremist acts. These attributes might include traumatic experiences, mental illness, or specific personality traits. Also within the same discipline, social psychology studies group dynamics and peer pressure as an influencing factor on individual behavior. Rational-choice paradigms examine how interests, preferences, rewards, opportunities, and constraints drive terrorism as a strategy of a rational actor.

Other disciplines model terrorist behavior as it is structured by the social environment. Sociological approaches study social relationships, social interactions, and culture to try and understand their role. Political science theories focus on the role of the political environment. Many political studies analyze terrorist behavior in the context of foreign occupation and liberation struggles. Cultural studies often examine religion, especially Islam, as a radicalizing force.

The next section reviews the findings of this literature and compile a multidisciplinary list of individual factors that may increase the likelihood that people support or engage in acts of terrorism. We will then briefly consider whether these factors could be monitored online using open source social media analytical techniques.

Social-Level Factors

Social-Psychological Processes

Group interactions, through social-psychological processes, play a key role in shaping the beliefs, preferences, incentives, and constraints that constitute the logic of human action. The social-psychological processes that have proved relevant in explaining support for violent extremism include: (1) “out-group” demonization; (2) socialization into conformity; (3) obedience through group cohesion and charismatic influence; (4) group think; and (5) the diffusion of responsibility for violence from the individual to the group.

Mark Sageman’s seminal study of jihadist networks provides a detailed description of how social interaction in cliques played a key role in the radicalization of young Muslims living or studying in the West (2004). Bakker’s own research analyzed the case studies of 242 jihadis living in Europe and determined that networks of relatives and friends were key in the radicalization of 35 percent of his sample (2006). The same social networks were instrumental in leading Saudi men to join jihadist campaigns in both Afghanistan and Iraq (Hegghammer 2006, 2007), and also with South Asian and Filipino militants (Cragin et al. 2006).

Some terrorist organizations may actively try to fill the ranks of their group with new members through recruitment and indoctrination. Top-down recruitment is one of the social-level factors that increases an individual's exposure to the social-psychological processes that encourage violent extremism. Al-Qaeda in Saudi Arabia systematically held informal gatherings in mosques, private homes, and religious summer camps to identify and vet new recruits (Zavis, 2008). Religious conversations morphed into political discussions about America's invasion of Afghanistan and Iraq and the atrocities committed by U.S. troops in these countries. These closed-group interactions provided Al-Qaeda in Iraq with many Saudi recruits (Hegghammer, 2007). Similar top-down patterns exist with the Liberation Tigers of Tamil (LTTE) who target Tamil schools, as well as the Kurdistan Workers Party who send recruiters to cultural centers (Pedahzur, 2005).

The recent trend of "home-grown" terrorism in the West clearly illustrates another pattern in social interactions that leads to violent extremism, namely bottom-up enlistment. Individuals involved in these terror attacks were socialized into violence not through the groups and training camps managed by recruiters, but through their very own peer groups. Researchers found that families (Cragin et al., 2006), charismatic spiritual leaders (Sageman, 2004), prisons (Lia and Kjek, 2001), and the internet (Sageman, 2008), can all radicalize individuals through socialization. And whereas Bakker (2006) finds no links between 242 European jihadis and any global terror network, researchers have noted the degree to which violent extremist groups have surfaced on mainstream public platforms – YouTube, Facebook and Twitter – to "inspire radicalize and issue a 'call to action' to those vulnerable to extremist messaging and narratives," (Briggs, 2011). There is an active research hypothesis that "From right-wing to al-Qaeda inspired extremism, social media may 'lower the bar' for participation, making involvement of low-level, semi-radicalized or previously disengaged individuals a new feature of transnational extremist conversations and movements," (Bartlett and Miller, 2013).

Evaluation. There is great potential in monitoring for socialization as a radicalizing risk factor using social media data. Extremist groups of all stripes use the Internet to spread their extremist ideology and recruit new members and supporters. Various methods can be used to identify recruiters who are active on the Internet and to trace their potentially "at risk" audiences through social network analysis, and (to some degree) geo-location. Extremist websites, blogs, chatrooms, Facebook pages, Twitter accounts, forums, and YouTube channels can all be monitored and analyzed to identify patterns of radical socialization and to highlight individuals and content that appears to be playing a key role in attracting potential recruits. Social network analysis can also help identify bottom-up peer group enlistment based on the content being exchanged over these networks, or through the targeted evaluation of the online social networks of known radicals. Hallmark or inspirational content identification can also be important information developing effective counter-narrative efforts. **Operational Caveat:** When the mapping

of networks or audience spills over onto domestic soil, it can start to push up against legal and ethnical considerations (see Box 2 above).

Individual-Level Factors

Seeking Change

Research interviews with violent extremists and their public statements suggest that many of them radicalize because of a strong desire for change. The literature categorizes change objectives into three broad groups: (1) political change; (2) religious change; and (3) change around single-issues. Revolutionary political aims could trigger the radicalization of many young men and women. The overthrow of the capitalist social and economic system is a change objective shared by radicals of different convictions (Post, Ruby, and Shaw, 2002). Another important political motivator for terrorism is the establishment of an independent state and the removal of actual or perceived foreign occupiers (Horowitz, 2007; Robert Pape, 2003).

The Jihadist global movement has inspired an ideology that advocates for sweeping societal change based on a particular religious interpretation. Muslim extremists joining Al-Qaeda and other terror networks seek to re-establish the Muslim Caliphate to unite all Muslims under one political regime that rules by sharia' law. A study of homegrown jihadis undertaken by the New York Police Department found that nearly all individuals in its sample from the United States and Europe were motivated by the establishment of a worldwide Caliphate (Silber and Blatt, 2007).

Not all terrorists are motivated by revolutionary change. Some extremists seek change around a single issue. For example, the violent elements of the environmental movement are primarily with ecological preservation and the protection of animals. Anti-abortion terrorists who bomb or burn down abortion clinics are mostly focused on intimidating abortion providers. Another single issue motivator is the experience of discrimination. Many radicals associate this experience with existing social institutions and seek to eliminate discrimination by removing the ruling regime.

Grievances

Studies reveal that radicalization in some individuals can be attributed to grievances. In some cases these grievances are personal and stem from direct injury to the individual, their family or friends. In others the grievance originates from a harm that is inflicted on a collective group the individual closely associates with. In both cases, it is the *perception* of injury, whether warranted or not, that provides the fuel for radicalization. Terrorism becomes a way to exact revenge in the case of personal grievances, and a means to defend the group when the grievances are collective.

Personal abuse by government authorities or occupying powers has been identified as a common precondition amongst terrorist actors in different political environments. Interviews conducted with the families of 34 deceased Chechen terrorists found that the vast majority of them were either tortured themselves or had personally witnessed the beating or death of close family members (Speckhard and Ahkmedova, 2006). Actions of the Israeli military that have led to the death of friends or family members is similarly linked to the grievances that have motivated Palestinian terrorism (Argo, 2004; Soibelman, 2004). The violence of some ETA separatists in Spain was also motivated by the political reprisals perpetrated by governing authorities on close family members (Alonso, 2006, p. 195). The same story applies in Southeast Asia (Cragin et al., 2006) and in the case of the IRA (Alonso, 2006).

The violence of “homegrown” Islamist extremists in the West is the exemplary case of terrorism motivated by collective grievances. Despite living in the West, many of these individuals still closely identify with their Muslim heritage and a broader Muslim community. Outraged either by the perception of systematic discrimination at home, or by what is considered an attack on fellow Muslims abroad, individuals seek to defend their collective group through violence that they believe will alter the abusive policies of governing authorities. Nesser (2006) studied the general motivations that seem to drive European terror incidents. He notes that terrorists in Europe often cited the Israeli occupation of Palestine, France’s support for Algeria’s authoritarian regime, the war in Iraq, and Russia’s military operation in Chechnya as reasons for their involvement in terrorism.

Evaluation. Social media intelligence is more likely to be effective in monitoring for narratives of collective grievance than in monitoring for personal ones. It constitutes a part of a larger public space where group identities, interests, and grievances are articulated and contested. It is especially an important haven for marginal narratives, including radical ones, that conflict with the identities and interests of the mainstream. Radical groups use it to distribute content intended to inflame grievances as a way to recruit new members. Therefore, there could be great value in monitoring social media to detect patterns of grievance formation and narrative diffusion. Various methods and technologies could be applied to detect content and networks that are relevant in the diffusion of grievances, and to assess the extent to which individuals identify with these grievances. Such an evaluation could be a key input that feeds into a larger risk assessment that takes into account other factors that together increase the likelihood of radicalization. **Operational Caveat:** When the mapping of networks, radicalizing content and audience “identification” with that content spills over onto domestic soil, it can start to push up against significant ethical considerations and normative concerns (see Box 2 above).

Rewards

Studies in the discipline of psychology have examined the phenomenon of terrorism using the paradigm of behaviorism. This paradigm focuses on the consequences of action and determines which consequences can be considered rewards that can incentivize behavior and which are perceived as punishments that serve as a deterrence. The literature has identified the following rewards as motivators that can increase the likelihood that individuals participate in terrorism: (1) financial rewards; (2) religious rewards; (3) social status; and (4) excitement.

The literature provides interesting evidence that suggests that financial rewards may play a role in incentivizing terrorism. Many members of Al-Qaeda used to receive monthly salaries (Wright, 2006). Money gained from kidnapping ransoms seems to have bolstered the recruitment ability of the Abu Sayyaf terror group in the Philippines. New members included unemployed farmers and youths looking to get their hands on easy money (Cragin et al., 2006). Studies have also shown that successful deradicalization programs often involve economic incentives (Cragin and Chalk, 2003). The U.S. military was able to reduce the number of detainees in its Iraqi detention centers by providing a monthly stipend of \$200 for six months to young men who were previously receiving a similar amount to support Al-Qaeda's terrorism activities in Iraq (Bowman, 2008).

In the context of suicide tourism, the most cited religious reward for Muslims is martyrdom. The benefits of martyrdom come in the afterlife and include the forgiveness of all sins, and an eternity in heaven indulging in all kinds of pleasures (Soibelman, 2004). There is plenty of evidence that suicide terrorists are incentivized by martyrdom. In Palestine, suicide bombings are referred to as "martyrdom operations." Studies analyzing last wills and videotaped statements found a "fervent belief" in the martyrdom concept among suicide bombers. The same beliefs and incentives were found in Saudi and Iraqi militants (Hegghammer, 2007).

In societies where the prevailing culture reveres militant actors as heroes, the participation in terrorism can elevate an individual's status. During the summer of 2001 after the breakout of the second intifada, public support for attacks on Israeli civilians reached 70% amongst the Palestinian population (Soibelman, 2004). Suicide bombers there revel in celebratory rituals while they prepare for missions. The social celebration of their acts may even reach a peak after their death with posters, websites, exhibits, and mourning celebrations (Hafez, 2006). Interviews with incarcerated militant operators highlight the importance of this elevated social status as an incentive for terrorism (Post, Sprinzak, and Denny, 2003).

If the life of a terrorist is anything, it is certainly not dull. Hegghammer (2007) found that many Saudi jihadists went to fight the Soviets alongside the mujahideen in Afghanistan out of a sense of "adventure". IRA members also seem to be motivated by the excitement of using guns they only ever saw on television (Alonso, 2006).

Evaluation. Social media analysis may provide useful data points for exploring whether the reward incentive of violent extremism is a risk factor for specific individuals or online networks of people. Analyzing the online interactions and public communications of individuals may assist in evaluating whether they hold beliefs that promise rewards -- material, spiritual, or otherworldly -- for violent action in the name of a cause. Another opportunity for using social media analysis in this area could be tracing content that encourages such reward perceptions and identifying individuals vulnerable to its impact through exposure. Social network analysis could also be used to identify groups where violence is revered or is considered adventurous and exciting. **Operational Caveat:** When the mapping of networks or audiences spills over onto domestic soil, and when investigation seeks to understand individual engagement and vulnerability factors, it can start to push up against legal and ethical considerations (see Box 2).

VI Perspective

Violent extremists do not fit a general profile. This is the most significant finding in the literature focused on individual explanations for terrorism. Empirical studies clearly indicate that terrorists live a “normal” life and cannot be distinguished from the general population. Poverty, low levels of education, and mental illness are not generally correlated with terrorism.

Researchers agree that terrorists are not inherently violent but are rather socialized into accepting violence as a legitimate path. Being part of a group gives individuals the confidence that they are on the right path. It also provides them with the courage to act violently. The dehumanization of the victims of terrorism that facilitates violence against them is also a byproduct of social-psychological processes that occur within groups.

Socialization, on its own, is not a sufficient condition for terrorism. People also need an incentive. Personal and collective grievances provide a very strong incentive for violence. A desire to achieve change is another incentive common amongst terrorists. There is also evidence that terrorism can be motivated by rewards. Studies have shown that financial, social, or religious rewards can provide an incentive for joining extremist groups. Even excitement and adventure is cited as a motive by some individuals.

Social media analysis offers significant prospects generating data and insight that could support early detection of individuals at risk of radicalization on the path to violent extremism. It has the potential to identify and enumerate social networks in cyber and physical space that promote narratives of violent extremism or dangerous speech (Benesch, 2012), and to trace who is actively engaging with it online. Content analysis can be useful for picking up on narratives of collective grievance that have also been used to frame or justify violence. Online subcultures with values, ideas, and dynamics that provide some kind of reward for violent action can also be identified along with the individuals most vulnerable to these rewards. These things are all possible. But, as has

been stressed throughout this paper, operationalizing this research agenda in a rigorous and targeted manner can run quickly afoul of privacy regulations and/or expectations. Policy and legal frameworks on open source social media research and data-mining need to catch up to the current state of capabilities.

Table 5.1 provides a summary assessment of the most interesting individual factors that can be monitored online.

Table 5.1
Individual Causes: Potential for Early Warning

Cause	Canadian Relevance	Cyber Applicability	Open Source	Operational Caveat
Socialization	✓	✓	✓	Privacy/profiling** considerations
Effecting Change	✓	✓	✓	Privacy/profiling** considerations
Individual Grievances	✓	X	X	
Collective Grievances	✓	✓	✓	Privacy/profiling** considerations
Financial Rewards	✓	X	X	
Religious Rewards	✓	✓	✓	Privacy/profiling** considerations
Social Rewards	✓	✓	✓	Privacy/profiling considerations
Excitement	✓	✓	✓	Privacy/profiling considerations

Note: X = Not Applicable , □ = Relevant for Early Warning, **Highlight = Open Source Social Media Collection Potential**

** Especially in a domestic context, how these indicators are operationalized into research and methodological approaches could raise concerns from a privacy/profiling perspective. As discussed in Box 2 of this paper, these issues require concerned public and policy engagement.

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