THE RADICALIZATION OF HOMEGROWN TERRORISTS: A SOCIAL-PERSONALITY MODEL

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May 2012

A thesis submitted to McGill University in partial fulfillment of the requirement of the degree of Doctor of Philosophy.

ACKNOWLEDGEMENTS

Innumerable people have contributed in various ways to helping me complete this dissertation.

Through highs and lows, my doctoral supervisor Donald Taylor has guided me with an invisible hand and unconditional confidence. Under his mentorship, I learned how to produce a well-turned phrase. Thank you Don.

I also thank professors John Lydon, Mark Baldwin, and Rex Brynen who have provided guidance, suggestions, and valuable criticisms. I am also grateful to Rhonda Amsel, who was always welcoming and ready to explain statistics.

My colleagues from the Taylor lab, Julie Caouette, Benjamin Giguère, Régine Debrosse, Megan Cooper, and Joelle Laplante have been tremendously helpful. Others in the psychology department have also contributed to my research: Joy McLure, Lisa Linardatos, and Sara Etchison.

I am grateful to Judi Young and Giovanna Locascio for helping my department-related matters run smoothly. I thank Tal Zelinger, Persia Etemadi, Christine Gros, Sonja Pavic, Alexandra Prior, Kristen Murphy, and Atalaya Redmond for their research assistance.

Outside of academia, many have provided invaluable expertise. Phil, Chantal, and Brett, who work for the Canadian government, have guided my research towards relevance. Haula Noor, Siti Jazila, and Ahmed Bayhaqi have been gracious, generous hosts during my visits to Indonesia. Closer to home, I gratefully acknowledge Muhammad Robert Heft, Mubin Shaikh, Ali Mohammed,

and all those who have helped me better understand Islam and the Muslims communities of Canada.

Persevering through my doctoral years would not have been possible without the support of my good friends Yann and Marie, Michel and Marie, Steph and Cat, Nat and Matt, Vincent, the Alexs', and Sonia. Inestimable was the absolute certainty held by my aunt Didi, my mother, and my father, that I could do this.

Lastly and most importantly, I want to thank my loving wife, Esther, for believing, supporting, helping, enduring, and sharing. To her I dedicate this thesis.

CONTRIBUTION OF AUTHORS

As the first author on all three manuscripts, I took the lead role in the development, design, implementation, and interpretation of all the studies. I conducted the literature reviews and the data analyses. I lead the writing of all three manuscripts. Due to his substantial inputs, my supervisor Donald M. Taylor is second author on each manuscript.

Manuscript 1 was published in the journal *Terrorism and Political Violence* (see King & Taylor, 2011). Moreover, sections pertaining to the literature review in Manuscript 3 appear in a report submitted to the Canadian Security and Intelligence Service.

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ABSTRACT

A new type of terrorist has emerged in the last decade. Inspired by jihadi ideology, these individuals are born and raised in the very country they wish to attack. Such homegrown terrorism has become the primary concern of security agencies in Western countries. While many theories purport to describe the exact stages involved in the radicalization leading to homegrown terrorism, very little empirical data exists on the psychology of those who become radicalized. In the present dissertation, I propose and test a novel model of the social psychological factors contributing to radicalization: the two-factor model of homegrown terrorism. The origins of the two-factor model are discussed in Manuscript 1, where I reviewed five major models of radicalization and analyzed them through the lens of terrorism studies and social psychology. This analysis yielded several avenues for future research, including the importance of the *jihadi narrative* and of personality traits. These two themes then formed the basis of the two-factor model of homegrown terrorism tested in Manuscript 2. In order to derive specific, testable hypotheses, social identity theory was used to deconstruct the jihadi narrative and social dominance theory was used to inform the theme of personality. I hypothesized that the jihadi narrative, which underscores a threat to Islam, is interpreted on an individual level as a threat to collective pride, and that low social dominance orientation (SDO) is linked to increased support for the use of violence. Together, a threat to collective pride and low SDO formed the two-factor model of homegrown terrorism. The initial test of the two-factor model consisted of a survey conducted with Canadian Muslims. Results supported one

factor in the model but not the other. Respondents who perceived a greater threat to Islam reported less collective pride, which in turn lead to more aggressive action tendencies towards non-Muslim Canadians. Moreover, it was high SDO, rather than low SDO, that were linked to more aggressive action tendencies towards non-Muslim Canadians. A similar pattern of results was found in two laboratory experiments where participants were deceived into thinking that group members had either truly planned, or successfully carried out, acts of terrorism. When this violence was presented as a response against a threat to group pride, strongly identified group members viewed terrorism more positively. Moreover, during these experiments, higher levels of SDO were associated with more positive appraisals of terrorism. Manuscript 3 describes additional testing of the link between high SDO and terrorism. Capitalizing on an annual large-scale civil-war simulation, I investigated if participants' personality characteristics predicted their selection of simulation role. For two consecutive years, students who requested to enact terrorists and insurgents rated significantly higher on SDO than students requesting other roles. Overall, the results identify collective pride and high SDO as key factors in the radicalization process leading to terrorism. Implications for future research and counter-terrorism strategies are discussed.

RÉSUMÉ

Un nouveau type de terroristes est apparu au cours de la dernière décennie. Ces individus, inspirés par l'idéologie djihadiste, tentent de s'attaquer au pays local dans lequel ils sont nés et ont grandi. Ce terrorisme local est au cœur des préoccupations des agences de sécurité occidentales. Bien que de nombreuses théories visent à décrire les étapes du processus de radicalisation menant au terrorisme local, très peu de données empiriques existent concernant la psychologie de ceux qui se radicalisent. Dans cette thèse doctorale, j'adopte une perspective fondée sur la psychologie sociale pour élaborer et tester un nouveau modèle théorique de la radicalisation : le modèle bifactoriel du terrorisme local. Les origines du modèle bifactoriel font l'objet du Manuscrit 1, dans lequel cinq grands modèles théoriques de la radicalisation sont analysés par le bais de la psychologie sociale et d'études sur le terrorisme. Cette analyse a généré plusieurs avenues de recherche potentielles, incluant l'importance du récit djihadiste et des traits de personnalité du terroriste. Ces deux éléments ont ensuite formé la base du modèle bifactoriel du terrorisme local qui a été testé dans le Manuscrit 2. Afin de tirer des hypothèses précises et vérifiables, la théorie de l'identité sociale a été appliquée afin de déconstruire le récit djihadiste et la théorie de la dominance sociale a alimenté la réflexion portant sur les traits de personnalité du terroriste. J'ai proposé l'hypothèse que le récit djihadiste, qui souligne la notion de menace à l'Islam, soit interprété à un niveau personnel comme une menace à l'estime collective. J'ai également proposé l'hypothèse qu'une faible orientation à la dominance sociale (ODS) soit reliée à un soutien accru pour l'utilisation de la

violence. Ensemble, la menace à l'estime collective et une ODS faible composent le modèle bifactoriel du terrorisme local. Le modèle bifactoriel a initialement été testé grâce à un sondage effectué auprès de Canadiens musulmans. Les résultats ont confirmé un seul des deux facteurs du modèle : les participants qui percevaient une menace à l'Islam se disaient moins fiers de leur groupe, ce qui à son tour était associé à une tendance agressive envers les Canadiens non-musulmans plus élevée. De plus, c'était une ODS forte, plutôt que faible, qui menait à une tendance plus élevée à vouloir poser des gestes agressifs envers les Canadiens non-musulmans. Des résultats similaires ont été obtenus lors de deux études expérimentales où les participants étaient amenés à croire que des membres de leur groupe avaient soit vraisemblablement planifié, ou véritablement réussi, à perpétrer des actes terroristes. Lorsque cette violence était présentée comme étant une réponse face à une menace à l'estime collective, les membres qui s'identifiaient plus fortement à leur groupe percevaient le terrorisme plus positivement. De plus, dans ces deux études expérimentales, une ODS forte était associée à une évaluation plus positive du terrorisme. Le Manuscrit 3 décrit une autre évaluation du lien entre l'ODS et le terrorisme. Ainsi, profitant de l'occasion unique offerte par une simulation à grande échelle de guerre civile, j'ai cherché à savoir si les traits de personnalité des participants prédiraient le rôle qu'ils allaient choisir lors de la simulation. Durant deux années consécutives, les participants qui souhaitaient tenir les rôles de terroristes et d'insurgés présentaient une ODS plus forte que les participants qui souhaitaient tenir d'autres rôles lors de ces simulations. Dans l'ensemble, les résultats de mes études indiquent que l'estime

collective et l'ODS sont deux facteurs clés dans le processus de radicalisation qui mène au terrorisme. Les implications de ces résultats pour la recherche future et pour les stratégies anti-terrorisme font l'objet de discussion.

"*You have trivialized our movement by your mundane analysis.*

May God have mercy on you."

Ayman al-Zawahiri, current leader of Al-Qaeda

(Quoted in Wright, 2006a, p. 68)

GENERAL INTRODUCTION

Each year, the Canadian Association for Security and Intelligence Studies holds a conference in Ottawa. This is the largest gathering in Canada of intelligence experts, academics, government employees, and military personnel focused on national security and terrorism. As has become customary at this conference, a senior cadre of Canada's spy agency delivers the keynote address. At the 2011 conference, held in November, the keynote address was given by Andy Allis, the assistant director of policy and strategic partnerships for the Canadian Security and Intelligence Service. During his address, Allis underscored:

> *"*Frankly speaking, security agencies do not yet fully understand why and how a seemingly ordinary young man or woman can grow up in Canada yet come to reject the Western, liberal and democratic values that underpin Canadian identity — instead replacing them with the violent, anti-Western ideology of Al Qaeda*."*

This psychological transformation described by Allis is commonly referred to as "radicalization". In its literal sense, radicalization does not always lead to problematic behavior. Devoid of context, radicalization simply indicates a deviation from prevailing norms. Because of their anti-normative attitudes and behaviors, Charles Darwin, Sigmund Freud, and Elvis Presley have all been labeled radicals. So have Dr Martin Luther King and Mahatma Gandhi whose political radicalization instigated important social changes. In the current national

security context, however, “radicalization” has a different, decidedly negative, more specific meaning.

As Allis described, radicalization points to the adoption of an ideology that legitimizes violence. Currently, this ideology is most often the jihadi ideology, of which Al Qaeda is the figurehead. During his keynote address, Allis discussed two other aspects of radicalization that, when highlighted together, are cause for great concern. One aspect is that the radicalization of young Canadians has become one of the top national security threats facing Canada. The other aspect, as Allis notes, is that radicalization is poorly understood. This *radicalization*, the misunderstood psychological transformations that precede acts of terrorism, is the topic of the present doctoral dissertation.

The Precursors of my Doctoral Research

Few academic careers have been devoted to researching terrorism. Despite being a rare topic of study, a steady –albeit small– stream of research and theorizing has been ongoing for decades. Over this period of time, many explanations for terrorism have been proposed. In the field of psychology, theorizing can be summarized as successive waves of theories being later challenged by empirical evidence.

The earliest psychological explanations treated terrorism as acts conducted by insane individuals: the abnormal behaviors were attributed to abnormalities of the mind. Such explanations are exemplified by Morf’s (1970) description of members of the French-Canadian terrorist group, the Front de Libération du Québec, as “generally rejecting the father and values he represents,” while being

driven by "sexual lust, craving for notoriety, and thirst for power." To this day, such remotely performed diagnoses continue to be made (e.g. Razzaque, 2008), and this despite much evidence that psychological maladies are poor predictors of participation in collective violence (Post, 1990). Evidence against such psychological maladies first surfaced in research with members of the National Liberation Front in Algeria, where no apparent mental illnesses were found (Crenshaw, 1978). These findings were later corroborated with clinical assessments of members of the Irish Republican Army (Heskin, 1984), and more recently with both secular and radical Islamist terrorists (Post, Sprinzak, & Denny, 2003). The accumulated evidence has led to the rejection of the psychopathology model of terrorism by experts in disciplines as varied as political science (Pape, 2003), sociology (Tilly, 2003), clinical psychology (Ruby, 2002) and psychiatry (Post, 1984).

Once mental illness was refuted as a predictor, psychologists turned their attention to social factors as potential explanations for terrorism. This shift has generally produced theories with a focus on poverty, where the awareness of one's relative disadvantage vis-à-vis another group may radicalize a person, and potentially lead to terrorism (Borum, 2003; Moghaddam, 2005). However, empirical studies focusing on poverty and relative deprivation have yielded mixed results, and there is evidence that most people engaged in terrorism are not lacking in terms of economic opportunity (Atran 2003; Hoffman, 2002). In one study focused on the global jihadi terrorism movement, Sageman (2004) tracked

down demographic information for 102 jihadists: three fourths of his sample were from the upper or middle classes.

The Rationale for my Doctoral Research

Up to this point, research had successfully confirmed that a handful of factors, such as psychopathology and poverty, previously thought to be involved in the radicalization process actually did not predict one's involvement in terrorism. Although these findings corrected some established myths about radicalization, the psychological motivations leading to terrorism remained largely unknown (Horgan, 2005). This was essentially the status of the small but growing field of the psychology of terrorism when a historical shift brought about new urgency regarding the need to understand radicalization.

In July 2005, suicide bombers attacked the public transport system of London, killing 52 people and injuring hundreds. All four suicide-bombers had grown up in England. In late 2005 and early 2006, a total of 22 men were arrested in Melbourne and Sydney on charges of conspiring to perform acts of terrorism; most were born in Australia. In June 2006, authorities arrested 18 Canadians who were planning to kill politicians and bomb various symbolic landmarks across Ontario. A few months later, in August, other British-born men were arrested for plotting to detonate liquid explosives on multiple airliners travelling from the United Kingdom to North America.

A new wave of terrorism had begun. Compared to the previous wave of *transnational* terrorism, where people plot to attack a foreign country, the new wave was *homegrown*, characterized by perpetrators who are born and raised in

the very country they wish to attack. Specifically, the perpetrators were born in Western countries. The motivations to conduct terrorism could no longer be explained away with cultural differences and misunderstandings. It became imperative that radicalization be better understood.

I started graduate school in 2005, as western governments, media and the public struggled to understand how fellow citizens could perpetrate terrorism in their homeland. Responding to the mounting pressure, academics and government researchers developed plausible theories depicting how young westerners became radicalized. Although insightful, these theories all shared one important limitation: none were based on data. In hindsight, this lack of data was the single most influential factor shaping my doctoral research.

My training in social psychology taught me the importance of rigorous data collection, analysis, and interpretation. Yet data, especially primary-source data, was a rarity in the field of terrorism studies. Although I familiarized myself with the various, often disparate theories of radicalization, there was little foundational data on which I could build a program of research. To build this foundation, I needed data. To find this data, I sought out the people who possessed it, and I began field research.

The Foundations of my Doctoral Research

During the earlier stages of my doctoral research, fellowships from the Canadian International Development Agency enabled me to conduct field research in Indonesia. During months of networking and learning Indonesian, I successfully brokered meetings with several members of Jema'ah Islamiyah (JI), a

jihadi organization based in Indonesia. JI is most notorious for its 2002 bombings of a nightclub on the resort island of Bali. In addition, JI has also been blamed for the coordinated bombings of churches in multiple cities (24 December 2000), the bombing of the Jakarta Stock Exchange (13 September 2000), the Marriott hotel bombing (5 August 2003), the Australian embassy bombing (9 September 2004), and the bombings of two hotels in Jakarta (17 July 2009).

I interviewed several members of JI, all of whom had similar radicalization trajectories. Each joined the Afghan jihad against the Soviets during the 1980s alongside fellow fighters who would later become Al Qaeda members. After the Soviets' retreat from Afghanistan, each returned to Indonesia to continue their mission of ridding their country from the enemies of Islam. One individual I interviewed rose through the ranks of JI to be a regional commander, and claimed to have trained hundreds of fighters. Although officially members of JI, each joined or trained with other jihadi organizations in the region, such as Abu Sayyaf in the Philippines. From these interviews, and from interviews with close relatives of JI members (see King, Noor, & Taylor, 2011), it became clear that organizational memberships were less important than many researchers –including I– had previously thought. To these dedicated fighters, organizations were simply a platform enabling them to fight a common threat.

During the later stages of my doctoral research, I spent a great deal of time in the Muslim communities of Toronto, Ottawa, and Montreal (see Bartlett, Birdwell, & King, 2010; King & Mohammed, 2011). Through several helpful intermediaries, I met with individuals who had sympathized with jihadi ideology.

One young man travelled to Afghanistan to volunteer. Another went to Iraq during the "shock and awe" phase of the American invasion. Yet another fought alongside Somalia's jihadists. Not all sympathizers travelled outside North America, but all had at some point considered the legitimacy of conducting violence to defend Islam. Through their words, I discovered a common narrative. This narrative emphasized a global conspiracy against Islam led by America, Israel, and their allies. Islam was under attack, and although very few Muslims I met had experienced threat on a personal level, each could list countless events that supported their common allegation: the invasion of Iraq, the war in Afghanistan, the West's steadfast support for Israel's belligerence, the Sharia law debacle in Ontario (see Mallan, 2004), religious profiling, discrimination.

These field experiences heavily influenced my research. The patterns that emerged across field interviews were aligned with more general, social psychological theories. This led to testable hypotheses that could be investigated by laboratory experimentation. The resulting experimental findings could then be verified in the field. This cycle of research, between field and laboratory, forced me to constantly reconsider my conceptualization of radicalization. During my six years of Masters and doctoral research, I reached many conclusions about radicalization that I was later forced to abandon because they either failed empirical testing in the laboratory, or failed validity testing in the field. In the present dissertation, I offer two conclusions that have passed both tests. The first conclusion is that radicalization can be best understood through researching general social psychological factors, rather than focusing on the intricacies of a

particular ideology. The second conclusion is that personality characteristics should be considered as a significant antecedent to the radicalization process. As my doctoral research is based on these two conclusions, each is discussed in more detail next.

Conclusion 1: Research must focus more on psychology, less on ideology.

It is intuitive to declare ideology as the cause for terrorism, especially when terrorism is conducted in the name of an ideology. Ideology is also more salient, and more accessible, when attempting to determine what motivated an individual to conduct terrorism. For example, in trying to understand the radicalization experienced by a jihadist, it is often easier to access books authored by jihadi scholars, lectures given by jihadi veterans, and jihadi chat rooms on the Internet, than it is to directly ask the jihadist. Because of this salience, however, the role of ideology may be overestimated, or at least misrepresented, in depictions of the radicalization process.

This is not to say that ideologies such as jihadism should be discounted. The nuance I am advocating, rather, is to change our conception about *how* ideology elicits violence. Concerning jihadism, many researchers attribute its effectiveness to the specifics of the ideology, that is, the intricate Islamic jurisprudence surrounding the permissibility of conducting violence (for example, see Brachman, 2008; Quiggin, 2009). From this perspective, engaging in violence seemingly results from a logical, even technical deliberation. While this might have applied to previous, more pious cohorts of jihadists, such as those who

planned 9/11, the current cohort of homegrown jihadists is reportedly less motivated by religion, and less concerned by its technicalities (Atran, 2010, p.115; Sageman, 2008a). Throughout my conversations with jihadi sympathizers, rarely did anyone refer to detailed Islamic scholarship sanctioning violent jihad. Instead, most justified violence by mentioning a much broader theme: the global threat facing Islam.

Here, I realized that jihadi ideology promotes a "story" about Muslims, a collective interpretation of world events that emphasizes a global conspiracy against Islam. This story, which I will refer to as the *jihadi narrative*, emphasizes a group threat. Jihadists' legitimization of violence was not technical; it was reactionary. Moreover, the threat emphasized by the jihadi narrative elicited a response that social psychology was well positioned to answer. Clearly, understanding this narrative of threat and the response it elicits, as opposed to focusing on the intricacies of jihadi ideology, has greater potential to increase our understanding of the radicalization process.

Conclusion 2: Research should consider the role of personality.

Many psychologists have claimed that individuals who engage in terrorism have no distinct personality characteristics (Horgan, 2005; Kruglanski & Fishman, 2009). This claim has circulated so widely among researchers that the irrelevance of personality to radicalization has become conventional wisdom in the field of terrorism studies.

The conventional wisdom about personality and terrorism, however, contradicts the conventional wisdom about personality and behavior in general.

Many established psychological models of behavior include personality variables (e.g. Ajzen & Fishben, 1980). Indeed, it is now widely accepted that personality and situational variables interact to cause behavior (Webster, 2009).

Moreover, very few studies have researched the link between personality and terrorism. Actually, at the time of writing, the academic literature contained no data to support the claim that individuals who engage in terrorism cannot be differentiated, in terms of their personalities, from individuals who do not engage in terrorism. It thus remains possible that "terrorists" do have distinct personality characteristics. For these reasons, I have concluded that personality characteristics must be considered as a potential factor in the radicalization process.

The Product of my Doctoral Research

These two conclusions, about narratives of threat and personality characteristics, have been as much a *product* of my research as they have been a *basis* for my research. Consequently, both are major themes throughout the three manuscripts that constitute my dissertation.

In Manuscript 1, a literature review, I attempt to consolidate theorizing about the radicalization of Western homegrown jihadists. To do this, I review five major theories of radicalization. The commonalities and discrepancies among these models are identified and analyzed in the context of empirical evidence in the field of terrorism research and social psychology. This analysis yields several avenues for future research concerning the radicalization of homegrown jihadists. One of these avenues is the *jihadi narrative*, a collective interpretation of events where group threat is central. Another promising –and overlooked– avenue for

research is the possible role of personality traits in predisposing individuals to the radicalization process.

In Manuscript 2, I outline the theoretical foundations for a two-factor model of homegrown terrorism. The first factor is embedded in the narrative propagated by jihadists worldwide: the threat to collective identity. The second factor is social dominance orientation, a personality characteristic that distinguishes those who value group-based status and hierarchy, and is also linked to prejudice, nationalism, and cultural elitism (Sidanius & Pratto, 1999). This combination of an influential message about group threat, together with a predisposition of heightened concern for group dominance, is theorized as increasing the likelihood of legitimizing the use of terrorism. The two-factor model of homegrown terrorism is then tested in three studies: one survey study, and two laboratory experiments.

In Manuscript 3, I address the most contentious claim of my dissertation: that a personality characteristic may increase the likelihood of becoming involved in terrorism. I begin this manuscript by reviewing most –if not all– published data about the personality characteristics of those who engage in terrorism. Following this, terrorism experts' assertions about personality are contrasted with the broader research about personality traits and their influence on behavior. I then test the possibility of a link between personality traits and terrorism during two large-scale civil-war simulations. Here, the personality traits of students participating in the simulations were measured, with the goal of determining if

individuals who preferred the role of terrorists could be differentiated from those who requested other roles.

MANUSCRIPT 1

The Radicalization of Homegrown Jihadists:

A Review of Theoretical Models

and Social Psychological Evidence

Introduction

"*His family members describe him as being a 'class clown' in that 'all the teachers loved him - his jokes cheered up the class'. He was the 'funny guy' with 'a sense of humor' who was 'very animated' and 'did anything to get attention'.*"

Excerpt from the psychiatric report regarding Zakaria Amara's amenability for treatment[1]

Belying this pleasant depiction of his personality, Zakaria Amara pled guilty on October 8, 2009 to recruiting people, organizing and leading a terrorist training camp, creating a remote-control detonator, and purchasing three tons of ammonium nitrate fertilizer destined for bombing targets in Canada (Teotonio, 2009). At some point in his life, between joking in the classroom and building a detonator, Amara underwent a transformation generally referred to as radicalization. The now widespread use of the term "radicalization" in scholarly articles, government documents, and the popular media makes it essential that this transformational process be well understood. Many theories purport to describe the exact stages involved in the radicalization process, yet paradoxically, very little empirical data exists on the psychology of those who become radicalized. The present article is a review of these theories, and the current state of empirical, social psychological research that supports them.

Scope of this Article

Radicalization as a process is not, by definition, specific to any particular national, political, religious or ideological group. However, the term radicalization in its current form is most often used to describe a phenomenon that leads to homegrown terrorism. In contrast to transnational terrorism, where people plot to attack a foreign country, homegrown terrorism is characterized by perpetrators who are born and raised in the very country they wish to attack. Radicalization leading to homegrown terrorism has drawn much attention in the past decade, since an increasing number of terrorist acts in Western countries have been attributed to local groups, often unconnected to Al Qaeda, but very much inspired by Al Qaeda (Sageman, 2008a). Indeed, autonomous homegrown groups were responsible for 78% of the jihadi terrorism plots in the West from 2003 to 2008 (Sageman, 2009). These include successful plots such as the Madrid train bombings in March 2004, and the assassination of Dutch filmmaker Theo van Gogh, in addition to foiled plots as uncovered by the arrests of the "Toronto 18" in Canada, the "Vollsmose group" in Denmark, and the "Benbrika group" in Australia. Consequently, several Western security agencies now place homegrown jihadists among the top threats to their national security (Ministry of the Interior and Kingdom Relations, 2006).

The present article focuses on homegrown radicalization: the process whereby individuals are radicalized in the Western country they currently inhabit, a phenomenon mostly associated with Western Europe and North America. Accordingly, models describing radicalization that are only applicable to non-

Westerners living in non-Western countries are excluded from our analysis. Because the current threat to Western countries is from terrorism stemming from Al Qaeda inspired ideology (Simcox, Stuart, & Ahmed, 2010), the present review will be limited to homegrown radicalization leading to terrorism perpetrated under the guise of violent jihad. Having delineated the scope of our analysis, the process of radicalization can be defined, for the purposes of the present article as follows: the psychological transformations that occur among Western Muslims as they increasingly accept the legitimacy of terrorism in support of violent jihad against Western countries.

Purpose of this Article

The goal of the present article is to consolidate theorizing about the process of radicalization. Much has been written about this process. Within this vast literature, several full-scale models that in a coherent manner purport to describe the entire radicalization process can be found. These few attempts at modeling radicalization tend to be isolated; that is, that they make no reference to each other. The present article attempts to bring together the various stages, mechanisms and factors referred to in these models while also drawing from the wider literature on terrorism.

We first briefly review five major models of radicalization, and then analyze their commonalities and differences. These commonalities and discrepancies are then situated in the context of empirical evidence in the field of terrorism research and social psychology. Because radicalization involves mainly a shift in attitudes and beliefs about one's own group, and its relationship to other

groups, our analysis will rely heavily on social psychological research in order to evaluate the soundness of claims included in the various models. Social psychology, the study of individuals in their social environment, may be uniquely positioned to assess and inform theories of radicalization.

In conducting this review, our intention is not to designate one particular model of radicalization as superior to the others, nor is it to propose an entirely new model. Rather than an end-point, our review should be considered a beginning. It is above all an acknowledgement of the fragmentation of theorizing about radicalization, with two underlying goals. First, we attempt to identify the major underlying themes among current models of radicalization, and to separate themes that have empirical support from those that do not. Second, we suggest avenues of future research derived from these empirically supported themes that may not only be useful for counter-terrorism strategies, but also feasible given the unique challenges of conducting research with individuals who have undergone radicalization.

Five Radicalization Models

Just as jihadists have varied throughout history, so have explanations of their radicalization (Price & Schmid, 2010). Accordingly, the conception of a terrorist group has shifted. Initially a terrorist group was conceived as individuals who were foreign born, foreign trained, and covertly entering a Western country. The current conception is that of second- and third-generation immigrants, born in Western countries, who become radicalized and plan terrorism against their homeland. From inspection of the five models of radicalization reviewed next (see

Table 1), this conceptual shift is evident. Although each of the five models applies to homegrown radicalization, two of these models, those by Borum and Moghaddam respectively, include factors evocative of situations in non-Western countries. The other three models, designed by Wictorowicz, the New York Police Department, and Sageman, include factors often associated with the multicultural challenges of many Western countries.

Table 1. *Models of radicalization.*

Author	Type of model	Stages or factors
Borum 2003	Linear, progressive	1. Social and economic deprivation 2. Inequality and resentment 3. Blame and attribution 4. Stereotyping and demonizing the enemy
Wiktorowicz 2004	Linear and emergent	1. Cognitive opening 2. Religious seeking 3. Frame alignment 4. Socialization
Moghaddam 2005- 2006[2]	Linear, progressive	1. Psychological interpretation of material conditions 2. Perceived options to fight unfair treatment 3. Displacement of aggression 4. Moral engagement 5. Solidification of categorical thinking 6. The terrorist act
NYPD (Silber & Bhatt) 2007	Linear	1. Pre-radicalization 2. Self-identification 3. Indoctrination 4. Jihadization
Sageman 2008b	Non-linear, emergent	1. Sense of moral outrage 2. Frame used to interpret the world 3. Resonance with personal experience 4. Mobilization through networks

Model 1: Borum's Pathway

In a FBI Law Enforcement Bulletin, Borum (2003) outlines a prototypic psychological pathway along which an individual develops an ideology that

justifies terrorism. Four stages are proposed. At the initial stage, "it's not right", the individual judges his or her condition to be undesirable. At the second stage, "it's not fair", the individual compares his or her condition to the more desirable conditions of others, and judges this inequality as illegitimate and unjust. Some will blame a specific other group for the illegitimate conditions of their own group; this subset of people will have reached the third stage, "it's your fault". Once an outgroup has been targeted as responsible for the illegitimate situation, this outgroup is vilified and dehumanized. At this fourth stage, people generate negative stereotypes about the outgroup, and apply these stereotypes to all outgroup members. Violence becomes legitimized as it is directed towards an evil group that is wholly responsible for all perceived injustices.

Model 2: Wiktorowicz's Theory of Joining Extremist Groups

Wiktorowicz outlines a specific trajectory of radicalization based on an ethnographic case study with members of the Al-Muhajiroun movement. Based in the U.K., Al-Muhajiroun is a transnational Islamist organization that promotes a worldwide Islamic revolution (Connor, 2005). It has gained much notoriety because of its official intention of using military coups to restore an Islamic state wherever Muslims live, including Britain (Wiktorowicz, 2005). In his description, Wiktorowicz never uses the term "radicalization" per se, instead referring to four processes that lead a person to join an Islamic extremist group (Wiktorowicz, 2004). These four processes are denoted as: cognitive opening, religious seeking, frame alignment, and socialization.

The first stage, “cognitive opening”, is often the result of a personal crisis that renders a person receptive to ideas that were likely to be discounted prior to their crisis. The crisis can be instigated by events in any domain of a person’s life, such as a job loss, experiences with discrimination or victimization. According to Wiktorowicz, a crisis might also be precipitated by discussions with a member of an Islamic extremist group.

In the second stage, “religious seeking”, the person’s receptiveness –which began in the first stage– is directed towards religion. This religious seeking and receptiveness renders the person likely to give consideration to worldviews promoted by extremist Islamic groups. Through debate and exploration of this Islamist worldview, the individual arrives at the third stage, “frame alignment”, whereby the person regards the worldview as coinciding with his own views. For this to occur, the radicalized individual must sustain a certain deference to the religious expertise of the people promoting the Islamist worldview.

In the last stage, “socialization and joining”, the individual officially joins the group, embraces the ideology, and adopts the group identity. Ideology and group identity are maintained through interactions with other members of the movement, while simultaneously retreating from mainstream society. By this stage, the group ideology has been internalized, and the individual’s identity has been reformulated. Although face-to-face interactions are more potent, socialization can also occur over the Internet, via, for example, private chat rooms (Beutel, 2007).

Model 3: Moghaddam's Staircase to Terrorism

Moghaddam (2005, 2006) uses the metaphor of a staircase to describe the radicalization process. At each of the six stages, or floors of the staircase, specific factors can potentially influence the individual towards further radicalization. As such, Moghaddam's model can be viewed as a decision-tree, where the individual's reaction to factors at each stage may or may not lead the individual to the next stage, bringing them closer to legitimizing terrorism.

At the ground floor of the staircase, Moghaddam points to feelings of deprivation as the initial factor on the path towards radicalization. Not necessarily based on objective circumstances, these feelings are the result of a subjective interpretation of the intergroup situation. People who compare their group to other groups, and perceive that their group is relatively deprived, are likely to move up the staircase.

People who experience these feelings of group-based deprivation will be motivated to improve their group's status. The subset of people who choose to fight what they perceive to be unfair treatment find themselves on the first floor of Moghaddam's staircase. At this stage, two societal factors will influence how people choose to address their group's low status: social mobility and procedural justice. If legitimate possibilities to move up the social hierarchy exist, people are less likely to engage in radical action. Additionally, if people view decision making as fair, with opportunities to participate in the decision making process – as in liberal democracies– people are less likely to radicalize. Without social

mobility or procedural justice to rectify their illegitimate status, discontent leads people to the next floor.

On the second floor, discontent is channeled towards a target. Here, instead of focusing on the real causes of injustice, displacement of aggression can occur. The West, mainly the United States, is blamed for the deprivation of the group. A portion of those who readily displace their aggression might start considering radical options to counter the injustice. These people climb the staircase to the third floor. People this far along are mostly young men who, with like-minded others, begin to morally justify terrorism. Together, they share their grievances, which fulfills a need for affiliation, and radicalize each other, which leads the group towards isolation. People at this stage maximize the differences between themselves and the external enemy. This differentiation enables them to sidestep inhibitory mechanisms that are innate to humans, an evolutionary guard we have inherited to limit intraspecies killing.

Those who continue on the radicalization path reach the fourth floor, where they officially join a terrorist group. In this group, the solidification of categorical thinking takes place; the "us vs. them", "good vs. evil" mentality is consolidated (Moghaddam, 2006, p.111). At this stage, the individual acquires a specific role in the terrorist group, such as fund-raiser, recruiter, or bomb-maker. Those who reach the fifth and last floor are those who are willing to commit a terrorist act. During this last stage, conformity and obedience are psychological motivations that facilitate people's violent acts.

Model 4: The NYPD's Radicalization Process

The Intelligence Division of the New York Police Department (NYPD) proposes a four-stage model of radicalization (Silber & Bhatt, 2007). To develop their model, Silber and Bhatt analyzed five prominent homegrown terrorist cases in North America and Western Europe. Their model was then applied to three American homegrown terrorism cases, and two groups of extremists based in New York. In all of these cases, Silber and Bhatt report a consistent trajectory of radicalization, involving the presence of four identifiable stages.

The model's first stage of "pre-radicalization" refers to an individual's world prior to their entry into the radicalization process. Although there is no specific psychological profile that characterizes those at-risk for radicalization, Silber and Bhatt point to several common traits. Radicalized individuals are likely to be young, male Muslims from middle class backgrounds and male-dominated societies. They are often educated, second or third generation immigrants, or recent converts, and are not likely to have a criminal history. These individuals are often not considered radical or even devout Muslims.

The second stage, "self-identification", is where the radicalization process begins for those with pre-disposing characteristics. The key driver at this stage is that the individual turns to Islam in response to a personal crisis. The crisis may be a specific event, such as losing a job, or the result of an ongoing situation, like discrimination or a crisis of identity. This crisis challenges the individual's previously held beliefs, and Islam is sought out to manage the crisis. During this exploration of religion, the individual is inevitably exposed to radical

interpretations of Islam, such as the jihadi-Salafi ideology (see Brachman, 2008, Wagemakers, 2008), which are easily found on the Internet, and bolstered by media reports of Western aggression in Muslim lands. As a new identity is being formed, the individual seeks out like-minded individuals. Together, these people become more religious and more extreme.

At the third stage of "indoctrination", the individual wholly accepts the jihadi-Salafi worldview and condones violence against anything un-Islamic. Their increasing religiosity is politicized; all events are construed as proof that the West is waging a war against Islam. Accordingly, the person shifts from having individualistic self-serving goals to non-personal goals focused on protecting or avenging Muslims. People at this stage often withdraw from mosques, and together with like-minded individuals, hold private meetings with radical agendas.

The last stage, "jihadization", is reached when individuals declare themselves to be "holy warriors or mujahedeen" (Silber & Bhatt, 2007, p.43), and become committed to violent jihad. They might seek out para-military knowledge in jihadi training camps abroad. Alternatively, radicalized groups might organize training activities closer to home. Ultimately, a terrorist attack is planned: groups hold secret meetings in order to discuss practical matters, such as potential targets, dates, times, and modes of attack. They determine each member's role, survey potential targets, and obtain materials.

Model 5: Sageman's Four Prongs

In contrast to other models depicting stages that occur in a sequential order, Sageman suggests that radicalization emerges from the interplay of four

factors (Sageman, 2008b). Three of these factors can be considered cognitive, whereas the fourth is a situational factor.

One cognitive factor leading to radicalization is a sense of moral outrage, which is the result of perceiving events as moral violations. A specific example of this is the reaction to the invasion of Iraq, which intelligence agencies have concluded became the "primary recruiting vehicle for violent Islamic extremists" (DeYoung, 2006). Another cognitive factor is the frame used to interpret the world. The specific frame used by contemporary Islamist extremists is that the West is waging a "war against Islam". This idea, whereby Western countries seemingly have a united strategy to confront Islam, has been recognized by security and intelligence agencies who have labeled it the "jihadi narrative" (Royal Canadian Mounted Police, 2009). The third cognitive factor highlighted by Sageman is a resonance with personal experience. The experiences referred to are personal moral violations, such as discrimination, unemployment, and Islamophobia. These three factors can easily reinforce each other. Personal experiences can lead to moral outrage, and render a person sensitive to other people's discrimination. All of these, in turn, can reinforce the perception of a conspiratorial, global attack on Islam.

In addition to these cognitive factors, Sageman emphasizes the interactions of like-minded people as crucial for radicalization to occur. This last factor, labeled "mobilization through networks", involves validating and confirming one's ideas and interpretation of events with other radicalized people. To fully understand this last factor, one must consider Sageman's view that the

current Al Qaeda inspired wave of terrorism should be regarded as a social movement, not as a coherent strategy directed by a hierarchical organization (Sageman, 2008a). Moreover, individuals can mobilize through virtual networks – like the Internet– as easily as they can in person.

Other Models and Explanations

The five models chosen for review were not the only explanations of radicalization found in the literature. Certain explanations have been excluded from our review as they did not present specific *models* of radicalization, but rather explain terrorism at a higher, more general level of analysis. For example, Taylor and Horgan (2006) depict the processes underlying terrorist involvement using three broad categories of variables. First are "setting events" which refer to influences stemming from an individual's past, second are "personal factors" which are the individual's specific context, and third is the broader "social/political/organizational context". Kruglanski and Fishman (2009) also offer an analysis of the psychology underlying terrorism, with a host of factors at the individual, group, and organizational levels. Finally, McCauley and Moskalenko (2008) describe twelve possible mechanisms of radicalization operating at the individual, group, and mass levels. While incorporating more realistic complexity probably lacking in more specific models, these explanations were too general to compare with the five models reviewed above.

Commonalities

Among the models presented by Borum, Wiktorowicz, Moghaddam, the NYPD, and Sageman, descriptions of the radicalization process are wide-ranging

both in structure and content. Taken independently, each model offers a valuable conceptualization of the radicalization experience. Taken together, however, certain commonalities emerge. These commonalities indicate where a consensus seemingly exists among terrorism experts regarding which factors are deemed important contributors to radicalization.

First and foremost, the models converge on the assumption that radicalization is a transformation based on social-psychological processes. The importance of small-group dynamics, such as social influence and bonding, is a recurring theme. All five models describe emotions, cognitions and social influences that, when operating in the right order and combination, can lead someone to endorse and engage in terrorism. To be precise, Wiktorowicz's model stops short of predicting actual terrorism, with an endpoint of joining an extremist group, but nevertheless portrays a radicalization process equivalent in other models. Next, the two psychological factors that recur most often will be examined in light of social psychological evidence. These are relative deprivation and an identity crisis.

Relative Deprivation

As relative deprivation is a factor often cited and debated in the terrorism literature (Davis & Cragin, 2009), it is no surprise to have it play an important role in these models. Borum and Moghaddam place relative deprivation at the initial stages of the radicalization process. In both models, people experience feelings of relative deprivation by comparing their material conditions to that of other groups, and viewing their group's disadvantage as an injustice. Although not explicitly

stated, these feelings of relative deprivation are also incorporated into other models. Relative deprivation is implicit in Sageman's third factor of "resonance with personal experience", whereby moral outrage is confirmed by viewing injustices perpetrated against one's group, or through personal experience, such as discrimination or unemployment. Such feelings of relative deprivation can also lead an individual to question his "certainty in previously accepted beliefs", which in turn precipitates the cognitive opening described in the first stage of Wiktorowicz's (2004, p.7) model.

The concept of relative deprivation originated, ironically, from a survey of attitudes among U.S. military personnel during the second world war (Stouffer, Suchman, DeVinney, Star & Williams Jr., 1949). The researchers used relative deprivation to explain, among other findings, the perplexing discontentment among certain troops. At the time of the survey, many more promotions were awarded in the air force than within military police. Yet on the survey, more air force personnel complained about the lack of promotions as compared to military police. The researchers attributed the greater discontent to the salience of promotions within the air force: for those who did not get promoted, the many promotions were a constant reminder of their lack of advancement. The key to understanding troops' morale, then, was not the objective quality of their circumstances, but rather their circumstances relative to their chosen target of social comparison.

Personal deprivation was then applied to a group context, and thereafter discontent with personal circumstances –personal relative deprivation– was

distinguished from discontent arising from comparing the circumstances of one's group –or group relative deprivation (Runciman, 1966). This distinction was a major theoretical development, and has led to important nuances. For instance, personal relative deprivation has been linked to more inward-oriented emotions, such as decreased self-esteem, delinquency and depression, whereas group-based relative deprivation has been found to be a stronger predictor of collective action and prejudice toward other groups (Pettigrew et al., 2008; Smith & Ortiz, 2002;).

Despite its presence in many models, there has been substantial debate about relative deprivation as a factor for radicalization (Davis & Cragin, 2009). The main point of contention lies in its poor predictive power regarding terrorism. Using demographic data to sustain their argument, many highlight that those who are radicalized to the point of engaging in terrorism do not appear relatively deprived; in fact, most come from the middle-class (Sageman, 2004; Silke, 2008). This observation is not specific to terrorism though, and echoes the main criticism levied against relative deprivation theory and its prediction of any type of collective action. That is, the vast majority of people who potentially experience relative deprivation do not engage in collective action, while those who do engage in collective action do not appear to be necessarily deprived (Walker & Smith, 2002). Although these criticisms make it tempting to dismiss relative deprivation as a factor in the radicalization process, key specifications of the theory should be revisited first.

The experience of relative deprivation is subjective: it results from social comparisons, not from an objective analysis of the situation (Jost & Kay, 2010). It

is the *perception* of deprivation, and not *actual* deprivation that will motivate a person to action. Thus, referring to terrorists' socio-economic status to either confirm or discount the presence of relative deprivation can be misleading because it disregards the psychological dimension of relative deprivation. People can in actual fact be advantaged while experiencing group-based relative deprivation (Leach, Iyer, Pedersen, 2007). Conversely, people can be comparatively disadvantaged without experiencing their inequality as deprivation (Jost & Banaji, 1994). Thus, to the extent that relative deprivation is considered a subjective psychological state, independent of the person's socio-economic status, it should not be discounted as a factor for radicalization.

Rather, findings in social psychological research place relative deprivation as a likely contributor to radicalization. This is anchored in the robust findings across dozens of empirical studies that group-based feelings of injustice reliably predict collective action (van Zomeren, Postmes & Spears, 2008). However, two specifications must be highlighted here. First, it is the emotions elicited by the injustice –not only the cognitive awareness of the injustice– that predict collective action. Second, it is group-based relative deprivation, as opposed to personal deprivation, that predicts collective action (Smith & Ortiz, 2002).

Upon generalizing these findings from research on collective action to the study of terrorism, the empirical support should be sufficient for experts to reconsider relative deprivation as a factor in radicalization. The most likely contributor is the affective component of group –as opposed to personal– relative deprivation. Unfortunately, many discussions of radicalization do not include

these nuances. For example, discrimination, which is often cited in accounts of peoples' radicalization, can be construed as personal deprivation when comparing oneself to other people who are fairly treated. However, discrimination can also be interpreted as group deprivation when focusing on other group members' similar mistreatment.

Criticizing these theories for not pinpointing the type of deprivation might be unfair, however, as relative deprivation researchers have not yet been able to predict how and when, nor to what other person or group, comparisons will be made. Indeed, "predicting whom members of a group will select for purposes of comparison, and under what circumstances, remains a fundamental issue for relative deprivation" (Taylor & Moghaddam, 1994, p. 135). Although this ambiguity has yet to be resolved, considering group relative deprivation and its emotional component as factors for radicalization seems a fruitful course for future research concerning the psychological transformations undergone by homegrown jihadists.

Identity-Related Issues

For three of the models we reviewed, those of the NYPD, Wiktorowicz, and Sageman, the crux of the radicalization process involves some form of personal crisis. This crisis is often described as relating to the management of one's identity, a claim echoed by other researchers. For instance, Choudhury (2007) asserts that the path to radicalization often involves an identity crisis, dissatisfaction with old answers and belief systems, and the striving for new ones. As homegrown terrorist plots since 2002 have involved mostly second and third

generation immigrants and converts to Islam (Silber & Bhatt, 2007), linking identity issues to radicalization makes intuitive sense. Not only do second and third generation immigrants face discrimination based on their identities, but they also must manage a mainstream Western identity with their heritage identity, to arrive at some internalized and coherent identity in order to fully participate in society. Social psychological research regarding these three identity-related issues –discrimination, integration, and identity management– will be examined next.

On the face of it, experiencing discrimination would seem to be an obvious radicalizing factor. However, research has revealed that people are willing to endure very high levels of discrimination before mobilizing for collective action (Wright, Taylor & Moghaddam, 1990). Although *absolute* discrimination, where virtually every single group member is affected by unfair treatment, can motivate people to mobilize, such extreme levels are rarely found in Western countries. Anything less than absolute discrimination, in step with the levels appearing in most radicalization models, group members tend to avoid collective action. The reason for this inaction centers on those who share the same identity, but who are not victims of discrimination. If discrimination is anything less than absolute, those who do perceive that they are treated fairly –even if few in number– help maintain the myth that justice and equality prevails in the social system (Wright, 2001).

Closely related to discrimination, another common factor in radicalization models is the lack of integration into mainstream society (Jenkins, 2007; Silber & Bhatt, 2007). There is plenty of anecdotal evidence supporting the role of such a

factor in radicalization, and there is as much anecdotal evidence to suggest otherwise (e.g. Kirby, 2007; Saggar, 2009). Empirical findings present an equally unclear picture. Completely embracing a Western identity, such as promoted by the American "melting pot" metaphor, has been championed by some as an inoculation against radicalization (Sageman, 2008a, p.98). Yet this assimilationist strategy might run counter to our fundamental psychological needs. Findings in psychological research reveal that people want a fine balance between being part of the mainstream and being distinctive, between assimilation and individuation (Brewer, 1991). This distinctiveness is considered to be a psychological need, and people actively protect the distinctiveness of their identity when they feel it is threatened. For example, emphasizing similarities between groups has been shown to actually increase negative biases between these groups (Dovidio, Gaertner & Validzic, 1998). Thus, it remains unclear if lack of integration should be considered a factor for radicalization.

Rather than discrimination or lack of integration, some researchers have suggested that radicalization may stem from a burden shared by many children of immigrants: managing a dual identity (Stroink, 2007). Although second and third generation immigrants are a diverse group, they do share the common experience of managing a Western identity with an ethnic identity inherited from their family (Giguère, Lalonde & Lou, 2010). For some, managing these two identities can be especially difficult, leading to overwhelming uncertainty, and quite possibly the "crisis" referred to in the radicalization models. According to Aly (2007) for individuals who have faced such a crisis, "Islam becomes as much an identity

movement as it becomes a traditional faith", engendering a faith and lifestyle that becomes "more politicized" (p. 6). When faced with such uncertainty, social psychological research has determined that two levels of response begin to operate. At the individual level, people have been found to react to uncertainty by hardening their attitudes and increasing their convictions (McGregor, Zanna, Holmes & Spencer, 2001). At the group level, the simple act of joining a well-defined group has been shown to reduce uncertainty (Hogg, 2000). These two responses, attitude hardening and joining groups, seem to be fundamental aspects of the radicalization process.

Identity crises, as compared to other identity-related issues, are probably significant catalysts in the radicalization process. An obvious but important caveat must be highlighted here. Although we have drawn on empirical support for this claim, the reality is that innumerable people experience identity-related crises yet do not radicalize. Thus, future research will need to determine what other factors interact with identity crises to yield radicalization.

Discrepancies

Despite their commonalities, the five models of radicalization we reviewed do diverge significantly from one another. Most noticeably, the format of the radicalization process differs: the models propose different numbers of discrete stages. More fundamentally, however, some authors portray radicalization as emerging from the combination of specific factors, while others portray it as a linear progressive process with identifiable stages. Besides these differences in format, the factors within radicalization models also vary. For

example, the role of religion during people's radicalization is present in some models but not others. Beyond the models reviewed in the present article, countless additional discrepancies about the factors and processes involved during radicalization can be found in scholarly discussions about terrorism. Instead of enumerating all of these, we will focus on two key discrepancies. First, the diverging hypotheses about the role of established extremist organizations during the radicalization process will be discussed. Second, a more fundamental discrepancy about the role of individual characteristics in the radicalization process will be examined.

The Role of Extremist Organizations and Virtual Networks

Models of radicalization portray extremist organizations as having one of two roles: either being active during a person's radicalization, or being passively uninvolved. The models proposed by Wiktorowicz and Moghaddam discuss the event of joining such a group -often described as an established terrorist organization- during radicalization. From this perspective, extremist organizations play an active role in the radicalization process. They are external entities, waiting on the sidelines for the opportunity to "convince seekers that the movement ideology provides logical solutions to pressing concerns" (Wiktorowicz, 2004, p. 9). These organizations push individuals along the radicalization process, where "recruits to terrorist groups are selected with considerable care and are assimilated into groups gradually" (Moghaddam, 2006, p. 116).

From the other perspective, established extremist organizations have a passive role in the radicalization process. The models of the NYPD and Sageman

portray terrorist cells as emerging from clusters of radicalized individuals who seek out like-minded people, unconnected to formal organizations. This portrayal of terrorist cell development has been coined the "bunch of guys" explanation (Sageman, 2008a, p. 69). From this perspective, established extremist organizations sometimes play a role during the radicalization journey, but it is not for membership. Rather, formal organizations are mostly sought out for training and, in some cases, the notoriety of affiliation.

These differing roles conferred to extremist organizations are epitomized in the terrorism literature in what has become known as the Hoffman-Sageman debate (Sciolino & Schmitt, 2008). In this debate, Hoffman (2008) argues the Al Qaeda organization still constitutes the West's most important threat, as it has survived America's "war on terror" while maintaining operational and strategic control over many people who conduct attacks in its name. Sageman (2008a), conversely, argues that the threat posed by Al Qaeda lies in the social movement it has inspired; the organization itself is less relevant to the radicalization process.

Although anecdotal evidence may be found to support both sides of the debate, most published data supports the notion that extremist organizations increasingly play a passive role in the radicalization process of Western jihadists. Since 2003, most homegrown jihadi cells in Europe have developed and operated independently from extremist organizations (Minister of Justice, 2005). Cruickshank (2010) estimated that, of the 21 serious terrorism plots between 2004 and 2009 in the West, 12 (or 57%) were completely autonomous, without direction from established foreign jihadi organizations. Crone and Harrow (2010)

have determined that, compared to previous cohorts, jihadists active between 2004 to 2008 trained abroad less, fought jihad abroad less, and had less attachments to international organizations. These statistics, however, should not lead us to minimize the threat posed by extremist organizations. Although not actively involved in the radicalization process, these organizations provide ongoing training, inspiration, and ideological justification. Most likely, established organizations do not radicalize people, but rather make the already dangerous autonomous groups even more effective.

Concluding that established organizations play a passive role is not to refute that homegrown jihadists still experience important group dynamics during their radicalization. These dynamics are cornerstones of most radicalization models. For example, in the last stages of their models, Wiktorowicz and Sageman highlight interpersonal relationships and group interactions as facilitating radicalization. Somehow replacing established organizations in this capacity, however, is the Internet. Especially through web forums, the Internet mirrors at least three important functions otherwise fulfilled by established organizations. First, it provides ideological support for people who may not find it elsewhere. Through websites and chat rooms, people can not only consume the jihadi narrative, but also contribute to the discourse (Drennan & Black, 2004). Second, the Internet offers networking opportunities. The Internet enables individuals to find and interact with like-minded individuals, and mobilize towards carrying out an actual attack (Choudhury, 2007; Kirby, 2007). Third, the Internet supplies information and educational materials. A recent example, easily

found on the Internet in the magazine *Inspire*, published by the Al Qaeda Organization in the Arabian Peninsula, is the featured article "Make a Bomb in the Kitchen of your Mom" (AQ Chef, 2010).

Because of all these functions, the Internet has been deemed by some as the "virtual incubator" of radicalization (Silber & Bhatt, 2007). Indeed, the NYPD identify the Internet as playing a significant part in most stages of their model of radicalization. It acts as a source of information about Islam during the exploratory "self-identification" phase, as a way to interact with like-minded others in the "indoctrination" phase, and it facilitates action both through interactions with motivated others and through gaining practical information in planning and conducting an actual attack.

Although the Internet facilitates group dynamics, it remains unclear exactly how the Internet contributes to the radicalization process per se. In theory, jihadi websites may radicalize some, yet it is also conceivable that these websites have no causal effect. Perhaps it is prior radicalization that leads an individual to search for extremist websites, and not the reverse. Also confusing matters is the fact that, despite an abundance of online information regarding bomb-making and other terror-craft, many homegrown jihadists still seek out the "real experience" of training with extremist outfits in the Afghanistan-Pakistan border region, or with Al Qaeda franchises in Somalia and Yemen (Bell, 2010; Cruickshank, 2010; Johnson, 2010). Despite these ambiguities, the Internet is consistently utilized by homegrown jihadists during their radicalization. Its role needs to be better understood.

The Person and the Situation

Among the various descriptions of radicalization reviewed in the five models, there exists a small discrepancy that, nevertheless, deserves serious attention. The models presented by Borum, Moghaddam, and Wiktorowicz all emphasize situational factors that shape the individual's thinking, which ultimately leads to radicalization. Silber and Bhatt (2007), however, specify in the NYPD model certain "demographic, social, and psychological factors that make the individuals more vulnerable to the radical message" (p. 22). Sageman (2008b) also suggests that personality traits may predispose some people, especially men, towards the path of jihad. Thus, the models of the NYPD and Sageman designate individual characteristics as predisposing factors for radicalization, whereas other models do not, and attribute the entire process to situational forces. This discrepancy is not exclusive to theories of radicalization, but reflects an enduring debate in psychology as a whole between those who attribute all human behavior to situational factors, those who attribute behavior to personality traits, and others who propose it is a combination of the two (Funder, 1997).

Initial theorizing in the psychology of terrorism focused solely on personality factors, and portrayed terrorists as –while not necessarily mentally ill– having deep-rooted psychological problems (Morf, 1970). This conception has since been discounted, and now most experts agree that those who engage in terrorism are "normal" and a specific profile of violent extremists does not exist (Horgan, 2005; Kruglanski & Fishman, 2006; Silke, 1998). These conclusions are anchored in clinical assessments and demographic information about people who

have engaged in terrorism. Without discounting this evidence, the historical context of these conclusions merits consideration, as current notions about terrorist profiles are somewhat of a backlash against earlier theories. Whereas previously researchers were biased towards personality characteristics to explain terrorism, the current emphasis on "normalcy" may have resulted in a new bias. That is, current theorizing emphasizes situational factors as the primary –and in some cases the exclusive– drivers of radicalization. Of course, situations undoubtedly play a role. However, individual characteristics are significant determinants of how people respond to situations (Funder, 1997). Much evidence exists in the psychological literature to support the importance of both individual characteristics and situational factors in shaping people's behavior. To argue for the importance of both, a famous social psychological experiment, Zimbardo's Stanford Prison Experiment, will be reviewed.

In the Stanford Prison Experiment, researchers re-created a prison situation with 21 men who answered a newspaper ad promising financial compensation for a two-week study of prison life (Haney, Banks & Zimbardo, 1973). Half of the participants were randomly assigned to the role of guard, and the other half were assigned to the role of prisoner. Once the experiment began, participants quickly adopted their roles, and within a few days, the guards became cruel and authoritarian, while the prisoners became docile and submissive. The guards became so abusive, in fact, that the experiment was terminated before its scheduled end date.

The experiment impressively demonstrated the power of the situation: normal men can become brutally violent when placed in a particular situation. Personality traits were thought to play a negligible role in explaining the violent behavior of the guards, as participants were randomly assigned their roles. This marked a shift in the social sciences whereby most researchers have since attributed violent behaviors and atrocities to situational factors (Berkowitz, 1999).

The Stanford Prison Experiment has been revisited, however, to review if personality traits may have been discounted too easily. In a follow-up study (Carnahan & McFarland, 2007), researchers recruited people using the same advertisement as in Zimbardo's 1971 experiment. In addition to the original version of the ad, another version that omitted "prison life" as the purpose of the study was used. People who responded to either ad were then administered a battery of psychological tests, and important personality differences were found between respondents. People who answered the "prison life" ad scored higher on psychological scales of aggression, narcissism, and social dominance orientation, the latter being a measure of an individual's preference for hierarchy within a social system. Such personality characteristics may help explain why participants readily engaged in aggressive behavior when given a role where aggression was acceptable.

Although these findings do not diminish the importance of the situation, they highlight the fact that personality traits can predispose a person to seek out and experience certain situations. It is somewhat surprising that such characteristics receive so little attention in models of radicalization, as there is an

increasing amount of evidence that many homegrown jihadists share similar traits. Radicalized individuals are generally identified as young (i.e. late teens to mid-thirties) and male (Sageman, 2008a; Silber & Bhatt, 2007; Royal Canadian Mounted Police, 2009). They are often second or third-generation Muslims or recent converts, and appear to have a lack of religious literacy. Many of them might appear to be sensation seekers, as they are seemingly seduced by the trendy and adventurous dimension of jihad (Silke, 2008; Atran, 2008; Bartlett, Bidwell & King, 2010). Momin Khawaja, a Canadian found guilty of financing and facilitating terrorism, exemplifies these traits when he described himself as "I'm just a wanna-be gung-ho Islamic" (Ontario Superior Court of Justice, 2008, p. 16).

Clearly, personality characteristics deserve greater attention in research on radicalization. Indeed, personality traits would explain why certain people initiate the radicalization journey in the first place, and why so many people experience the factors described in the various models of radicalization, yet only a fraction of people radicalize. Hence, we encourage experts to revisit disregarded assumptions about personality characteristics in terrorism research, as the most plausible model for radicalization would be one that considers an interaction between personality traits and situational factors.

Discussion

Considering the discrepancies and the commonalities among the five models, and the lack of empirical research verifying the factors and processes within these models, no one model can be distinguished as being more accurate than any other. This conclusion does not only apply to the models reviewed in this

article, but can be generalized to most descriptions of radicalization in the broader field of terrorism studies.

This said, our analysis suggests that the greatest insights into the psychology of radicalization might stem from further research on three factors: personality characteristics, identity management, and feelings of group-based relative deprivation. Here, we refrain from offering a new model based on these factors, as doing so would undermine a critical issue highlighted throughout this article: theoretical modeling without empirical evidence remains speculative. Rather than offering a new model, our goal is to stimulate empirically-based research, while acknowledging that radicalization is a psychological process that is still little understood.

Differentiating the Known from the Theorized

Unfortunately, these limitations have not been properly communicated. The claims made by theorists have entered government and public discourses on terrorism in the West, and the factors and processes involved have acquired an air of certainty. In a commentary on discussions of radicalization in the British media, Hoskins and O'Loughlin (2009) observe that

> "…the term radicalization has become part of the rhetorical structure of the waging of the 'War on Terror' without any reflexive interrogation of its distinctiveness, genealogy or function, in describing a 'root cause' of terrorist activities which thus requires a policy and/or tactical response (i.e. 'de-

radicalisation'). Such clustering affords a false certainty to media reporting and commentary" (p. 82).

Highlighting an incomplete understanding of radicalization is not meant to discourage theorizing. Theorizing is the bedrock of science: it should continue in order to promote dialogue among researchers and provide hypotheses for testing. Rather, we seek to encourage an appreciation of the limits of the stated knowledge about radicalization.

Acknowledging these limitations is especially significant for policy makers. Basing counter-terrorism or counter-radicalization strategies on models that have not been empirically validated can be misleading and risky. Consider the consequences of a basing a strategy on the assumption that poverty causes radicalization, in a context where radicalization truly stemmed from sensation seeking. Such strategic decisions would not address the causes. Here, another cautionary note is warranted: a better understanding of radicalization might not necessarily inform counter- or de-radicalization strategies. As Horgan (2008) has aptly pointed out, the reasons for engaging in terrorism may differ from subsequent reasons for disengaging from terrorism.

The field of terrorism research has already used data to verify, and in some cases refute, theoretical assumptions. For example, where early psychological theorizing treated terrorism as a product of psychopathology (e.g. Heskin, 1984), empirical verification through clinical assessments later challenged this assumption. Subsequently, when poverty was thought to be a root cause of terrorism, demographic data on jihadists worldwide revealed that those engaged in

terrorism were often from the middle-class (Sageman, 2004). Such empirically-based developments have advanced the field of terrorism research, but methodological improvements are still needed. Future investigations will need to be more systematic, and include not only radicalized individuals, but valid comparison groups also. Consequently, empirical verification of the existing assumptions surrounding the process leading up to terrorism should take precedence over additional theorizing.

An Example for Empirical Verification

Multi-stage models of radicalization are practically impossible to test empirically. One challenge is to verify if a person undergoes all stages in a specific model, while a particularly thorny methodological challenge would be confirming the sequential aspect of the stages. While models cannot be tested in their entirety, individual stages or factors can. One such factor amenable to research, for instance, is the narrative promoted by jihadists.

The narrative propagated by the Al Qaeda movement and many jihadi groups states that Islam is under threat. The essence of the narrative depicts Islam as being under attack by the United States, Israel, and their allies (Lia, 2008; Wagemakers, 2008). This is a well-defined message often purported to have influenced people involved in terrorism (Royal Canadian Mounted Police, 2009). In the NYPD model (Silber & Bhatt, 2007), this narrative is an important factor in the indoctrination stage, where the individual construes events as proof that the West is waging a war against Islam. Sageman (2008b) also refers to this narrative

as the “interpretive framework”, one of the four prongs in his proposed model of radicalization.

Compared to many other factors contained in radicalization models, this narrative is quite amenable to empirical research. The narrative is a simple factor to experimentally manipulate to investigate, for example, if increases the legitimacy of terrorism. Research can be conducted to identify what elements in the narrative are persuasive, what audiences are more receptive to its message, and if identity management issues play a role in people’s agreement with the narrative. Furthermore, research on the narrative promoted by the jihadi groups can directly inform counter-terrorism and counter-radicalization strategists. Counter-narratives could be constructed based on research findings. For counter-terrorism strategists, factors such as this narrative should be at the top of research agendas, as it is more manageable to contend with a narrative than many other factors, such as relative deprivation, discrimination, and foreign policy, which are diffuse and difficult to address in the short term.

Conclusion and Future Directions

Various psychological transformations are thought to occur within individuals as they increasingly accept the legitimacy of terrorism. These transformations are generally referred to as radicalization. The present article reviewed five major models of homegrown jihadi radicalization. Independently, each model has contributed important theorizing to the field of terrorism research. When brought together, however, the commonalities and discrepancies between

these models offered even greater insights, which may be used as a guiding framework for future research concerning homegrown jihadi radicalization.

Based on the commonalities and discrepancies that emerged during this review, our research recommendations focus on three factors that are likely contributors to the radicalization process. The first factor involves the affective reactions to group relative deprivation. The major research challenge here will be to understand how groups or individuals are selected when people make comparisons. The second factor is the management of identities. Here, the major research challenge will be to understand psychological conflicts between an inherited identity and a mainstream identity, and how such identity crisis interact with other factors discussed throughout this article. The third factor involves personality characteristics. Only a minute number of people amongst countless others exposed to similar conditions become radicalized. Certain idiosyncratic predispositions may help explain why.

In addition to these three factors, we also propose two additional research foci that emerge from the current context of homegrown jihadi terrorism: the Internet and the single narrative. The Internet has featured one way or another in each homegrown jihadi terrorist plot since 2002. Researchers have just started to exploit this platform to investigate the processes involved in radicalization (Conway & McInerney, 2008). In addition to content analysis of jihadi websites, discussion forums can be used as a gateway to reach homegrown jihadists. Provided the researcher can convincingly navigate this sub-culture, such as Brachman (2010) has done, empirical data from radicalized people could

conceivably be collected. Of course, this is no simple task. One must be extremely familiar with jihadi speak to access, relate to, and exchange on the bona fide forums where radicalized people communicate.

The jihadi narrative is the second research foci to emerge from our review. Emphasizing that Islam is under threat, this narrative is considered to have influenced those involved in terrorist plots against the West. As a factor that is amenable to experimental methods traditionally used in social psychological investigations, research on the narrative can potentially inform counter-radicalization strategies.

There are understandable practical challenges in studying radicalization. Most researchers acknowledge that it is a difficult process to trace, and radicalized people are not always approachable for interviewing. Despite these challenges, it must be recognized that some researchers do collect such primary source data in the field (Bartlett, Birdwell & King, 2010; Horgan, 2009; Merari et al., 2010; Post, Sprinzak, & Denny, 2003); yet this is nowhere near enough. Academic researchers, however, need not be alone in answering this call for additional data. Research could be facilitated by those who undoubtedly possess the most data about radicalization: security agencies. To complement their internally produced research, security agencies might consider granting academic researchers access to classified information collected on radicalized individuals. Conceivably, selected researchers could be screened for security clearances, while data can be coded not only to ensure the confidentiality of the people being studied, but also to conceal the methods used to gather the data.

A collaborative investigation of the psychological basis of radicalization, including how psychological changes correspond to the more observable changes described in the literature, must continue. Although independent theories offer valuable contributions, it appears as though a comprehensive effort to verify our understanding of radicalization, using empirical verification as a standard, might be more beneficial to the current state of knowledge concerning the transformative processes that precede acts of terrorism. A shared and unambiguous understanding is essential to the success of counterterrorism strategies.

ENDNOTES FOR MANUSCRIPT 1

1. The person who provided the *Psychiatric Report Regarding the Amenability to Treatment* (Toronto: October 27, 2009) has requested that the psychiarist who authored the report not be named.
2. Moghaddam first described his model in an article (2005). A more detailed description, with slight differences, was later outlined in a book (2006). The titles for each stage in Moghaddam's model, and the summary presented, attempt to reflect both descriptions.

TRANSITION TO MANUSCRIPT 2

Much has been written about the radicalization of Westerners who become involved in violent jihad. Within this vast literature, security experts and social scientists have offered many theories about how this occurs. In Manuscript 1, I reviewed the most prominent theories of radicalization, and summarized the current state of knowledge concerning the psychological factors thought to be involved in terrorism.

Clearly, the psychological research related to terrorism is mostly theoretical. While each of these models offers a plausible conceptualization of the radicalization process, they are all limited by their lack of empirical evidence. A lack of evidence prevents researchers from distinguishing which theory more accurately represents the radicalization process, and inhibits a proper identification of the factors that lead to radicalization. This, in turn, limits the progress of terrorism research, and ultimately prevents the field of psychology from adequately informing counter-terrorism strategies.

Evidently, additional research is needed. Yet even more evidently, *different* research is needed. To advance our understanding of the radicalization of homegrown jihadists, research must go beyond theories, observations and case studies. Methodologies that lend themselves to systematic, empirical investigation of psychological constructs must be used to test which factors, among the many theorized, are indeed linked to radicalization. The empirical research methodologies used in the field of social-personality psychology are ideally suited

for this type of investigation. These methodologies were used throughout the research in Manuscript 2.

In Manuscript 1, several themes emerged as promising avenues of future research concerning the radicalization of homegrown jihadists. Of these, two themes formed the basis for the research described in Manuscripts 2. One theme was the jihadi narrative, while the second theme was the role of personality characteristics. These two themes were combined to form the two-factor model of homegrown terrorism, a novel theory of radicalization presented in Manuscript 2. Consistent with the need for empirical investigation, the two-factor model of homegrown terrorism was tested in three studies: one survey study and two laboratory experiments.

MANUSCRIPT 2

Of Pride and Dominance:

The Two-Factor Model of Homegrown Terrorism

Introduction

When a group is under threat, social psychological research indicates that members react defensively, often by derogating the outgroup, and sometimes by engaging in collective action against the outgroup (Brandscombe, Ellemers, Spears & Doosje, 1999; Brewer, 1999; Tajfel, 1982; Stürmer & Simon, 2004). It comes as no surprise then, after decades of alleging that Islam is under threat from Western powers, that Muslim extremists have violently attacked the West. This, so far, is consistent with social psychological research and findings.

What has challenged social psychological theorizing, however, is the profile of the latest people to have joined the fight against the West: homegrown jihadists. These are individuals who wish to attack the Western country they currently inhabit. They are often unconnected to, but very much inspired by, Al Qaeda (Sageman, 2008a). Homegrown jihadists have seemingly accepted a narrative depicting a global threat to Islam, and as evidence for this Western hostility against Muslims, they commonly cite the war in Iraq, the invasion of Afghanistan, and the neglect of Palestine (e.g., Dodd & Norton-Taylor, 2005; Ontario Superior Court of Justice, 2008). The paradox is that most homegrown jihadists have never experienced Western hostility, nor have they ever been in direct conflict with Western forces. Most have never been to Afghanistan, Iraq, or Palestine. Clearly, the motivations of homegrown jihadists are not anchored in direct, lived experiences of threat. Yet this mere vicarious threat is seemingly enough to motivate jihadists to engage in the riskiest, most anti-normative of

behaviours. Exactly how and why individuals become involved in homegrown terrorism remains unclear.

The enigma surrounding homegrown terrorism persists, in part, because of a lack of research from psychologists. This is surprising, however, because social psychological theories have made significant progress in explaining how individuals become involved in other types of intergroup conflict, such as strikes, protests, and riots. These same social psychological theories could thus be expected to provide some insights into processes leading to homegrown terrorism. The scarcity of research is also surprising given that the radicalization of homegrown jihadists has become a leading national security priority for many Western countries (e.g., see Bell, 2010; Ministry of the Interior and Kingdom Relations, 2006), and social psychological research is well-known –at least historically– to be issue driven. Clearly, social psychology has not only the theoretical potential, but also the mandate, to contribute a better understanding of terrorism.

In the present article we take an initial step towards answering this mandate as we draw upon established social-psychological theories of intergroup conflict to propose a two-factor model of the psychology leading to homegrown terrorism. The first factor accounts for the vicarious nature of homegrown jihadists' radicalization; that is, how people become motivated by a threat, despite not tangibly experiencing this threat. The second factor specifies who might be predisposed to become involved in terrorism. This model consists of situational influences –identity threats communicated through narratives– and a personality

characteristic –social dominance orientation– in an attempt to explain how individuals come to legitimize terrorism against their own country.

The present article begins by describing the theoretical underpinnings of this model, after which the model is tested in three studies. As a first test, a survey is conducted with Canadian Muslims to explore if the two-factor model can predict aggressive action tendencies towards non-Muslim Canadians. Thus, in Study 1, the model is tested on a sample representing the exact population from where homegrown jihadists emerge. Following this, two laboratory experiments are carried out to ascertain, in a controlled setting, if the model predicts the legitimization of terrorism. Because recruiting Muslims to directly partake in laboratory experiments about terrorism was deemed odious in the post 9/11 era, these experiments were conducted with another group: Jewish Canadians. Although they represent jihadists' professed enemy, Jews living in Canada share many of the same collective identity features as Muslims living in Canada: they are both minority groups defined by religiously based identities. The use of this sample thus served to illustrate the generalizability of the two-factor model. Although the current wave of homegrown terrorism centers on jihadism and the Muslim identity, the psychological processes investigated here arguably apply to any group with a well-delineated identity.

Factor 1: A Narrative of Threat

The first factor in our model of homegrown terrorism is a threat conveyed through a narrative, which accounts for the apparent vicarious nature of the motivation underlying contemporary terrorism. Indeed, a unique aspect of the

current wave of homegrown terrorism in Western countries is that the perpetrators –jihadists– appear to be motivated by a narrative emphasizing threat, despite not tangibly experiencing this threat.

Narratives are a central component of our model due to the increasing worry, expressed by many terrorism experts and security agencies, about the *jihadi narrative* (Canadian Security Intelligence Service, 2007; Kilcullen, 2006; Halverson, Goodall, & Corman, 2011; Geltzer, 2010). At the core of this narrative propagated by Al Qaeda and other jihadi groups is the tenet that *Islam is under threat* (Lia, 2008a; McCants, Brachman, & Felter, 2006; Wagemakers, 2008). Those disseminating the jihadi narrative emphasize that this threat originates from the "Jewish enemy, led by America and its nonbelieving, apostate, hypocritical allies" (Al Suri, cited in Wright, 2006b). Experts now consider this narrative as a key contributor to the radicalization of individuals who engage in homegrown terrorism (Royal Canadian Mounted Police, 2009; Sageman, 2008b; Wiktorowicz, 2004). Roy (2008, p. 1) goes so far as to suggest that:

> "The success of Osama bin Laden is not to have established a modern and efficient Islamist political organisation, but to have invented a narrative that could allow rebels without a cause to connect with a cause."

Although bin Laden has been killed, his jihadi organization and the narrative it promotes live on. As a communication strategy used by jihadists in their continued attempt to mobilize support, the narrative is an ideal target for social-psychological research.

Collective narratives.

A narrative is essentially a story, and it is through story-making that people make sense, understand, and create meaning from life events (Hammack, 2007). Most of the research in psychology has focused on personal narratives, or the stories that people build from their own experiences. In addition to sense making, narratives also contribute to identity construction (Thorne, 2004; McAdams, 2006; McLean, Pasupathi, & Pal, 2007). Indeed, McAdams (2001) goes so far as to claim that identity itself is a story, or more precisely, identity is an internalized life story.

Recent research has ascertained the importance of narratives at the group level, which serve similar sense-making and identity construction functions (Bougie, Usborne, de la Sablonnière, & Taylor, 2011). Such collective narratives are consensual interpretations of events, either historical or current, factual or fictional, about a group. Because collective narratives are constructed and maintained by group members, these narratives can be shaped to best serve the group's identity. A pertinent example is that of World War II. The British and Americans have often portrayed their own involvement as crucial to ending the war (e.g., Roberts, 2010). Yet Russians have a similar narrative about the Soviets, and in their version it is their own actions that led to ending the war (Rozhnov, 2005). Another example is the 1948 Arab-Israeli war, which Israelis comonly refer to as the "War of Independence", whereas Arabs refer to the same war as "the Catastrophe" (al-Nakba).

To specify that collective narratives do not factually represent reality is not meant to portray narratives as a deceitful product of the collective psyche. We seek to emphasize, rather, that others can influence an individual's interpretation of events. From Sherif's (1935) experiments on convergent estimation of ambiguous stimuli, to attitude alignment (Davis & Rusbult, 2001), shared reality (Hardin & Higgins, 1996), and affiliative social tuning (Sinclair, Huntsinger, Skorinko, & Hardin, 2005), our tendency to include others' input when constructing reality has been well documented in social psychology. And these interpretations of reality are shared and negotiated mainly through communication (Higgins, 1992; see Echterhoff, Higgins, & Levine, 2009). Together, group members define group experiences through the narration of stories. Defining group experiences, we contend, is precisely what jihadists have been doing. Events involving Muslims, both globally and locally, are being interpreted by jihadists, and recounted as a simple coherent story about a worldwide conspiracy against Islam. This jihadi narrative is being offered through various platforms, such as websites, internet chat rooms, books and lectures, and competes with other interpretations of contemporary history. For some individuals, the jihadi narrative seemingly motivates them towards violence.

Next, we hypothesize how a rather general threat, such as the "threat to Islam" central to the jihadi narrative carries psychological meaning for the individual. This hypothesis is based on a prominent theory of intergroup conflict: social identity theory. Considering the psychological processes outlined in social identity theory, the threat conveyed in the jihadi narrative could motivate

individuals towards violence because it is interpreted as a threat to one's collective identity.

General threat, personal significance.

The jihadi narrative highlights a threat to Islam. Somehow, this general threat to a religion is sometimes interpreted as a threat to the self that motivates individuals to take action. The challenge is to explain how people become motivated by a narrative emphasizing threat, despite not tangibly experiencing this threat. This is where social identity theory (Tajfel & Turner, 1986) offers a useful framework for understanding how individuals can be motivated by a threat mostly directed towards other people who share the same identity.

We first draw upon a basic cognitive process underlying all other social identity processes: social categorization (Tajfel & Turner, 1979). To understand how the diffuse threat to Islam emphasized in the narrative can be interpreted as a threat to the self, Islam must be viewed not only as a religion. Although it is mainly a religion, Islam encompasses ideals, histories, locations, and most pertinent to this discussion, people. Indeed, Islam designates a category of people, and it is this categorization feature of Islam that generates a psychological interpretation of the "threat to Islam" as a specific threat to Muslim people.

Categorization alone, however, cannot explain the level of motivation required to participate in the extremely risky, anti-normative behaviors of homegrown jihadists. Because the threat emphasized in the narrative remains intangible and is experienced through their collective identity, we contend that identity-related motives may account for jihadists' behaviour.

Collective identity motives.

When individuals consider themselves as part of a social category, in other words they *identify* with a group, two underlying motives are thought to guide the management of their collective identity (Tajfel & Turner, 1979). One of these two motives is fueled by a desire for their collective identity to be positively evaluated (pride). The other motive is for their collective identity to exhibit a certain level of distinctiveness. One –or both– of these fundamental identity-related motives may help explain the effectiveness of the threat emphasized in the jihadi narrative.

People are motivated to achieve a positive collective identity (Mummendey, Kessler, Klink, & Mielke, 1999; Oakes & Turner, 1980; Tajfel & Turner, 1986; Taylor & Moghaddam, 1994). In concrete terms, this translates into group members wanting their group to be positively evaluated (Luhtanen & Crocker, 1992). The incentive for group members to maintain, or achieve, a positive evaluation of their group lies in the fact that they psychologically include their group in their self-concept (Ashmore et al., 2004). Thus, an evaluation of the group translates into an evaluation of a part of the self. If the group is positively valued, a group member infers that the self is positively valued. The self-esteem derived from the group's evaluation will henceforth be referred to as *collective pride*.

People not only want their group to be positively valued, but they also want their group to be considered distinct (Tajfel & Turner, 1979). Being distinct enables a person to have features upon which social comparisons can be made, thus enabling this individual to appraise and define the self (Brewer, 1991).

Distinctiveness, however, is not a straightforward psychological goal. Rather, people seem to aspire for what has been termed "optimal distinctiveness": a fine balance between similarity and individuation (Brewer, 1991). Group membership allows one to achieve this fine balance. Being part of a group that is different from other groups provides the person with distinctiveness, and allows for self-definition. In parallel, group membership enables a person to feel similar to others, thus satisfying the need for belonging and security.

Social identity theory (Tajfel & Turner, 1979) brings together these two motives to explain interactions between groups from a group member's perspective. Accordingly, individuals are motivated, through their social behaviors, to achieve or maintain a "distinctive group identity associated with positive value connotations" (Tajfel, 1982, p. 17). Researchers investigating social identity processes have established that threats to one of these two goals – collective pride or distinctiveness– can lead to negative behaviors and attitudes, such as outgroup derogation (Branscombe, Ellemers, Spears, & Doosje, 1999). The effects of these identity-related threats, however, may extend well beyond the negative attitudes conventionally researched in social psychology. Defending collective pride, and conversely redressing humiliation, has been identified as factors in the Israeli-Palestinian conflict, for example (Tessler, 1994). The distinctiveness motive, and conversely the fear of assimilation, has been said to fuel the "troubles" of Northern Ireland (Darby, 1986). Quite possibly then, identity-related threats may underlie the motivations of homegrown jihadists, who

view the West as engaging in a conspiratorial assault on either their collective pride as Muslims, the distinctiveness of Muslims, or both.

Factor 2: Predisposition

Most Muslims do not embrace the jihadi narrative. Nevertheless, the narrative is quite prevalent, and many Muslims are aware of its tenets. Because so many people are exposed to the jihadi narrative and yet so few people engage in terrorism, the narrative alone is insufficient to predict terrorism. This lack of predictive power has been termed the "specificity problem" (Taylor, 1988, p.145; Horgan, 2005, p.74, Sageman, 2004 p.99), a shortcoming that has plagued most psychological explanations of terrorism. The specificity problem can be recognized here insofar as the jihadi narrative might radicalize some individuals, yet many people who do not become radicalized nevertheless accept the jihadi narrative. To address the specificity problem, our model of homegrown terrorism extends beyond the effects of the jihadi narrative and specifies who is more likely to support the use of terrorism. Accordingly, the second factor in our model is a personality characteristic.

Although considering an individual level variable such as personality is consistent with many predictive models of behavior in the field of psychology (Ajzen & Fishben, 1980; Webster, 2009), it also contradicts most psychological accounts of terrorism. Indeed, terrorism researchers generally agree that "the vast majority of terrorists neither suffer from mental disorders nor can be *classified by a certain personality characteristic*" (Kruglanski & Fishman, 2009, p. 8, italics added). Presumably "One can identify a body of evidence in support of the

position that terrorists are not necessarily characterized by types of distinct personality traits" (Horgan, 2005, p.63). Despite these claims, a thorough review of all published data on this topic, reported in Manuscript 3, failed to reveal any empirical study concluding that personality traits are not linked to terrorism.

Among the many studies cited to support the nonexistence of a distinct personality among terrorists, only two studies were found to actually include a direct assessment of personality traits. In one study, Gottschalk and Gottschalk (2004) administered the MMPI-2 to 90 Palestinian and Israeli terrorists, as well as to a control group comprised of 61 Palestinians and Israelis not involved in terrorism. Here, terrorists were found to display higher levels of psychopathic, depressive, and schizophrenic tendencies. The only other study involving a personality assessment was conducted by Merari and his colleagues (2010), who administered an adapted version of the California Personality Inventory (CHPI) to 41 Palestinian terrorists. The authors chose to disregard the test results, however, because only nine people agreed to complete the CHPI.

Thus, the prevailing belief that individuals who engage in terrorism do not have a distinct personality profile is seemingly unsubstantiated. Conversely, proposing that individuals attracted to terrorism have distinct personalities seems not only plausible, but with regards to the field of personality psychology, it is consistent with countless research findings linking personality and behaviour.

For example, consider the five most researched personality traits of extraversion, agreeableness, conscientiousness, neuroticism, and openness to experience (McCrae & Costa, 1987). Several robust patterns have emerged from

the vast research connecting these traits to behavioral categories. People who rate high on openness to experience, for example, are more likely to engage in artistic behaviour (Larson, Rottinghaus, & Borgen, 2002). Low conscientiousness, on the other hand, has been consistently linked to criminality and antisocial behaviour (Ozer & Benet-Martinez, 2006). Some personality psychologists even claim that personality traits are not only predictive of behavioral categories, but rather both are opposite sides of the same coin: behavioral interests are expressions of personality (Holland, 1997). Based on this recognition, individuals who engage in terrorist activities might plausibly have a unique personality profile that differentiates them from the vast majority who do not engage in terrorism.

Social dominance orientation.

Social psychological research has generated a number of general theories designed to explain the dynamics of intergroup conflict (Taylor & Moghaddam, 1994). Yet only one of these theories features a personality characteristic at its core: social dominance theory (SDT). SDT, therefore, might be well positioned to inform our model about the link between personality and conflict, and ultimately a possible link between personality and terrorism.

To be clear, SDT was originally conceived to explain the absence of conflict, or more precisely how hierarchical relations between groups remain stable, even though these relations are unfavorable to members of low-status groups (Sidanius & Pratto, 1999). According to SDT, intergroup stability can be traced to a fundamental human predisposition that has been labeled social dominance orientation (SDO). Construed as a measurable personality

characteristic, SDO denotes an individual's tendency to value group status and hierarchy, while devaluing egalitarianism (Sidanius & Pratto, 1999). Individuals high on SDO would believe, for example, that "some groups of people are simply inferior to other groups" (Pratto, Sidanius, Stallworth, & Malle, 1994).

Since the initial theoretical development of SDT, a great deal of research has confirmed that people who are *high* on SDO generally support the social hierarchy they live in, regardless of whether they are members of an advantaged or disadvantaged group (Levin, Federico, Sidanius, & Rabinowitz, 2002; Pratto, Sidanius, & Levin, 2006). Thus, when challenges to the status quo emerge, such as protests, revolutions, and even terrorism, those involved are theoretically expected to be members of the disadvantaged group who are *low* on SDO. This relationship between low SDO and social defiance has been documented across several studies (Overbeck, Jost, Mosso, Flizik, 2004). This evidence suggests that low SDO can be considered a predisposing personality characteristic for conducting terrorism.

Other research findings, however, suggest the opposite, indicating that *high* SDO may also be considered a predisposition for adopting violent ideologies. In various studies, SDO has consistently been linked to prejudice, nationalism, patriotism, political conservatism, and cultural elitism (Pratto, Sidanius, Stallworth, and Malle, 1994, Pratto et al., 2000; Sidanius & Pratto, 1999), all of which can conceptually be linked to terrorism. Evidently, when considering SDO-related research altogether, there exists a robust relationship

between SDO and intergroup conflict. The exact nature of that relationship, however, remains somewhat unclear.

To guide the engineering of our two-factor model, perhaps the most instrumental findings stem from a survey conducted in Lebanon (Levin, Henry, Pratto, & Sidanius, 2003). This is the only study to have directly investigated the relationship between SDO and terrorism. Here, low SDO was found to characterize individuals who support terrorist attacks against the West. To be precise, the findings involved a mediation, whereby lower SDO was associated with higher Arab identification, and higher Arab identification predicted greater support for terrorism against the West. While these findings indicate an indirect relationship between SDO and terrorism, they nonetheless support a body of research suggesting that low SDO ostensibly sets apart individuals who are more likely to support –or engage in– violence and terrorism. Therefore, low SDO constitutes the second factor in our two-factor model: a personality characteristic specifying who is predisposed to engage in homegrown terrorism.

The Two-Factor Model of Homegrown Terrorism

Figure 1 depicts how the two-factor model would specify, within a generic group, which members would be more likely to engage in homegrown terrorism. The first factor is a collective narrative that emphasizes a threat to one's collective identity. Here, a specific interpretation of events concerning the group is available to members in a coherent story form. Within this specific interpretation, events are construed as evidence of a threat to the group's identity. Group members who

are exposed to this narrative and believe the threat therein are expected to be more likely to engage in violence as a response to this threat.

The second factor is SDO, a personality characteristic that is expected to specify who, among those who have internalized the threat proclaimed in the narrative, is more likely to engage in terrorist activity. As represented in Figure 1, we do not contend that all individuals who are low on SDO will become terrorists. However, many people who engage in terrorism are expected to be relatively low on SDO.

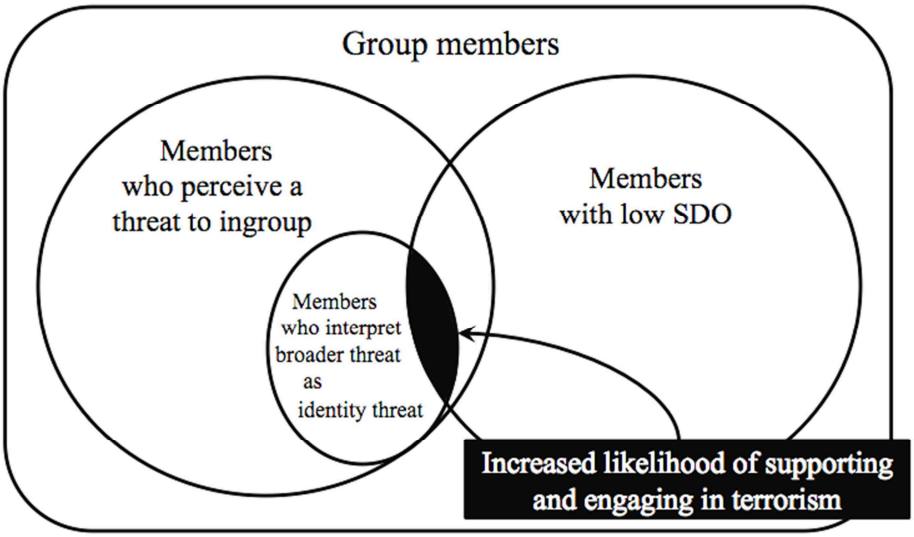

Figure 1. Depiction of the two-factor model of homegrown terrorism, applied to a generic group.

Together, these two factors are thought to predict homegrown terrorism. As our objective is to better understand the psychology of homegrown jihadists, an initial test of our model was performed with Canadian Muslims. In a post 9/11 era, conducting terrorism research with a Muslim population is an extremely delicate endeavor. To allay fears about the motivations underlying the study and

possible misuses of data, we conducted an anonymous internet-based survey. On this survey, Canadian Muslims were asked to report the level of collective pride they associate to their Muslim identity, their perceptions about threats to Islam, their social dominance orientation, and their level –if any– of aggressive action tendencies towards non-Muslim Canadians. The survey was widely publicized, using contacts made during a previous field study conducted with members of the various Canadian Muslim communities (i.e., Bartlett, Birdwell, & King, 2010).

In this way, Study 1 was a preliminary test for each of the two factors in our model. The first factor was investigated by testing the relationship between a threat to collective pride and aggression. Respondents who perceived a threat to Islam and reported low collective pride were expected to report more aggressive action tendencies towards non-Muslim Canadians. The second factor was investigated by testing the relationship between SDO and aggression. Here, respondents who reported lower levels of SDO were expected to report more aggressive action tendencies towards non-Muslim Canadians.

Study 1

Participants

Our survey was advertized on websites intended for Canadian Muslims, such as TorontoMuslims.com. Additionally, Muslim university student associations across Canada were contacted and asked to publicize the survey through their mailing lists. An advertisement was placed in the conference booklet of Canada's largest annual Islamic convention. Diaspora-focused organizations,

such as the Canadian Friends of Somalia, were also very helpful in advertizing the survey.

Participation was restricted to residents of Canada, 18 years of age and older, who identified as Muslim. As compensation, respondents were sent an electronic gift card of $10 redeemable at an online bookstore.

In total, 239 people completed the online survey. Of these, 16 surveys were discarded due to an erroneous answer on a reading verification question, and seven surveys were discarded as respondents simply chose the same answer throughout the whole survey. Thus, statistical analyses were conducted on 216 surveys. Of these, 115 were completed by women, 96 by men, and 5 did not indicate their gender. Respondents' ages ranged from 18 to 67 years (M = 26.5). This sample was mostly composed of university students (89 or 41.2%), while others either had full-time or part-time employment, or were in search of work. A majority (171 or 79.2%) reported practicing Sunni Islam, while 20 (or 9.3%) reported being Shia, 13 (or 6%) reported being Sufi, and 12 (or 5.6%) reported being Salafi. The distribution of respondents according to their province or residence is presented in Table 2.

Table 2. *Number of respondents by province.*

Province	Respondents
Alberta	2
British Columbia	9
Manitoba	4
New Brunswick	5
Northwest Territories	1
Nova Scotia	2
Ontario	138
Québec	53
Saskatchewan	2
Total	216

Method

A website address in the advertisements directed participants to the online survey, which was divided into three broad sections. The first section was comprised of demographic questions about age, gender, occupation, place of residence, and religious practice.

The second section contained measures of the two psychological constructs central to our hypotheses. First, respondents were asked to complete the 16-item Social Dominance Orientation scale (Sidanius & Pratto, 1999). Second, to assess a threat to collective pride, respondents were asked to complete a measure of collective-self esteem (CSE). Here, two distinct types of CSE, *private* and *public*, were measured using two subscales of the original CSE scale created by Luhtanen and Crocker (1992). Private CSE refers to the personal evaluation of one's group, and reflects the collective pride derived from group

membership. Public CSE, conversely, refers to the perception of how other people evaluate one's group (Luhtanen and Crocker, 1992, p. 306). These two subscales were adapted by rewording items to specifically pertain to respondents' Muslim identity. In doing so, one item from each original subscale was omitted, as they simply could not be reworded to be relevant to a religious identity. Thus, the final adapted version of this CSE scale consisted of six items, where three items were used to measure *private* CSE (collective pride), and three items were used to measure *public* CSE.

The third section consisted of questions pertinent to homegrown jihadism. First were two items used to measure respondents' perceptions of a threat to Islam: "Western countries, including Canada, are against Islam", and "There is a 'clash of civilizations' between non-Muslims and Muslims". Also in this section was the Action Tendencies scale (Lalljee et al., 2009), where respondents were asked "on average, how would you describe your interactions with non-Muslim mainstream Canadians." Respondents rated nine items describing three types of action tendencies. Three items measured *approach tendencies*, such as "I hang out with them"; three items measured *avoidant tendencies*, such as "I keep them at a distance"; and three items measured *aggressive tendencies*, such as "I confront them". The latter was used as our main dependent variable. While they are not exact proxies for terrorism, aggressive action tendencies are conceptually related to violence. Also, aggressive action tendencies are more likely to be reported than violence or terrorism, thus ensuring enough responses to adequately test our model. At the end of the survey, respondents had the opportunity to write

comments or questions. The final page outlined the objectives of the research, and contained the coordinates of the study's authors.

For each measure, such as the SDO scale, the adapted CSE scale, the two items measuring the perceived threat to Islam, and the Action Tendencies scale, respondents rated their agreement with items using 7-point scales, where 1 corresponded to "Not at all" and 7 corresponded to "Very much". Scores were calculated by averaging over items. Additionally, a reading verification item (i.e.: If you are reading this please select "Not at all") was inserted in the survey. When the reading verification item was answered incorrectly, the survey was discarded.

Results

The means, standard deviations, and inter-correlations between measures are displayed in Table 3. Two patterns emerge from these descriptive statistics that, even if not directly related to our hypotheses, are noteworthy. First, respondents reported significantly higher private CSE than public CSE, $t(215) = 15.60$, $p < .001$, $d = 2.16$, 95% CI [1.98, 2.43]. In other words, respondents perceived mainstream Canadians as having a relatively unfavourable evaluation of Muslims, in contrast to respondents' own evaluation of their Muslims identity, which was rather positive. This difference may reflect the increased discrimination reported by Canadian Muslims since 9/11 (see Rousseau, Hassan, Moreau, & Thombs, 2010).

The second noteworthy pattern is that, compared to avoidant or aggressive action tendencies, respondents reported much higher approach tendencies towards non-Muslim Canadians, as confirmed by a repeated-measures ANOVA with a

Greenhouse-Geisser correction[1] (F (1.55,331) = 245.56, $p < .001$, partial η^2 = .534).

Table 3. *Descriptive statistics for sample of Canadian Muslims: Inter-correlations, reliability, uncentered means, and standard deviations*

	2	3	4	5	6	7	α	*M*	*SD*
1. SDO	-.76***	.41***	.29***	-.38***	.69***	.65***	.92	2.52	1.13
2. Private CSE (pride)	—	-.34***	-.18**	.25***	-.67***	-.67***	.83	5.95	1.31
3. Public CSE		—	.01	-.10	.45***	.40***	.63	3.79	1.17
4. Perceived threat to Islam			—	-.25***	.32***	.16*	.50†	3.80	1.27
5. Approach tendency				—	-.44***	-.10	.66	4.93	1.18
6. Avoidant tendency					—	.60***	.84	2.39	1.43
7. Aggressive tendency						—	.80	2.56	1.48

Note: $N = 216$; * $p < .05$; ** $p < .01$; *** $p < .001$; † *Perceived threat to Islam* was computed from two items, each capturing two related, but not identical dimensions of the overarching construct ($r = .33$, $p < .000$), resulting in an alpha that was predictably modest. A more accurate measure of reliability should be calculated using a test-retest reliability index rather than an inter-item reliability index.

Regarding our hypotheses, the pattern of correlations among the variables partially matches our proposed two-factor model. First, respondents who indicated less collective pride (private CSE) regarding their Muslim identity also reported significantly more avoidant and aggressive action tendencies towards non-Muslim Canadians. Second, respondents who had higher (not lower as predicted) SDO

scores were significantly more likely to express higher avoidant and aggressive action tendencies towards non-Muslim Canadians. To further investigate the strength and importance of these relationships, a regression analysis was carried out, testing if SDO, private CSE, public CSE, and perceived threat to Islam predicted aggressive action tendencies (see Table 4).

Predicting aggressive action tendencies.

Altogether, the four variables included in the regression predicted a significant amount of the variance related to respondents' aggressive action tendencies towards non-Muslim Canadians ($R^2 = .50$; $F(4, 207) = 53.73$, $p < .001$). Of these four, only two were significant predictors: SDO ($\beta = .36$, $p. < .001$) and collective pride ($\beta = -.46$, $p. < .001$). These results suggest that higher levels of SDO, together with low levels of collective pride, predict aggressive action tendencies towards non-Muslim Canadians. Precisely, the squared semipartial correlations for SDO and collective pride are .17 and -.26 respectively, together accounting for 43% of the variance in aggressive action tendencies towards non-Muslim Canadians (the remaining 7% is variance shared by all four variables).

Table 4. *Predictors of aggressive action tendencies towards non-Muslim Canadians*

	B	β
SDO	.36	.28***
Private CSE (collective pride)	-.46	-.41***
Public CSE	.17	.14
Perceived threat to Islam	.00	.00

Note. $N = 216$; *** $p \leq .001$; Constant B = 2.55; all variables centered.

A second step was added to the regression in order to verify if any interactions between variables increased the proportion of variance explained; they did not ($\Delta R^2 = .004$; $F(3, 204) = 0.61$, $p = .608$). The interaction of SDO and perceived threat to Islam did not significantly predict aggressive action tendencies towards non-Muslim Canadians (β = -.01, *p*. = .93), nor did the interaction of collective pride and perceived threat to Islam (β = -.07, *p*. = .30), or the interaction of public CSE and perceived threat to Islam (β = .02, *p*. = .74).

In sum, the results of the regression analysis provided only partial support for our hypothesized two-factor model. One finding, that *higher* SDO predicted more aggressive action tendencies, contradicted our hypothesis, which specified that *lower* SDO was to predict more aggressive action tendencies. The other finding is consistent with our hypothesis: lower collective pride predicted more aggressive action tendencies. This, however, was only part of the process outlined in the two-factor model. Missing from the process is the preceding phase, where a *narrative of threat* is re-interpreted as a personalized *threat to collective pride*. To identify this phase from the survey data, a mediation analysis is required.

Mediation analysis would reveal if the narrative of threat (i.e. the perceived threat to Islam) has an indirect effect –through collective pride– on aggressive action tendencies. This indirect effect, if present, would not have been discernible in the previous regression analysis (see Baron & Kenny, 1986).

The indirect effect of the narrative.

This second analysis tested if collective pride mediated the relationship between perceived threat to Islam and aggressive action tendencies. When considered as the sole predictor, perceived threat to Islam significantly predicted both collective pride (a = -.18, p = .008) and aggressive action tendencies (c = .16, p = .023). When collective pride was tested as a mediator, however, the direct effect of the perceived threat to Islam on aggressive action tendencies disappeared (c' = .04, p = .482), and collective pride significantly predicted aggressive action tendencies (b = -.66, p < .001). Figure 2 illustrates the indirect effect of the perceived threat to Islam on aggressive action tendencies through collective pride. To confirm this indirect effect, a Sobel test and bootstrapping procedures with 1000 resamples were conducted (Preacher & Hayes, 2004). These tests confirmed the indirect effect; collective pride significantly mediated the relationship between perceived threat to Islam and aggressive action tendencies (z = 2.59., p < .001; bootstrapping point estimate of .1395 with a 95% bias corrected and accelerated confidence interval [BCa CI] of .0219 to .2454).

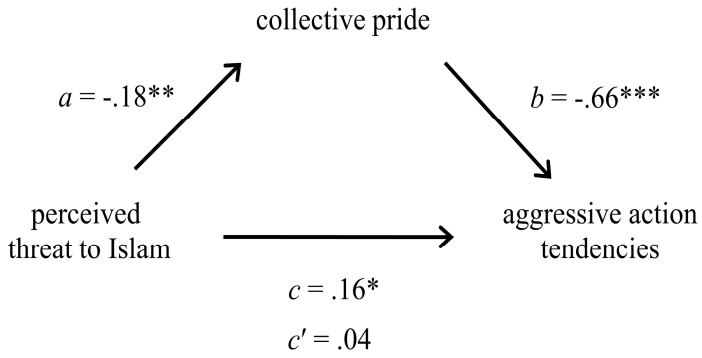

Figure 2. Mediation analysis testing indirect effect of the perceived threat to Islam.

Discussion

The survey data collected from Muslim Canadians for Study 1 depicts a potentially uneasy religious minority. Indeed, self-reports of their private CSE suggests Muslims are proud of their religious identity, yet their public CSE reveals that they are also very aware of the mainstream Canadian enmity towards their religion. This contrast between private pride and public indignity is cause for concern, especially regarding this minority's well-being.

Study 1 yielded preliminary, yet partial support for our proposed two-factor model of homegrown terrorism. To review the main findings, respondents who reported a threatened sense of collective pride and high SDO were more likely to endorse aggressive action tendencies towards non-Muslim Canadians.

These results supported the hypothesis regarding the model's first factor. Our theoretical model specifies that individuals who believe the larger narrative about a threat to their group come to internalize this threat as either one to their collective pride or distinctiveness. Only collective pride was measured during the

survey, yet it successfully predicted aggressive action tendencies. Moreover, the relationship between a perceived narrative of threat and aggressive action tendencies was mediated by collective pride. Given these initial findings, the effect of threats to collective pride requires further examination. Other identity-related threats –such as distinctiveness threats– must also be tested. Testing and comparing different identity threats was pursued in Studies 2 and 3.

The results from Study 1, however, did not support the hypothesis regarding the model's second factor. Although SDO was found to be a predictor, it was high SDO, not low SDO, that was associated with increases in aggressive action tendencies. Further tests of the relationship between SDO and support for terrorism will be pursued in Studies 2 and 3. If the relationship between SDO and aggression is indeed positive, as found in Study 1, this relationship now needs to be replicated.

Study 2

As Study 1 yielded preliminary support for our model, a laboratory paradigm was designed to investigate, in a controlled setting, if the two proposed factors could indeed lead to the legitimization of terrorism. In contrast to Study 1, however, we decided against recruiting Muslim Canadians for Studies 2 and 3. The anonymity of the internet-based survey used in Study 1 did not publicly link individuals to terrorism research. In Study 2 and 3, however, it was necessary for participants to come to the laboratory in-person. This direct involvement of participants in terrorism research was considered too politically sensitive to

include Muslims, especially in a post-9/11 era where Muslims en masse have been unduly blamed for the actions of jihadists.

To maintain generalizability to homegrown jihadists, however, we recruited members a group with comparable collective identity features. That is, a group with a well-delineated religiously based collective identity that is considered a minority in Canada and the West. Luckily, a group that matches these identity features was readily available at our large urban university: Jewish students. To be clear, the selection of Jewish participants was solely done for theoretical and practical reasons. Just as we do not purport that Muslims are especially predisposed to engage in terrorism, we do not purport that Jews are especially predisposed to engage in terrorism either.

Experimental Paradigm

Our two-factor model of homegrown radicalization was tested using an experimental paradigm developed to measure individuals' appraisals of terrorism. For this paradigm to succeed, the two experiments had to be advertised not as studies on terrorism, but rather as studies about jury decision-making. Once in the laboratory, participants were presented with materials relating to a court case, and then asked to appraise the alleged perpetrator's crime, which was a plot to bomb a crowded market. The context of a court case allowed us, through the use of court documents, to manipulate the narratives justifying the terrorism plot. This way, a narrative emphasizing a threat to collective pride could be compared, in a controlled fashion, to a narrative emphasizing a threat to distinctiveness. The

purported goal of studying "jury decision-making" enabled us to collect participants' appraisals of the terrorism plot.

In Study 2, a narrative of a threat to collective pride was compared to a narrative of threat to distinctiveness, and a control condition where no narrative was presented. Based on the results of Study 1, participants exposed to a narrative of threat to collective pride were expected to appraise terrorism more positively than other participants in other conditions. Participants who reported high SDO were also expected to appraise terrorism more positively than others, regardless of the narrative's theme or presence.

Method

Participants.

A total of 128 Jewish people from the Montreal area, mostly undergraduate students at McGill University, were recruited. Participants were recruited using posters placed on university campus and Internet advertisements. Upon debriefing, 23 people declared –without prompting from the experimenter– being suspicious about the court case described during the experiment. Thus, only the data collected from the remaining 105 participants were used in the statistical analyses. This sample was composed of 72 women and 33 men, with a mean of 21.2 years of age.

Procedure.

Pre-laboratory phase.

One week prior to coming to the laboratory, participants were required to complete a short online questionnaire. Throughout this questionnaire, participants

rated their agreement with items on 7-point scales, where 1 corresponded to "Not at all" and 7 corresponded to "Very much". First were eight items, adapted from Grieve and Hogg (1999), used to measure participant's level of identification with the Jewish collective identity. As the manipulation in this experiment was designed to elicit motives related to people's collective identity, we expected those who highly identified as Jewish would be most affected by our manipulation. Second was the Social Dominance scale (Sidanius & Pratto, 1999), which consisted of 16 items measuring participant's tendency to view a natural group-based hierarchy in society. Scores for each measure were calculated by averaging over items.

In-laboratory phase.

Upon arrival in the laboratory, participants were reminded about the (bogus) objective of the study: To understand how various information influences jurors' perceptions. In order to do this, participants were told, they would be presented with two pieces of information regarding a trial, and then asked to complete a questionnaire about the person standing trial.

On a desktop computer, participants were then presented with the first piece of information, a (fictitious) news article from the website of the Canadian Broadcasting Corporation (CBC). This articled described a trial that had just begun in Israel for two suspects charged with planning a terrorist attack in Gaza city. A year prior, the article reports, a car full of explosives was discovered by Palestinian security forces. The car had been parked near a densely populated market area in Gaza city. Two young men, one an American of Israeli origin, and

his accomplice an Israeli studying in the U.S., were arrested several weeks later on suspicion of terrorist activities. A police search of their apartment revealed traces of explosives identical to the kind found in the bomb-laden car.

Three elements of this fictitious article are noteworthy as they were specifically designed to increase its realism and effect. First, the article was reported by CBC, arguably the most popular and reputable news provider in Canada. The article was designed so that, excluding the story itself, all other elements on the webpage were actually online, thus showing real advertisements, accurate weather updates, and current news headlines. The second noteworthy element was the nationality of the two men standing trial: they were Jewish, thus sharing a collective identity with the Jewish participants. Third, both the terrorism plot and the trial took place in Gaza and Israel respectively. Having the events occur in the Middle East allowed for the possibility that they were not reported by Western media when they first occurred, which in turn allowed for the possibility that participants might not have previously heard about them.

After reading the CBC articles, participants were given the second piece of information regarding the trial: a statement of defense. This text was presented to participants as a verbatim transcript of the statement given by one of the defendants in court, offering the jury his reasons for planning the attack. There were two different versions of this statement. In each version, the defendant admitted to planning the bombing and explained: “I do not consider my actions to be criminal. My actions were not only justified, but necessary.” Each version then proceeded to describe a different social identity threat as justification for the

attack. In one version, a threat to collective pride was emphasized. This defense statement included claims about collective humiliation and threats to the pride of Jews. For example, the defendant argues: "We were once proud people, but for too long now this conflict has made us feel ashamed of our Jewish identity. […] we need to send an immediate forceful message to our enemies, who are threatening the respect of Jews everywhere." The other version of the defense statement emphasized a threat to the distinctiveness of Jewish identity. In this version, the defendant argues: "Our actions in Gaza were carried out because the unique identity of the Israelis and the Jewish people as a nation is severely endangered […]. The enemy would like to eliminate everything about us that makes us Jews."

The two defense statements were identical in length at 486 words, and differed only in the types of identity threats mentioned. A third of the participants did not receive either defense statement, but rather a text describing the responsibilities and importance of being a jury member. Identical in length with 486 words, this document was used as a control for the texts describing identity threats.

After first reading the CBC article and then either a statement of defense or the control text about jury duty, participants completed a questionnaire. This began with a manipulation-enhancement question, which required participants to list the three main justifications offered by the defendant. Those assigned to the control condition were asked to list the three most important duties of jurors.

Participants were then asked to rate the bomb plot using ten positive and ten negative adjectives. With a 7-point scale, where 1 corresponded to "not at all" and 7 corresponded to "very much", participants rated the extent each positive adjective (heroic, necessary, just, fair, honorable, correct, legitimate, courageous, ethical, reasonable) and each negative adjective (wrong, arrogant, immoral, bad, cruel, irrational, disturbed, crazy, evil, unacceptable) described the bomb plot.

Upon completing the questionnaire, participants were asked to comment on the experiment. At this point, if participants declared being suspicious about the authenticity of the CBC article or the trial, their data was removed. Finally, all participants were debriefed, compensated, and thanked.

Results

On average, participants strongly identified as Jewish, and reported medium levels of social dominance orientation. Unsurprisingly, participants appraised the bomb plot as barely positive and highly negative (see Table 5).

The correlation matrix revealed preliminary support for our model's personality factor. Specifically, higher SDO scores were associated with more positive and less negative appraisals of the bomb plot. Furthermore, another personality-level variable also correlated with appraisals: Identification. Higher levels of collective identification were associated with more positive appraisals of the bomb plot.

Table 5. *Summary of inter-correlations, reliability, uncentered means, and standard deviations for Study 2.*

Variable	2	3	4	α	M	SD
1. Identification	.25**	.18*	-.07	.85	5.30	0.93
2. SDO	—	.47***	-.21*	.88	2.19	0.85
3. Positive appraisal of bomb plot		—	-.63***	.88	1.57	0.71
4. Negative appraisal of bomb plot			—	.82	5.92	0.91

Note: $N = 105$; * $p < .05$; ** $p < .01$; *** $p < .001$.

For simplicity, the positive and negative appraisals of the bomb plot were combined to create one dependent variable. This was done by first standardizing the average ratings of the 10 positive traits and 10 negative traits of the foiled bomb plot. A difference score was then calculated by subtracting the standardized average negative ratings from the standardized average positive ratings. The resulting difference score indicated how favorably participants appraised the bomb plot, with higher scores representing more positive ratings of the bomb plot, and lower scores representing more negative ratings of the bomb plot.

To test the impact of the different threats emphasized in the narratives on participants' appraisals of the terrorist plot, a hierarchical multiple regression was conducted. The *threat* condition, a three-level categorical variable, was represented with two dummy codes (see Aiken & West, 1991). Here, the *control* condition was designated as a base group, and assigned the value of "0" for each dummy code. The *pride threat* condition and *distinctiveness threat* condition were assigned "1" for one dummy code, and the value "0" for the other code.

Consequently, the *control* condition was coded as "0, 0", the *pride threat* condition was coded as "1, 0", and the *distinctiveness threat* condition was coded as "0, 1".

In the first step, identification and SDO scores, both centered, and the two dummy codes were used to predict appraisals of the bomb plot. In the second step, two terms, each representing the interaction between identification and a threat condition, were added as predictors. These two interaction terms were computed by multiplying the centered identification score with each dummy code that represented a *threat* condition. The results of this regression analysis are presented in Table 6.

Table 6. *Multiple regression analyses for predicting participants' appraisals of the bomb plot.*

	B	β	ΔR^2
Step 1			.15**
Identification	.12	.06	
SDO	.76	.36***	
Pride threat	.38	.10	
Distinctiveness threat	.03	.01	
Step 2			.04†
Identification	-.43	-.22	
SDO	.81	.38***	
Pride threat	.31	.08	
Distinctiveness threat	-.09	-.02	
Identification x pride threat	.95	.26*	
Identification x distinctiveness threat	.66	.21	

Note: $N = 105$; † $p \leq .10$; * $p < .05$; ** $p < .01$; *** $p < .001$; Constant B = -.01; all continuous variables centered.

The variables included in the first step of the hierarchical regression predicted a significant amount of the variance related to participants' appraisals of the bomb plot (R^2 = .15; F(4,100) = 4.38, p = .003). Upon inspection, only SDO was a significant predictor (β = .36, p. < .000). At the second step, the interaction between identification and the pride threat significantly predicted participants' appraisals of the bomb plot (β = .26, p. = .042). This interaction term, however, only marginally increased the proportion of variance explained (ΔR^2= .04; F(2,98) = 2.27 p = .10). Although a marginal predictor in the context of a regression, the interaction between identification and the pride threat proved to be a significant univariate predictor, as it yielded a significant zero-order correlation with participants' positive appraisals of the bomb plot (r = .18, p = .037). Interactions terms involving SDO and the threat conditions did not predict any additional variance in participants' appraisals.

In sum, these results indicate that higher levels of SDO predicted more favorable appraisals of the bomb plot. Furthermore, a threat to collective pride had the marginal effect of increasing favorable appraisals of the bomb plot for those who were highly identified.

Discussion

In Study 2, the two-factor model of homegrown radicalization was tested in a laboratory setting. The first factor, a narrative emphasizing a threat to collective pride, was experimentally manipulated to examine its influence on appraisals of terrorism. The results modestly suggest that such a narrative could shift perceptions of terrorism. Highly identified participants who were exposed to

a narrative outlining a threat to collective pride judged terrorism more positively than other participants. The model's second factor yielded more substantive results regarding appraisals of terrorism. Here, participants who scored higher on SDO rated terrorism more positively than participants reporting lower levels of SDO.

Consistent with the results of Study 1, the results of Study 2 provide additional support for our two-factor model. Our contention about a threat to collective pride as being an effective narrative to legitimize terrorism remains indeterminate, however, with only mediational support from Study 1, and marginal statistical evidence from Study 2. To clarify the relationship between these variables and further investigate the reliability of our initial findings, we sought replication. Thus, in Study 3, the same experimental paradigm was used, but with two important modifications.

First, instead of asking participants to appraise what was an *intention* to conduct terrorism in Study 2, participants in Study 3 were asked to appraise an *act* of terrorism. Indeed, if our model is to identify factors leading to terrorism, the pattern of results must hold for actual terrorism. Indeed, failed *intentions* to commit terrorism might elicit different appraisals from participants than successful *acts* of terrorism.

The second modification involved adding another narrative for comparison. Instead of having three conditions that included a control condition, another type of narrative was added in lieu of the control text. Thus, the narrative emphasizing a threat to pride could be compared not only to a narrative

emphasizing a threat to distinctiveness, but also to a narrative emphasizing another identity-related threat: a threat to belonging. Belonging to a group, and feeling accepted, is recognized as a central psychological motive (Baumeister & Leary, 1995; Fiske & Taylor, 2007, p.41), so it was therefore deemed a suitable match against collective pride and distinctiveness. If a threat to collective pride is as effective in justifying terrorism as we suggest, this threat should influence appraisals more than the two other narratives.

Study 3

Method

Participants.

A total of 100 Jewish people from the Montreal area, mostly undergraduate students at McGill University, were recruited. Of these, 44 were men and 56 were women, with a mean age of 21.2 years. Participants were recruited using posters placed on university campus and Internet advertisements. Upon debriefing, 18 people declared being suspicious about the authenticity of the court case, without being prompted by the experimenter. Only the data collected from the remaining 82 participants (48 women and 34 men) were used in the analysis described next.

Procedure.

One week prior to coming to the laboratory, participants were required to complete an online questionnaire that contained the same two measures of individual differences as in Study 2. These were the measure of collective identification with Jewish identity and the Social Dominance scale.

Upon arrival in the laboratory, participants were reminded about the (bogus) objective of the study: To understand how various information influences jurors' perceptions. On a desktop computer, participants were then presented with a (fictitious) news article from the CBC website. This articled described a trial that had just begun in Israel for two suspects charged with conducting a terrorist attack in Gaza city. A year prior, the article reports, three simultaneous explosions ripped through a commercial building, a market, and a housing complex in Gaza city, killing 16 Palestinians, and injuring over 200. Two young men, one an American of Israeli origin, and his accomplice an Israeli studying in the U.S., were arrested several weeks later on suspicion of terrorism. A police search of their apartment revealed two assault rifles, nearly 20kg of explosives, and instructional videos for transforming mobile phones into remote detonators.

After reading the CBC articles, participants were then presented with a statement of defense. There were three different versions of this statement. In all versions, the defendant admitted to planning the bombing, yet emphasized a different facet of collective identity as justification for the attack. In one version, the defendant described a threat to the collective pride of Jews. In the second version, the defendant described a threat to the distinctiveness of Jewish identity. In the third version of the defendant's statement, belonging was emphasized as a reason to respond to a threat. Here, the text included themes of unity and belonging, such as "[…] we need to stand together as Jewish brothers and sisters", and "[…] each Jew must understand that when one of us is under attack, all of us

are under attack". The three defense statements were identical in length at 473 words, and differed only in the type of identity threat embedded in the narrative.

After first reading the CBC article and a statement of defense, participants completed a questionnaire. This began with a manipulation-enhancement question: Participants were asked to list the three main reasons provided by the defendant to justify his action. Participants were then asked to use a 7-point scale, where 1 corresponded to "Not at all" and 7 corresponded to "Very much", to rate the extent ten positive and ten negative adjectives described the bombing.

Upon completion of the questionnaire, participants were encouraged to comment on the experiment. Here, if participants declared being suspicious about the authenticity of the CBC article or the trial, their data was removed. Finally, all participants were debriefed, compensated, and thanked.

Results

Measures of individual differences are presented in Table 7. On these measures, participants strongly identified as Jewish and reported medium levels of social dominance orientation. As in Study 2, participants' perceptions of the bombings were established by calculating the *positive appraisal of bombing*, created by averaging participants' ratings of the 10 positive traits used to describe the bombing and the *negative appraisal of bombing*, created by averaging the ratings of the 10 negative traits used to describe the bombing. Participants generally appraised the bombing as not positive and very negative.

Among the measures of individual differences, only SDO correlated with the appraisals of the bombing. Replicating the results found in Study 2, higher

SDO scores were associated with more positive and less negative appraisals of the bombing.

Table 7. *Summary of inter-correlations, reliability, uncentered means, and standard deviations for Study 3.*

Variable	2	3	4	α	M	SD
1. Identification	-.02	.10	-.16	.88	5.21	1.02
2. SDO	—	.34**	-.24*	.92	2.16	1.06
3. Positive appraisal of bombing		—	-.63***	.86	1.45	0.66
4. Negative appraisal of bombing			—	.84	6.20	0.90

Note: $N = 82$; * $p < .05$; ** $p < .01$; *** $p < .001$.

A multiple regression analysis was conducted to test the impact of the different threats on participants' appraisals of terrorism. These appraisals, which constitute the dependent variable predicted in this regression, were calculated –as in Study 2– by subtracting the standardized average negative appraisals from the standardized average positive appraisals. The regression analysis was also identical to that of Study 2, as was the dummy coding of the *threat* conditions. The *belonging threat* condition, however, replaced Study 2's *control* condition. The results of this analysis are presented in Table 8.

Table 8. *Multiple regression analysis for predicting participants' appraisals of the bombing.*

	B	β	ΔR^2
Step 1			.16**
Identification	.28	.16	
SDO	.50	.29**	
Pride threat	.70	.19	
Distinctiveness threat	.11	.03	
Step 2			.12**
Identification	-.04	-.02	
SDO	.55	.32**	
Pride threat	.77	.21	
Distinctiveness threat	.12	.03	
Identification x pride threat	1.39	.39**	
Identification x distinctiveness threat	-.09	-.03	

Note: $N = 82$; ** $p < .01$; constant B = -.26; all continuous variables centered.

The variables included in step 1 of the hierarchical regression predicted a significant amount of the variance related to participants' appraisals of the bombing ($R^2 = .16$; $F(4,77) = 3.52$, $p = .011$). Among these variables, SDO was the only significant predictor ($\beta = .29$, $p. = .007$). At the second step, in addition to the main effect of SDO ($\beta = .32$, $p. = .002$), the interaction between *identification* and the *pride threat* predicted participants' appraisals of the bombing ($\beta = .39$, $p. = .003$). The addition of this interaction term significantly increased the model's predictive ability ($\Delta R^2 = .12$; $F(2,75) = 6.36$, $p = .003$). Conversely, interactions terms involving SDO and the threat conditions did not predict any additional variance in participants' appraisals. These results indicate

that participants who highly identified as Jewish, and were exposed to the *pride threat*, appraised the bombing more positively than other participants. Figure 3 displays the effects of this interaction.

To confirm that the threat to pride affected high identifiers' appraisals of the bombing, a simple slope test was conducted. Thus, for each threat condition, a regression was conducted to test if the level of identification predicted participants' appraisals of the bombing. Only in the condition emphasizing a threat to group pride were participants' levels of identification associated with their appraisals of the bombing (t (2, 25) = 3.55, p = .002).

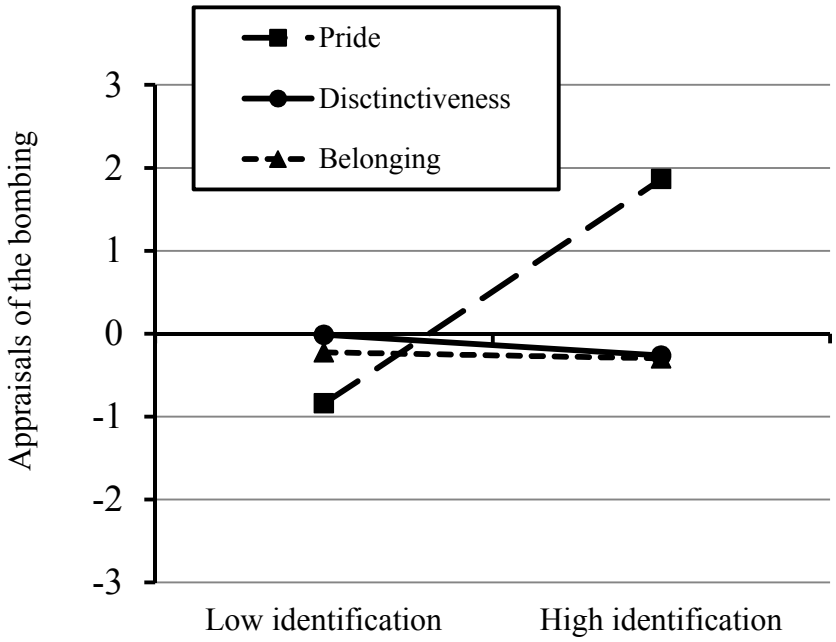

Figure 3. Appraisals of bombing as a function of threat graphed at low identification (−1 standard deviation) and high identification (+1 standard deviation).

Discussion

Study 3 yielded similar results to Study 2, and lends additional support for both factors in our model of homegrown terrorism. The first factor, a narrative emphasizing a threat to collective pride, seemingly influenced participants' appraisals of terrorism, whereas narratives conveying other identity-related threats did not. To be precise, highly identified participants who were exposed to a narrative outlining a threat to collective pride judged terrorism more positively than other participants. SDO, the model's specified personality characteristic, was again found to be predictive of terrorism appraisals. Here, participants who scored higher on SDO rated terrorism more positively than participants reporting lower levels of SDO.

General Discussion

Based on two leading social-psychological theories of intergroup conflict, social identity theory and social dominance theory, two psychological factors were hypothesized to be present in the radicalization process leading to homegrown terrorism. The first factor was embedded in the narrative propagated by jihadists worldwide: the threat to collective pride. The second factor was SDO, a personality characteristic thought to be associated with intergroup conflict. The combination of an influential message about group threat, together with low SDO, was theorized as increasing the likelihood of legitimizing the use of terrorism.

Results that partially supported this two-factor model of homegrown terrorism were found across three studies. In Study 1, a survey conducted with Canadian Muslims, respondents who reported the highest aggressive action

tendencies towards non-Muslim Canadians were those who reported (a) lower levels of collective pride and (b) higher SDO. The experiments undertaken in Study 2 and Study 3 provided additional support for these findings. In a controlled, laboratory setting, participants exposed to a narrative emphasizing a threat to their collective pride appraised terrorism more positively than participants exposed to other narratives, or no narrative. Moreover, during these experiments, higher levels of SDO distinguished those who would appraise terrorism more positively. A revised two-factor model, accurately reflecting our findings, is depicted in Figure 4.

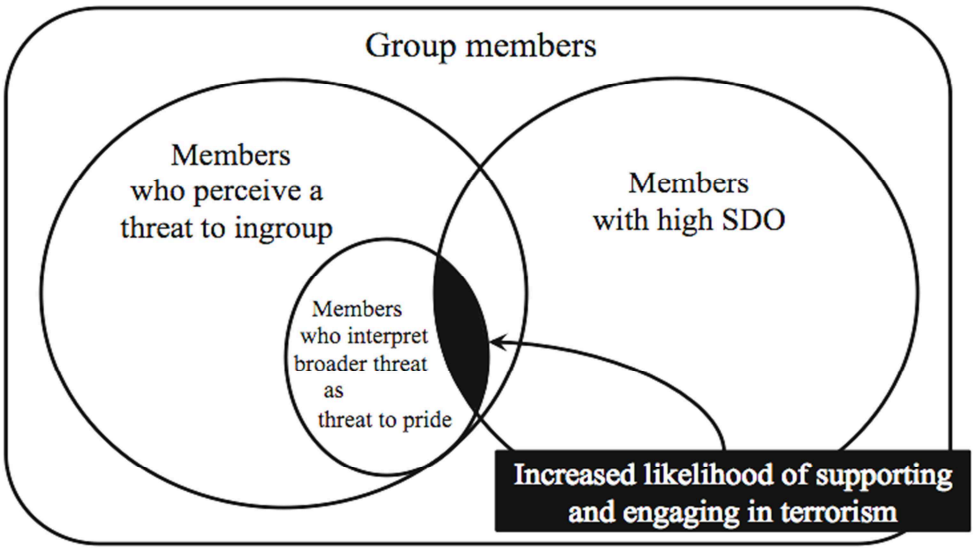

Figure 4. The revised two-factor model of homegrown terrorism.

Next, we discuss the implications of these findings. Each factor is contextualized within the broader psychological research on terrorism. We also consider the potential of our findings to inform future empirical research, and ultimately counter-terrorism strategies.

Factor 1: A Narrative of Threat

Collective narratives provide coherent templates through which individuals can understand events. Narratives exist for all groups, and as we have argued, jihadists have constructed their own. As the jihadi narrative spreads, an increasing proportion of jihadists are Westerners who have been convinced about a global threat to Islam, and have chosen violence to defend it. Since 2003, most jihadi cells in Europe have developed and operated independently from Al Qaeda's central leadership (Ministry of the Interior and Kingdom Relations, 2006). Crone and Harrow (2010) highlight that compared to previous cohorts, jihadists active between 2004 and 2008 trained abroad less, fought jihad abroad less, and had less attachments to international organizations. Specifically, of the 21 serious terrorism plots[2] between 2004 and 2009 in the West, 12 (57%) were autonomous, without direction from established foreign jihadi organizations (Cruickshank, 2010). Beyond the recognition that it has been an effective recruitment tool, exactly how the jihadi narrative motivates people seemingly unconnected to the jihadi movement to engage in violence has not been methodically investigated. Indeed, in reviewing the social science literature pertinent to counter-terrorism, the RAND corporation points out that the features of messages that successfully promote terrorism remain largely unknown (Davis & Cragin, 2009). Potentially, our findings may generate a better understanding of this messaging: The efficacy of the jihadi narrative lies in the motivations elicited by the threat it conveys.

Study 1 uncovered associations among a narrative of threat, collective pride and aggressive action tendencies among Muslim Canadians. The experiments in Studies 2 and 3 then went on to explore *how* such narratives of threat might impact the judgments of group members' actions. Both experiments deceived participants into thinking that group members had either truly planned, or successfully carried out, acts of terrorism. When these acts of terror are weaved into a story –a narrative– as defending against a threat to group pride, strongly identified group members viewed terrorism more positively. These results potentially identify an effective communication strategy to garner support for violence. Interestingly, even if they do not personally experience humiliation or threat, group members who value their group identity are more likely to view a violent response positively.

Across our experiments, the threats to distinctiveness did not lead to increased support for violence. To be clear, these results do not confirm that threats to distinctiveness have no effect in mobilizing support for violence. Such threats might be efficacious for other groups, just not for the Jewish participants involved in our experiments. It is quite possibly that religion provides an unfailing level of distinctiveness for religion-based identities, inoculating individuals from such threats. Future research might investigate if groups with different identity compositions, such as groups based on a cultural identity, are more responsive to threatened distinctiveness. The existence of terrorists groups, such as the Front de Libération du Québec, claiming to fight perceived assimilation on behalf of their cultural group, suggest that the threat to distinctiveness warrants future research.

The jihadi narrative: A call to defend our pride.

Threats to collective pride have been well researched in social psychology, and results indicate that such threats reliably elicit negative intergroup attitudes (Branscombe & Wann; 1994; Riek, Mania, & Gaertner, 2006, p. 339). Social psychologists, however, have not linked these threats to terrorism, and this despite terrorism experts agreeing that "group, organizational and social psychology, with a particular emphasis on 'collective identity,' provides the most constructive framework for understanding terrorist psychology and behavior" (Post, 2007, p. 4).

Interestingly, the terrorism studies literature contains many indications about the relevance of collective pride, as opposed to distinctiveness, to the motivations of jihadists. Many experts cite factors directly related to collective pride in their explanations of terrorism, such as dignity, honour, respect, or conversely humiliation and disrespect. Sageman (2008b), for example, suggests that terrorists frame their group as the "only ones who defend Muslim interest and honor against Western cultural and physical aggression" (p.224). Wiktorowicz (2004) concludes from his research with Al-Muhajiroun, a transnational Islamist organization seeking a worldwide Islamic revolution, that an important motivator for joining an extremist organization is a "sense of cultural weakness, racism, humiliation" (p.8). Similarly, Jenkins (2007) claims that such extremist groups provide honour, dignity, and a religious duty in response to humiliation, shame and guilt. In defending against the threat to Islam, jihadists are in part defending their collective pride.

Narratives as a counter-terrorism tool.

By analyzing the messaging used by terrorists to incite violence, research may uncover the best messages to counter it effectively. The experimental paradigm used in the present article might be a useful method for this. Manipulating collective narratives enables researchers to investigate "the way in which individuals within a given cultural community engage with in-group stories that prime an expectable cognitive, emotional, and social response" (Hammack, 2008, p.223). Isolating the features that render a narrative particularly effective can directly inform counter-terrorism and counter-radicalization strategies.

Although we have seemingly isolated one feature underlying its effectiveness, many others psychological aspects of the narrative's appeal remain untested. Additional research is thus warranted. The urgency of further research on the jihadi narrative should be clear given that its central tenet –that Islam is under threat– is progressively becoming a prevalent belief. Results from polls conducted with Muslim Americans reveal a decreased conviction that American military interventions are intended to fight terrorism, from 67% in 2001 to 26% in 2007, while concurrently an increased belief that these military interventions are against Islam, from 18% in 2001 to 55% in 2007 (McCauley & Stellar, 2009). "Unless we can find ways to blunt the narrative of our terrorist foes," warns terrorism expert Brian Jenkins, "terrorism will drain our resources, drag on our economy, and yes, ultimately imperil our democracy" (Jenkins, cited in Gartenstein-Ross & Grossman, 2009).

Factor 2: SDO

SDO is a personality trait that has been consistently linked with intergroup conflict; however, the direction of the relationship between SDO and support for violence has been ambiguous. Low-SDO has been associated with challenges to the existing social hierarchy (Overbeck, Jost, Mosso, Flizik, 2004), while high-SDO has been linked with increased prejudice, nationalism and cultural elitism (Sidanius & Pratto, 1999).

Based on the only other existing research to have actually explored the specific relationship between SDO and terrorism (Levin et al., 2003), we hypothesized that low SDO would be associated with increased support for terrorism. In contrast, across three studies, we consistently found that *high* SDO was associated with support for aggression and terrorism.

These findings, which appear to contradict the results of Levin and his colleagues, led us to consider possible motivational distinctions between non-Westerners and Westerners to join the global jihad against the West. Arguably, the results found by Levin et al. (2003) are specific to a particular group and context, that of Lebanese Arabs and their relation to the West. Polls conducted in Arab countries, including Lebanon, reveal heightened distrust of America and its allies, believing that American interests in the region concerned domination and weakening of the Muslim world, rather than spreading peace, democracy, and human rights (Telhami, 2007). Given these views, Levin et al. (2003) have rightfully interpreted their sample's support for terrorism as an expression of "anti-dominance". From these findings one may hypothesize that citizens of Arab

and Muslim countries who sympathize with the global jihad might consider it a means to reduce the inequality between their own group, be it Lebanese, Arabs, or Muslims, and the outgroup, the West (see Henry, Sidanius, Levin, & Pratto, 2005; Sidanius, Henry, Pratto, & Levin, 2004).

Our research, conversely, has sought to explain *homegrown* jihadism; the particularity being that those involved are Western citizens. Thus, their relationship to the West differs from that of non-Western jihadists. For homegrown jihadists, the "West" is not an external entity with a relative status as it would be for non-Western jihadists. These different psychological relationships to the West might explain possible different motivations to attack the West. Jihadists in Muslim countries might be motivated to attack the West in order to reduce the status difference between Western and Muslim countries. Conversely, Western jihadists may be motivated to replace the social hierarchy with another social order. These different motivational patterns have been discerned among high- and low SDO disadvantaged group members who oppose the social system (e.g. Rabinowitz, 1999). Having different underlying motivations does not negate the fact that both types of jihadists are concerned with dominance, and both see the West as an obstacle to their desired global hierarchy. Yet both, we suspect, are attracted to jihadism for slightly different reasons.

Our findings linking high SDO to support for terrorism are, in fact, consistent with some more general research exploring SDO as a personality characteristic. For example, individuals who rate high on SDO are attracted to dominance-oriented careers, such as police officer, FBI agent, or business

executive (Sidanius, Pratto, Sinclair, & van Laar, 1996); a terrorist is conceivably striving for dominance as well. Furthermore, SDO has consistently been linked to prejudice, nationalism, patriotism, political conservatism, and cultural elitism (Pratto, Sidanius, Stallworth, and Malle, 1994, Pratto et al., 2000; Sidanius & Pratto, 1999), all of which can conceptually be linked to ideologies promoting violence.

The most compelling theoretical link between SDO and terrorism, however, is provided by Altemeyer (1998) who summarizes his many studies into the roots of social dominance as follows:

> "[Social dominators] not only believe some people were meant to dominate others, they personally want to do the dominating. Winning is the only thing for them. They want power and relish using it, to the point of being relatively ruthless, cold blooded, and vengeful. They enjoy making other people afraid of them, and worried about what they might do next. They would not mind being considered mean and pitiless. More than most people, they say they will destroy anyone who deliberately blocks their plans" (p.75).

The profile of terrorists.

From the perspective of terrorism studies, our findings regarding SDO cast doubt on a common assertion: that no psychological profile can distinguish individuals involved in terrorism. Prominent researchers in this field such as Kruglanski and Fishman (2009, p. 8) assert that "the vast majority of terrorists

neither suffer from mental disorders nor can be classified by a certain personality characteristic", while Horgan (2003, p. 16) states that "terrorists are not necessarily characterized by distinct personality traits".

To be clear, our findings do not invalidate these claims, as our studies did not include people directly involved in terrorism. Only future research will determine if high SDO truly does characterize homegrown terrorists. While our hypothesis about homegrown jihadists contradicts the prevailing wisdom, it must be noted that the prevailing wisdom also lacks empirical evidence. Indeed, the claims made by researchers such as Kruglanski and Fishman (2009) and Horgan (2003) cannot be traced to any empirical data, a fact I discuss in detail in Manuscript 3. Although popular, discounting the role of psychological characteristics in terrorism may have been a premature conclusion in the field of terrorism studies.

Conclusion

Other factors besides the two specified in our model might very well contribute to legitimizing the use of violence. Indeed, the terrorism literature is replete with speculation about many other psychological factors. The vast majority of these, however, have not been subjected to controlled empirical investigation (see King & Taylor, 2011). Given that the empirical testing described in the current article yielded the same pattern of findings across three studies and across two distinct populations, these two factors may be considered as a promising basis for future research on the psychology of terrorism.

ENDNOTES FOR MANUSCRIPT 2

1. This correction was necessary because the sphericity assumption was violated (Mauchly's $W = .707$, $p < .001$).
2. The author of the report, Paul Cruickshank, defined as "serious" all plots that were either successful or posed a capable threat of killing at least 10 people.

TRANSITION TO MANUSCRIPT 3

The research reported in Manuscript 2 provided empirical support, obtained across three studies and two different populations, for the two-factor model of homegrown terrorism. Situating the two-factor model among other attempts at explaining terrorism helped determine the subsequent phase of research undertaken in Manuscript 3.

As discussed in Manuscript 1, several other models of the psychological processes leading to terrorism have been proposed. These other models, however, are mostly theoretical and have no data to support them. This renders the two-factor model outlined in the present dissertation, to the extent of my knowledge, the only model anchored in empirical evidence. Of course, the evidence collected thus far, like any new findings, warrants further exploration and replication. In Manuscript 3, this replication was undertaken, yet it was done strategically, as it is one of the model's factors, not both, that is expected to be rather controversial.

The first factor in the model, the narrative of threat, is well-aligned with existing perspectives on terrorism. The jihadi narrative has already caught the attention of many experts, most of whom consider the narrative as somehow contributing to the radicalization of individuals who engage in homegrown terrorism. Through a survey study and two laboratory experiments, I have attempted to identify the psychological process by which this narrative leads people to respond to a threat, despite not tangibly experiencing this threat. The results indicate that threatening group members' collective pride might be the best way to garner support for conducting violence.

The second factor in the model, however, contradicts the greater part of terrorism-related literature in psychology. As mentioned in both Manuscript 1 and 2, personality-level variables have been dismissed by researchers studying the psychological factors leading to terrorism. This probably can be traced to the field's initial hypotheses about terrorists' personalities –which mostly concerned psychopathology– that were debunked. Since then, "normality" became the most common psychological attribute ascribed to those who engage in terrorism. Although "normality" was initially used to denote a lack of mental illness, the attribute has since been over-generalized, and seemingly led researchers to exclude the possibility that any personality characteristics might differentiate individuals who consider terrorism legitimate from those who do not. Evidence of this bias against personality characteristics can be seen across all the psychological models of terrorism reviewed in Manuscript 1, as no model includes a personality characteristic. Because of its contentiousness, the subsequent testing of our model undertaken in Manuscript 3 specifically targeted SDO, the personality characteristic proposed to be a predisposition for terrorism.

MANUSCRIPT 3

Personality Characteristics and Terrorism:

Considering Social Dominance Orientation

Introduction

> "*After decades of fruitless attempts, several leading scholars have concluded that the search for a terrorist personality is misguided and that personality traits may at most contribute to the decision to turn to terrorist violence.*"
>
> LaFree & Ackerman (2009, p. 349)

A paradox surrounds the purported link between personality traits and terrorism. Most psychologists have declared that those who engage in terrorism do not have a distinct personality profile. Moreover, they claim that this conclusion rests convincingly on empirical evidence, or more precisely, the lack of it. Yet, in terrorism studies, caveats similar to the one in the epigraph abound. Like LaFree and Ackerman, many speculate that certain personality traits "contribute to the decision to turn to terrorist violence". Moreover, a small but increasing number of studies has been conducted with the expressed purpose of identifying such personality traits. Thus, *officially*, the search for a "terrorist personality" has been terminated, but *unofficially*, the search continues.

The present article follows this unofficial line of research linking personality and terrorism. The guiding objective of this research is to explore whether personality traits can contribute to the identification of individuals who are more likely to engage in terrorism. The objective, of course, is not to reduce the multi-factorial phenomenon of terrorism to a single psychological dimension of personality. Rather, it is to re-assess the potential of personality psychology to

inform terrorism research, a potential that may have been too readily discounted in the past decade.

To assess the relevance of personality traits to terrorism, we focus on empirical research. The first half of the present article is devoted to reviewing most –if not all– published data about the personality characteristics of those who engage in terrorism. Following this, terrorism experts' assertions about personality are contrasted with the broader research about personality traits and their influence on behavior. In the second half of this article, two studies are conducted to empirically test the possibility of a link between personality traits and terrorism. To do this, the personality traits of students participating in large civil-war simulations were measured, with the goal of determining if individuals who preferred the role of terrorists could be differentiated from those who requested other roles. Based on our previous research (Manuscript 2), social dominance orientation was expected to characterize students who desired the role of terrorists. This article ends with a discussion about the utility of investigating personality traits within terrorism studies.

Personality

Personality refers to a collection of thoughts, feelings, and behaviours that vary among individuals. When these present in a distinguishable pattern, this pattern is referred to as a personality trait (Funder, 1997). Personality traits are thought to (a) be stable over time, (b) exhibit measurable differences among people, and (c) influence behaviour.

The field of psychology is replete with recognized personality traits. The five most researched of these are extraversion, agreeableness, conscientiousness, neuroticism, and openness to experience, commonly referred to as the "Big 5" (McCrae & Costa, 1987). Many other personality traits have also been well documented, such as the need for closure (Webster & Kruglanski, 1994), the belief in a just world (Lerner, 1980), social dominance orientation (Pratto, Sidanius, Stallworth, & Malle, 1994), and sensation-seeking (Arnett, 1994), to name but a few. For each recognized personality trait, a corresponding standardized questionnaire has been developed to measure individual differences.

In some cases, personality traits are dysfunctional and lead to diagnosable disorders, such as narcissistic personality disorder (American Psychiatric Association, 1994). The terrorism literature contains numerous discussions about personality disorders, generally refuting their presence in the psychological make-up of people who commit terrorism. Although such discussions are documented in the present literature review, an examination of the disordered spectrum of personality characteristics was not the focus of the current article. The objective, rather, was to explore "normal" personality traits and their relationship, if any, to terrorism. With this specific objective, the literature was reviewed searching for any discernible characteristic, attributed to individuals, and stable over time, that relates to terrorism.

Empirical Research in the Terrorism Literature

The basis for the literature review consisted of scholarly journals in the field of terrorism studies. This included all articles published in four major

terrorism journals between January 2000 (or later if the journal's inaugural issue was published after January 2000) and the journal's first issue of 2011. Table 9 identifies each journal's first issue included in the review, as well as the total number of articles reviewed. Table 9 also displays the number of "pertinent articles", which refers to articles that contain conclusive assertions –whether supporting or refuting– about the link between terrorism and personality. For each journal, additional details about the pertinent articles can be found in the appendices.

Table 9. *Basis of literature review*.

Journal	Start of Review Period			Articles Reviewed	Pertinent Articles	Appendix
	Year	Vol.	Issue			
Terrorism and Political Violence	2000	12	1	338	24	A
Studies in Conflict and Terrorism	2000	23	1	420	23	B
Perspectives on Terrorism	2007	1	1	95	11	C
Critical Studies on Terrorism	2008	1	1	88	18	D

Note: Review period ended with the first issue of 2011.

The search for empirical data was not limited to the articles published in these journals, but also included the works cited by authors. That is, when an assertion about terrorism and personality was found in an article, the evidence supporting that assertion was noted and assessed. This evidence could take many forms. In some cases, authors support their assertions with data they had collected. In most cases, however, authors support their assertions by referring to the works of other authors. These supporting articles, books, and reports were also

examined in search of data. This process continued until either the original data was found, or it was discovered that assertions were made without supporting evidence. For example, to support their assertion that "the vast majority of terrorists neither suffer from mental disorders nor can be classified by a certain personality characteristic", Kruglanski and Fishman (2009, p. 8) cite a chapter by Silke (2003b). Silke, in turn, does not present any evidence about personality characteristics in his chapter, but rather asserts that "terrorists are essentially 'ordinary' individuals" (p.30). In support of his assertion, Silke cites several studies, notably those of Lyons and Harbinson (1986), Morf (1970), and Rasch (1979). Among these three studies, only Rasch's article contains empirical data.

Terrorism Researchers' Three Conceptions of Personality

It quickly became apparent during the literature review that authors did not all refer to the same conception of "personality". For some researchers, personality corresponded to mental illness, such as narcissism, sociopathy, or psychosis. For other researchers, personality referred to demographics, such as age, marital status, and socio-economic status. And some researchers did discuss personality in its more conventional sense, that is, as a collection of discernable characteristics, attributed to individuals, that is stable over time.

Consequently, assertions about personality and terrorism had to be sorted according to these three different conceptions of personality. Next, empirical studies about terrorism and its relationship to each conception of personality are discussed. A more in-depth analysis, however, is accorded to empirical research pertaining to personality traits.

1. Mental illness.

Throughout the literature, more researchers refute, as oppose to endorse, the link between mental illness and terrorism. Although scarce, the published data do support this consensus. Direct psychiatric assessments of terrorists were found in only two studies (Lyons & Harbinson, 1986; Rasch, 1979), and in both cases, researchers did not report an atypical prevalence of mental illness. Biographical information collected by Sageman (2004, 2008a), Bakker (2006), and Gartenstein-Ross & Grossman (2009) also support the consensus.

In addition to these assessments, experts such as Horgan and Sageman have convincingly argued that mental illness may preclude someone's involvement in terrorism. First and foremost, mental illness would conceivably hinder an individual's ability to engage in the activities of, and cooperate with members within, a terrorist cell (Sageman, 2004, p. 81). For this reason, a terrorist cell would likely not accept individuals with mental illness (Horgan, 2003, p. 7). This argument, in addition to the small number of psychiatric assessments, renders the relationship between psychopathology and terrorism very unlikely. An exception, however, might be "lone-wolfs", a rather unique subset of terrorists who prepare and execute attacks independently. Case studies suggest that these individuals may be more likely to suffer from psychiatric disorders (see Spaaij, 2010).

2. Demographic information.

The majority of authors assert that certain demographic characteristics are associated with terrorism, and most studies containing empirical data support this

relationship. The demographic traits typical of those who engage in terrorism are: male, educated, and from middle to upper class backgrounds (e.g. Atran, 2003; Berrebi, 2003; Russell & Miller, 1977; Sageman, 2004, 2008a). Although this finding is quite robust across many studies, other researchers have found different demographic profiles or a lack thereof (e.g. Gartenstein-Ross & Grossman, 2009; Post, Sprinzak, & Denny, 2003; Weinberg, Pedahzur, & Canetti-Nisim, 2003). Additional research is needed to explore if other variables, such as geographical regions, might account for some researchers finding profiles while others do not.

3. Personality traits.

The literature contains many varied assertions about personality traits and terrorism, with slightly more than half of the works reviewed containing claims that terrorists have distinct personality traits. When the review is confined to research published by psychologists, however, the consensus is reversed: most of them claim that terrorists do not have a distinct profile. To more accurately determine the current state of knowledge, all empirical research about personality traits and terrorism is summarized next. Lamentably though, only three studies were found to involve direct assessments of personality traits (Gottschalk & Gottschalk, 2004; Merari et al., 2009; Schbley, 2003).

Schbley (2003)

Schbley sought to "construct an ethno-religious-specific and user-friendly psychosocial profile" of Hizbullah's suicide bombers (Schbley, 2003, p.108). To do this, a questionnaire was designed for Hizbullah members to rate their agreement with items concerning their religious duties, mentors, finances, politics,

education, their temper, and their attitudes about martyrdom. Schbley reports quite surprising findings, such as links between markers of psychopathology and the desire for martyrdom.[1] More pertinent to the current discussion, however, is her finding of a relationship between "absolutist tendencies" and an "affinity for martyrdom" (p.116). Careful reviewing of the questionnaire, unfortunately, reveals that this correlation between a personality trait and martyrdom may have been a statistical artifact.

As is common practice when conducting statistical analyses of questionnaires, variables of interest are computed by grouping the participants' responses to various items. To compute the variable *absolutist tendencies*, Schbley averaged participants' ratings on 11 items. Similarly, the variable *affinity for martyrdom* was computed from participants' ratings on 10 items.[2] For each variable to accurately represent different constructs, each variable should be computed from different sets of items. Upon examination, however, it was discovered that three items were used to compute both *absolutist tendencies* and *affinity for martyrdom*, making it inevitable for both variables to correlate. A crude analogy of this statistical *faux pas* would be to make two pies from the same pumpkin, and then be astonished that they both taste the same.

It thus remains unclear if absolutist tendencies can predict individuals' involvement in suicide bombings. Although this link remains possible, the statistical blunder invalidates Schbley's results from contributing to the empirical knowledge base about terrorism and personality traits.

Gottschalk & Gottschalk (2004)

Gottschalk & Gottschalk (2004) administered two personality measures to 90 individuals involved in either Palestinian or Jewish violent extremist groups. One measure was the MMPI-2, a well-established personality assessment tool. The second measure was the Pathological Hatred scale, a questionnaire developed by one of the authors, which upon examination, appears largely inspired by psycho-analytical theory. The Pathological Hatred scale borrows items from other scales used to measure authoritarianism, anti-humanism, and necrophilic attitudes. The authors report personality differences between their sample of 90 terrorists and a control group made up of 61 Palestinians and Israelis not involved in terrorism.

Compared to the control group, terrorists were found to present higher levels of psychopathic, depressive, and schizophrenic tendencies, as measured by the MMPI-2 subscales. Moreover, terrorists scored on "the extreme pole of the 'pathological hatred' scale" (p.42). According to Gottschalk & Gottschalk's findings, terrorists do have distinct personality traits. These traits, however, are reported as bordering on psychopathology.

Merari, Diamant, Bibi, Broshi, and Zakin (2009)

Merari and his colleagues (2009) conducted interviews with 41 Palestinian terrorists. Here, psychologists administered one standardized personality test, the CHPI, an adapted version of the California Personality Inventory. Three other tests, commonly referred to as "projective tests", were also administered: the

Rorschach test, the Thematic Apperception test, and the House-Tree-Person drawings.

Unfortunately, only nine people agreed to complete the CHPI. Due to the small number of participants, the authors chose to disregard the test results (a shame given the scarcity of data of this nature). Consequently, personality differences among the terrorists were based on the psychologists' semi-structured interviews, as well as the responses to the projective tests. Several differences were found regarding personality traits according to the individuals' terrorist role. Individuals who organized suicide attacks had more ego-strength, were more impulsive, and emotionally unstable than individuals who were destined to be suicide bombers, who were found to have avoidant and dependent personality styles.

Other works

Before concluding the present section, several other studies warrant discussion. These are studies frequently cited as having assessed the personality traits of terrorists, the most common being studies by Rasch (1979), Lyons and Harbinson (1986), Morf (1970), and Heskin (1980), as well as a study by the West German Ministry of the Interior conducted in the early 1980s. For example, in the chapter most often cited throughout our literature review, Horgan (2003) states that "one can identify evidence in support of the position that terrorists are not necessarily characterized by distinct personality traits" (p. 16). He then cites four of the five above-mentioned references in his ensuing discussion. These studies,

which many researchers consider as the evidentiary basis for the absence of "terrorist personality traits", are reviewed next.

Morf (1970) and Heskin (1980) provide detailed accounts of two terrorist organizations, the Front de Libération du Québec and the Irish Republican Army, respectively. While they each present intimate knowledge of the socio-political contexts contributing to terrorism in Canada and Ireland, their analyses about the personality traits leading to terrorism are speculative. Heskin claims that authoritarianism was a distinct trait among terrorists (1980, p. 84), whereby Morf refers to immaturity and idealism (1970, pp. 120, 121, and 147). Neither author mentions any data on which to base these conclusions.

Rasch (1979) reports having examined 11 individuals who were suspected of engaging in terrorism. Rasch does not mention his assessment method, but reports only one man had egoistical motivations for his terrorist acts. Rasch also mentions a study of 40 terrorists wanted by the German Federal police. He concludes that neither mental illness nor a pattern of demographic characteristics could be discerned in either sample. He does not mention personality traits.

Lyons and Harbinson (1986) report a study with 106 people who committed murder in Northern Ireland: 47 for political reasons (terrorism), and 59 for non-political reasons. A140-item questionnaire was administered to each murderer. Here, the authors do not mention or report any items relating to personality traits. Rather, their questionnaire gathered information about demographics, previous criminality, psychiatric illnesses, details about the victims, and the method of killing. Lyons and Harbinson, both psychiatrists who

assessed the murderers themselves, focus their discussion on the prevalence of mental illness and alcohol consumption, both of which were higher among the non-political murderers. The only finding remotely linked –if linked at all– to personality was that, compared to terrorists "the non-political murderers appear to come from a rather more unstable family background" (p. 195).

The final study in this group is one of the most comprehensive empirical studies of individuals involved in terrorism. This study was conducted by scientists from the West German Ministry of the Interior, who examined 227 members of the Red Army Faction (RAF) and 23 members of the 2nd of June Movement (see Post, 1990; von Stetten, 2009). Regrettably, the four-volume study could not be found in university libraries, so the findings discussed here are summarized from researchers who reportedly have read the study. Post (1990, p. 29) relates that Bollinger –one of the researchers assigned to the study– found most RAF members to be characterized by narcissistic wounds. According to Crenshaw (1986, p. 386), Süllwold –another researcher assigned to the study– uncovered several distinctive personality traits among RAF members. Taylor (1988, p. 145) corroborates this, and identifies the personality traits as extraversion and neurotic hostility. It is unclear, however, exactly how these personality traits were assessed. It is very possible that these findings were not the result of direct assessments, but rather speculation based on readily available biographical information. This hunch is based on the title of Süllwold's (1981) chapter, which reads *Psychological aspects of biographical data* (Psychologische

Aspekte biographischer Daten). Given the potentially valuable psychological data contained in this study, it warrants closer examination in future research.

Empirical Data and Personality Traits

In sum, three separate studies were found where the personality traits of individuals involved in terrorism were assessed. In one of these studies (i.e. Schbley, 2003), the results might be attributable to statistical curmudgeing. Of the remaining two, only one study included a control group to compare findings against the personality traits of individuals not involved in terrorism. According to this one study (i.e. Gottschalk & Gottschalk, 2004), terrorists reported higher levels of psychopathic, depressive, and schizophrenic tendencies. Thus, if one abides by the empirical standards set in the field of personality psychology, the existing data regarding the link between terrorism and personality traits consist of one sample of 90 individuals subjected to the MMPI-2. Although the findings from this one and only sample suggest that individuals who engage in terrorism have a distinct psychological profile, this profile more closely relates to mental illness than to personality.

Clearly, one study is not enough to draw a decisive conclusion about the relationship between personality traits and terrorism. What can be concluded from reviewing the literature, however, is that no empirical study has reported an absence of discernable personality traits among terrorists. More fundamentally, though, this review highlights that the vast majority of recognized personality traits have simply not been measured among individuals who engage in terrorism.

Given that the link between personality traits and terrorism has not been extensively researched, there is a possibility that such a link exists. Before hypothesizing which personality trait might predispose an individual towards engaging in intergroup violence such as terrorism, let us first consider whether a link between personality traits and terrorism is even logically sustainable.

Personality traits predispose people to seek out situations that are consistent with their traits, while in turn avoiding other situations that are inconsistent with their traits. Of course, external factors unrelated to personality, such as social influence, economic reality, and other situational constraints will also influence an individual's behaviour in a situation. Yet, holding all external factors constant, certain personality traits increase the likelihood that an individual will choose to expose themselves to personality-compatible situations. Consider sensation seeking, an established personality trait. Sensation seekers will be more likely to apply for a law-enforcement job, for example, and less likely to apply for work as a librarian. Hence, the sensation seeker who applies for a law enforcement job will be more likely to experience dangerous situations. This reasoning might also apply to terrorism. Particular personality traits should increase an individual's likelihood to engage in subversive activities, which in turn, increases the likelihood of engaging in terrorism. Conversely, certain personality traits should decrease this likelihood. Support for this reasoning can be found throughout the field of personality psychology, discussed next.

Personality psychology and behavior.

Researchers in psychology generally agree that both the person (e.g. personality) and the situation (e.g. external factors) must be considered when predicting and understanding behaviour. Although historically, psychological research was framed as pitting the "person" against the "situation", this has shifted. Most psychologists have since moved beyond this dichotomy and now present an integrated account of behaviour, where both personality and situational variables interact (Webster, 2009).

As a result, it is now widely accepted that personality traits influence an individual's actions. A personality trait is not thought to directly predict a specific behaviour, rather a personality trait is viewed as a predisposition to perform a certain category of behaviours (Ajzen & Fishben, 1980). Consider the five most researched personality traits of extraversion, agreeableness, conscientiousness, neuroticism, and openness to experience (McCrae & Costa, 1987). Several robust patterns have emerged from the vast research connecting these traits to behavioral categories. People who rate high on openness to experience, for example, are more likely to engage in artistic behaviour (Larson, Rottinghaus, & Borgen, 2002). Low conscientiousness, on the other hand, has been consistently linked to criminality and antisocial behaviour (Ozer & Benet-Martinez, 2006). Some personality psychologists claim that behavioral categories are not only predicted by personality traits, but rather each is one side of the same coin: behavioral interests *are* expressions of personality (Holland, 1997). Based on this

recognition, individuals who engage in terrorist activities might plausibly have different personality traits than individuals who do not engage in terrorism.

Personality psychology and terrorism.

Clearly, research on the personality of those who engage in terrorism is warranted. This, of course, is easier said than done. Few terrorists are readily available to complete personality inventories. Despite the obvious challenges posed by terrorism research, first-hand personality assessments of individuals who are involved in extremist violence must be undertaken, and these assessments must contrasted with those from valid comparison groups.

This first-hand research can –and should– be complemented with other research strategies, such as conflict simulations, that allow for testing hypotheses that would otherwise be unverifiable in a real-world setting. For example, to effectively test if personality traits predispose individuals to engage in terrorism, people's personality characteristics would ideally be obtained before they encountered the possibility to engage in violence. That is, individuals' personality characteristics would be measured before they adopted the "role" of a terrorist, so as to ensure that it is indeed personality that influences the choice of terrorism rather than acts of terrorism modifying one's personality. Furthermore, in this ideal research scenario, not only would psychological measurements precede terrorism involvement, but additionally these characteristics would be compared to those who choose another "role". Conducting this research in a real-world setting would entail a longitudinal study where thousands of participants are followed for years, waiting for enough participants to engage in terrorism so as to

allow for statistically sound comparisons. Clearly, in a real-world setting, this study would require unfathomable time and resources. In a simulated world, however, such a study becomes feasible. And fortunately, a simulated world was available where this form of study could be conducted.

The Present Research

Each year, a large-scale civil war is simulated in the political science department at McGill University. The simulation is part of a combined undergraduate and graduate course on peace building, and typically involves 80 upper-level undergraduates, and another 10 to 20 other undergraduates in supporting roles, all engaged in intensive role playing for seven days, 12 hours a day. During the simulation, students enact a broad variety of actors that would be recognized in most civil-wars, such as local government, neighboring countries, international organizations, aid agencies, media, and most pertinent for the present research, insurgents and terrorist (see Brynen, 2010). In the context of this simulation, we investigated if social dominance orientation (SDO) might predict who, prior to the simulation, requests the role of terrorist.

The basis for this hypothesis follows from our previous research, described in Manuscript 2, where SDO consistently emerged as a trait that characterized individuals who legitimized the use of terrorism. In addition to these findings, there exists important theoretical links between SDO and intergroup violence. Next, we describe these theoretical and empirical justifications for our hypothesis.

Social Dominance Orientation

Social dominance orientation (SDO) is a well-established personality characteristic commonly measured in psychological research on intergroup relations. As a personality trait, SDO denotes an individual's tendency to value status and hierarchy while devaluing egalitarianism (Sidanius & Pratto, 1999). A person who rates high on SDO would thus cherish group dominance, status, power, and superiority, and would agree that "some groups of people are simply inferior to other groups" (Pratto & al, 1994).

Although no research has, as yet, specifically measured levels of SDO among individuals involved in terrorism, a variety of research findings suggest that SDO might be relevant to understanding the psychology of extremist violence. Most important among this research are the robust correlations found between SDO and a host of attitudes often linked, theoretically, to intergroup violence and terrorism, such as prejudice, nationalism, patriotism, political conservatism, and cultural elitism (Pratto, Sidanius, Stallworth, and Malle, 1994, Pratto et al., 2000; Sidanius & Pratto, 1999). Moreover, the importance of dominance has been noticed to pervade the literature produced by terrorists. Before conducting an attack, the theme of dominance is more present in the documents issued by terrorist groups as compared to documents by ideologically similar groups who did not engage in violence (Smith, 2004). Seemingly, dominance and attitudes related to dominance can be theoretically linked to terrorism.

The most compelling evidence linking SDO to terrorism, however, was discovered through our previous research, described in Manuscript 2. In a series of three separate studies across two different populations, SDO consistently distinguished individuals who supported violence and terrorism. In the first study in this series, a survey conducted with Canadian Muslims revealed that individuals who were higher on SDO reported more aggressive action tendencies towards non-Muslim Canadians. The two other studies were carried out in the laboratory, and yielded similar findings. Here, Jewish students were deceived into thinking that Jewish men had either truly planned, or successfully carried out, acts of terrorism. Students who were high on SDO appraised these terrorist plans and acts more positively than students low on SDO.

Not all research supports our contention that higher SDO may predispose individuals to become involved in terrorism. In the only other study found to examine the relationship between SDO and terrorism, which was a survey study conducted in Lebanon, *lower* SDO was associated with stronger support for terrorist attacks against the West (Levin, Henry, Pratto, & Sidanius, 2003). To be precise, these findings involved a mediation, whereby less SDO was associated with higher Arab identification, and higher Arab identification predicted greater support for terrorism against the West. While these findings do contradict the specific results we obtained in Manuscript 2, they nonetheless support the broader notion that SDO sets apart individuals who are more likely to support –or engage in– terrorist violence.

Although the exact relationship between SDO and support for violence remains unclear, there is enough evidence to confidently hypothesize that SDO would distinguish individuals who are more likely to be involved in terrorism. This hypothesis was tested twice, in Simulations 1 and 2 described next. Testing this hypothesis was possible due to one crucial feature of the civil-war simulation: the roles are self-selected. That is, weeks before the simulation, students inform the coordinator of their top three desired simulation roles, and most students are awarded their first choice. Because roles were self-selected, it was possible to test if SDO, alongside other personality characteristics for comparison, could predict who preferred the role of terrorist.

Civil-War Simulation

The civil-war simulation is set in a fictitious country and continent, but located in the real world. The fictitious elements render participants less likely to feel constrained by historical precedent, while the real-world contextual setting offers reasonable constraints.

The focus of the simulation is the war-torn country of "Brynania," where a long-standing civil war pits an authoritarian military regime (dominated by the majority Brn ethnic group) against a separatist Zaharian insurgency in the south (led by the Popular Front for the Liberation of Zaharia, and the smaller, more radical Zaharian People's Front). The Zaharians have blockaded the country's major port of Mcgilldishu. The northern Brn warlords of the Free People's Army, who defy government authority and control the northern diamond-producing region of the country, pose a further challenge. To the west, there is also some

unrest among the small Icasian ethnic minority. The civil war in Brynania thus most closely resembles civil wars in Central or West Africa, with a weak central government, ethnic tensions, and a multiplicity of armed groups, warlordism, and lootable resources (see Brynen, 2010).

Brynania is one of six countries that occupy the continent of Cyberia. To the west, it is bordered by Icasia, a large, corruption plagued failing state (based loosely on Mobutu's Zaire). To the east it is bordered by powerful Ruritania, an authoritarian regime that has offered military support to the Brynanian government (based loosely on Syria). The remaining countries of the region comprise Concordia (a small and stable pro-Western democracy), Uqamistan (a poor, radical regime), and Udem (an impoverished country hosting a large French military base).

The initial military and political situation is designed to be a hurting stalemate (Zartman 1995, p. 18), with no one actor able to secure outright victory on the battlefield. At the start of the simulation, an informal ceasefire is in effect, which the international community hopes can be transformed into a formal peace agreement.

The simulation lasts seven days of real time, corresponding to seven months of simulation time. Each day thus represents a month in Brynania, and by convention each hour of real time corresponds to one day. This time period allows the simulation to cover—should the ceasefire hold—such elements as humanitarian assistance operations, peace negotiations, preliminary deployment

of any peacekeepers, formation of a transitional government, refugee repatriation, and the shift to longer-term development programming.

Simulation roles.

Students represent a broad variety of actors in the simulation. In addition to the six countries of Cyberia, all five permanent members of the UN Security Council (U.S., Russia, China, UK, and France) are represented, as are Canada, Norway, a few additional European countries (usually those holding the European Union presidency that year), and a few major developing countries, usually major UN-troop contributors or current members of the Security Council. Each of these countries is assigned two to five students, typically representing the foreign and defense ministries, the national aid agency, and other relevant actors (such as the UN ambassador or U.S. National Security Council). In addition to a special representative of the secretary general for the conflict in Brynania, the UN system is also represented by teams for the Department of Political Affairs, the Department of Peacekeeping Operations, the Office for the Coordination of Humanitarian Affairs, United Nations High Commissioner for Refugees (UNHCR), United Nations Children's Fund (UNICEF), United Nations Development Programme (UNDP), World Food Programme (WFP), and the Office of the UN High Commissioner for Human Rights. The World Bank is also represented. Non-governmental organizations typically include the International Committee of the Red Cross, Médecins Sans Frontières, CARE, Oxfam, and Amnesty International.

Finally, a host of local actors are represented, such as various members of the Brynanian government, local media (local pro-government and independent radio stations, modeled on Rwanda's notorious Radio Télévision Libre des Mille Collines and Serbia's Radio B92 respectively), a local human rights group, a pro-government paramilitary movement, a pro-Zaharian aid group, and a national trade union. Most pertinent to the present research, however, is that students enact various insurgent and terrorist groups, such as the Popular Front for the Liberation of Zaharia, the Zaharian People's Front, and the Free People's Army.

Role selection.

After being briefed about the simulation, its rules, and the various actors it contains, students are asked to submit a ranked list of their top three role preferences several weeks before the simulation. The simulation coordinator makes every effort to accommodate these preferences. Consequently, the majority of students are awarded their preferred role.

Clearly, the level of involvement required for this simulation surpasses what is required of participants in traditional laboratory-based psychological studies. This renders the simulation a unique platform for conflict related research. Because students commit to a specific role for 12 hours a day, for 7 days, it is safe to assume that each student chooses their role carefully. Taking advantage of this careful self-selection, we investigated if personality traits might predict students' simulation role. Our first attempt at testing our hypothesis is described next, in Simulation 1.

Simulation 1

Method

Participants.

Several weeks before the simulation, a short presentation soliciting participation was given in class to students enrolled in the political science peace-building course. During this presentation, the objectives of the research were kept vague for fear that familiarity with these objectives might bias participants' responses. Of the 92 students enrolled in the course, 78 chose to participate. This sample consisted of 34 men and 44 women aged 19 to 29 (M = 21.3 years of age). For each survey completed, $5 was added to a fund that students could use to purchase beverages at the customary celebration held after the simulation.

Questionnaire.

Participants were requested to complete an online questionnaire at least one week before the start of the simulation. This online questionnaire comprised six psychological scales. First was the Arnett inventory of sensation seeking (Arnett, 1994), which involves 20 statements depicting the self in exciting and novel situations. Participants rated each statement using a 4-point scale where 1 corresponded to "does not describe me at all" and 4 corresponds to "describes me very well".

Second was the global belief in a just world scale (Lipkus, 1991), used to measure the extent to which an individual believes that the world is a fair place where people get what they deserve. This scale consists of seven statements about fairness and justice, such as "I feel that people get what they are entitled to have".

Participants were asked to indicate how each statement aligns with their own beliefs using a 6-point scale where 1 corresponded to "strongly disagree" and 6 corresponded to "strongly agree".

Third was the social dominance orientation scale (Pratto, Sidanius, Stallworth, & Malle, 1994), consisting of 16 items, which is used to measure an individual's tendency to value status and hierarchy, while devaluing egalitarianism (Sidanius & Pratto, 1999). Participants indicated their agreement with statements such as "some groups of people are simply inferior to other groups" using a 7-point scale where 1 corresponded to "strongly disagree" and 7 corresponded to "strongly agree".

Fourth was the need for closure scale (Kruglanski, Webster, & Klem, 1993). With 42 items, this scale is used to assess individuals' preference for closure (e.g., "I'd rather know bad news than stay in a state of uncertainty"), as well as their desire to avoid closure (e.g., "I tend to put off making important decisions until the last possible moment"). Participants indicated their agreement with each statement using a 6-point scale where 1 corresponded to "strongly disagree" and 6 corresponds to "strongly agree".

Fifth was the *violence in war* subscale of the Velicer attitudes toward violence scale (Anderson, Benjamin Jr, Wood, & Bonacci, 2006), which consists of 12 statements describing favourable attitudes towards war and intergroup conflict, such as "War can be just" and "A violent revolution can be perfectly right". Participants indicated their agreement with each statement using a 7-point

scale where 1 corresponded to “strongly disagree” and 7 corresponds to “strongly agree”.

Sixth was the moral disengagement scale (McAlister, 2001), which is comprised of 15 statements describing specific conditions regarding the use of military force. For each condition (e.g. “damage is limited to military targets”, “use of force may prevent more suffering than it causes”), participants indicate if military force should be used, using a 5-point scale ranging from “Yes” (1) to “Not Sure” (3), to “No” (5).

The final question required participants to indicate the specific role they were to enact during the simulation.

Results and Discussion

Table 10 presents the means, standard deviations, and reliability measures for each scale in the questionnaire. On average, participants rated themselves as having modest beliefs in a just world, and tended to be low on social dominance orientation. On the four other scales, participants rated themselves, on average, higher than the mid-point. The relationships between variables yield preliminary support for the possibility that a personality characteristic may be linked to intergroup violence: attitudes towards violence was found to correlate with SDO. More precisely, participants who rated themselves as more socially dominant also reported more favorable attitudes towards violence. Attitudes towards violence was also found to correlate with moral disengagement, yet this was not technically a personality characteristic.

Table 10. *Summary of inter-correlations, reliability, uncentered means, and standard deviations for Simulation 1.*

	1	2	3	4	5	6
1. AISS	–	-.08	.02	-.26*	.20	-.10
2. Belief in a just world		–	.17	.27*	-.05	-.19
3. SDO			–	.15	.45***	-.18
4. Need for closure				–	-.01	-.11
5. Attitudes towards violence					–	-.50***
6. Moral disengagement						–
items	20	7	16	42	12	15
M	2.76/4	2.75/6	2.08/7	3.43/6	3.27/7	2.75/5
SD	0.32	0.96	0.79	0.50	1.14	0.68
alpha	.61	.89	.89	.85	.88	.88

Note: $N = 78$; * $p < .05$; *** $p < .001$.

The personality ratings of participants who enacted insurgents and terrorists ($N = 9$) were compared to the personality ratings of participants who enacted other roles ($N = 69$). To facilitate the comparison between personality measures, all scores were standardized using z-scores. Figure 5 summarizes the comparison of insurgents-terrorists and other roles across all six scales.

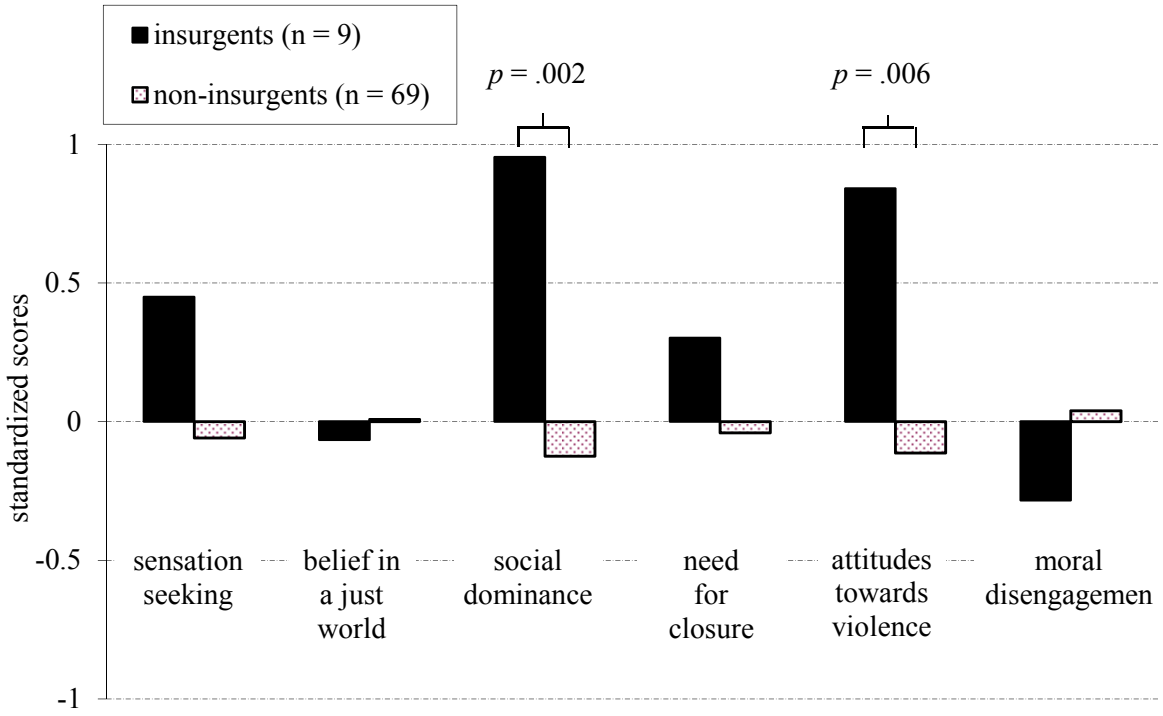

Figure 5. Standardized scores of psychological scales for insurgent-terrorist roles as compared to other roles.

Two psychological measures distinguished participants' choice of simulation role. Compared to other roles, people who enacted insurgents and terrorists scored significantly higher on the attitudes towards violence scale, $t(76) = 2.81$, $p = .006$, $d = 0.64$, 95% CI [0.31, 1.86], and the social dominance orientation scale, $t(76) = 3.22$, $p = .002$, $d = 0.74$, 95% CI [0.32, 1.37]. Comparisons between other types of roles did not yield significant differences. For example, the scores of participants involved in humanitarian and aid groups did not significantly differ from scores for the remaining sample, once insurgents and terrorists where excluded.

The differences between students who chose terrorist-insurgent roles and those who chose other roles support our hypothesis. These initial findings suggest that different personality characteristics may predispose individuals to engage in different behavioral categories; specifically, some personality traits might increase the probability that one might engage in extremist violence.

In Simulation 1, participants' level of SDO predicted their simulation role. Although this link was significant, one detail may cast doubt on these results. This detail resides in the role-selection process that occurs before the simulation. As stated, role selection involves students indicating their top three choices. Although most students are awarded their first choice, not everyone is. Thus, those who enact terrorists and insurgents during the simulation represent the greater part of – but not exactly *all*– the students who want these roles. To more accurately test if SDO predicts role selection, the better comparison would be between students who request insurgent-terrorist roles and students who request other roles, regardless of the roles awarded by the simulation coordinator. This minor change was implemented for Simulation 2, conducted with students who participated in a similar simulation that took place the following academic year.

Simulation 2

Method

Two weeks before the simulation began, 67 undergraduate students who were to take part in the simulation were asked to complete a questionnaire comprised of six psychological scales. All scales were identical to those used in Simulation 1, with one replacement. The TIPI, a brief measure of the Big Five

personality dimensions (Gosling, Rentfrow, and Swann, 2003), was added to explore potential differences across the most established personality traits. Conversely, the moral disengagement scale was removed, as it was deemed too similar to another scale already included in the questionnaire, the Velicer attitudes toward violence scale. Lastly, the final question was modified so as to require participants to indicate the role they *preferred* to enact during the simulation, and not the role they necessarily were awarded.

Results and discussion

Table 11. *Summary of inter-correlations, reliability, uncentered means, and standard deviations for Simulation 2.*

	1	2	3	4	5	6
1. AISS	–	.14	.17	-.50*	.07	.32*
2. Belief in a just world		–	.20	.14	.19	-.04
3. SDO			–	.05	.61*	-.02
4. Need for closure				–	.19	-.37*
5. Attitudes towards violence					–	-.02
6. Emotional stability						–
items	20	7	16	42	12	2
M	4.60	2.79	2.00	3.76	3.13	4.56
SD	0.64	0.96	0.82	0.69	1.02	1.44
alpha	.70	.87	.90	.90	88	N/A[3]

Note: $N = 67$; * $p < .001$.

Table 11 presents the descriptive statistics and correlation matrix for all scales used in the questionnaire. The two psychological measures that distinguished participants who enacted insurgents and terrorists in Simulation 1 were also found in Simulation 2. Compared to other roles, participants who

requested insurgent-terrorist roles expressed significantly more favorable attitudes towards violence, $t(61) = 3.25$, $p = .002$, $d = 0.83$, 95% CI [0.34, 1.41], and higher scores on the SDO scale, $t(61) = 2.19$, $p = .033$, $d = 0.56$, 95% CI [0.04, 0.88]. Again, these two personality characteristics were positively correlated ($r = .61$, $p < .001$). An additional finding emerged regarding one of the Big Five personality dimensions. Students who preferred insurgent-terrorist roles scored significantly lower on emotional stability than students who requested other roles, $t(61) = 2.12$, $p = .038$, $d = 0.54$, 95% CI [0.05, 1.69]. These results are presented in Figure 6.

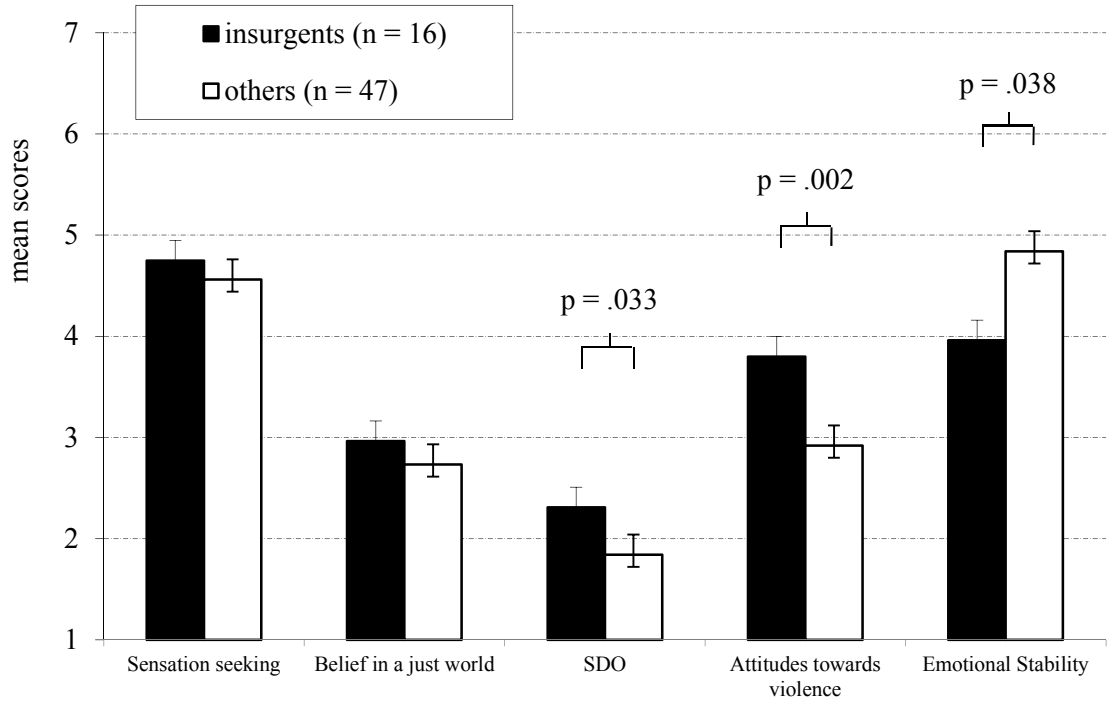

Figure 6. Mean scores of psychological scales for participants who preferred insurgent-terrorist roles ($N = 16$) as compared to other preferred roles ($N = 47$).

Conclusion

The objective of the current article was to explore the possibility of using personality traits as a potential factor to identify individuals who are more likely to engage in terrorism. As personality traits predispose individuals to seek out situations that are consistent with their traits, the people who choose to engage in terrorism might indeed have discernible personality traits. This contention is consistent with research findings in personality psychology.

Many terrorism researchers, however, have officially concluded that a "terrorist personality" does not exist (Horgan, 2003; Kruglanski & Fishman, 2009). Yet, as the literature reviewed in the first-half of the present article reveals, there exists scant empirical evidence to support this conclusion. Very few empirical studies involve the direct measurements of personality traits with individuals involved in terrorism, and the few studies we have found contradict the prevailing notion that personality and terrorism cannot be linked.

To bolster the theoretical possibility that certain personality traits might indeed differentiate individuals who get involved with terrorism, we conducted two simple studies. Capitalizing on an annual large-scale civil-war simulation, participants were asked to complete a questionnaire containing personality measures to determine if psychological characteristics could predict role selection in the simulation. For two consecutive years, students who requested to enact terrorists and insurgents rated significantly higher on SDO than students requesting other roles.

These results are consistent with our previous research reported in Manuscript 2, where higher SDO distinguished individuals who considered violence and terrorism more positively. In the context of these studies, the findings from the present manuscript provide additional evidence that social dominance is a promising research topic for understanding the psychology leading to terrorism. While it is tempting here to remain focused on SDO, the remainder of this discussion will instead shift to the broader implications of these results, and return to the main objective of this article: to re-assess the potential of personality psychology to inform terrorism research.

We thus conclude, based on the existing empirical data found in the literature and the results of our two studies, that personality psychology might holds unexploited contributions to our understanding of terrorism. While SDO has emerged throughout our research as warranting further investigation, many other personality traits have yet to be researched in relation to extremism and terrorism. Future research is thus warranted. Should such research yield a link between personality traits and terrorism, we foresee three potential consequences.

First, personality traits may help to address the "specificity problem", a shortcoming which has plagued most psychological explanations of terrorism (Horgan, 2005, p. 74, Sageman, 2004 p. 99; Taylor, 1988, p. 145). The specificity problem refers to the weak predictive power of many psychological factors theorized as leading to terrorism. Many of these factors, such as relative deprivation, discrimination, and identity crises, are hypothesized as radicalizing factors that compel individuals to engage in terrorism (Manuscript 1). Many

people who do not radicalize, however, also experience these psychological factors. In other words, the people who experience relative deprivation, discrimination, or identity crises and do not engage in terrorism vastly outnumber the people who do engage in terrorism. While this lack of specificity does not necessarily invalidate the importance of these factors, it is clear that more is needed to better delineate who might engage –or not– in terrorism. Combining personality traits with these other psychological factors may increase the predictive power of psychological theories of terrorism.

Second, exploring personality traits might also yield broader theoretical benefits. Within the field of terrorism studies, researchers have proposed various models depicting the psychological processes leading to terrorism. Across these models, most theorizing emphasizes situational factors as the primary –and in most cases the exclusive– psychological drivers. Reducing the complex phenomenon of terrorism to solely external, social dimensions of psychology is unrealistic, just as reducing terrorism to merely internal dimensions of psychology was unrealistic 40 years ago when psychodynamic explanations reigned. It appears as if there is currently a bias towards social factors across psychological explanations of terrorism, perhaps as a backlash to the former bias favoring personality. If such is the case, then the research pendulum should swing back toward the midpoint, where personality traits and social factors are both considered. Such a shift in theorizing would indeed be a welcome theoretical advancement for terrorism studies, and more likely to represent the psychological complexity necessary to predict how individuals become involved in terrorism. As

the entire discipline of psychology now recognizes the importance of both the person and the situation when predicting any behaviour, terrorism research cannot continue to ignore half of this equation.

Third, if found to be pertinent to terrorism, personality traits could eventually be exploited for applied purposes. Security services could use indirect measures of personality characteristics to distinguish who, during an investigation, poses a greater threat. For example, in a situation where many "people of interest" are identified and resources for surveillance are finite, a security service may need to somehow prioritize who is assigned surveillance. Although criteria undoubtedly already exist for assessing risk, personality psychology may be well positioned to contribute additional criteria. If sensation-seeking were found to be a prominent personality trait among individuals involved in terrorism, as suggested by some experts (Atran, 2008; Bartlett, Birdwell, & King, 2010; Silke, 2008; Stern, 2006), indirect measures of sensation-seeking may be used to assign surveillance priority. Indirect measures might involve ascertaining the hobbies of individuals. Thus, if a subgroup of "people of interest" were to regularly engage in typical sensation-seeking behaviour, such as gambling for example, this subgroup might be considered for priority surveillance.

To conclude, claims about the nonexistence of a "terrorist personality" are seemingly unfounded. For terrorism, as for many other behaviors, both situational and dispositional factors are likely to influence a person's decision to act. Thus, the possibility of a relationship between personality traits and terrorism remains,

and future research is warranted. Should psychologists' prevailing assumptions about the "terrorist profile" be incorrect, important theoretical and applied advances in our understanding of the psychology of terrorism might lie ahead.

ENDNOTES FOR MANUSCRIPT 3

1. Schbley (2003, p. 114 and 116) reports "strong statistical relationships between some self-reported criteria of intermittent explosive, psychotic, and oppositional personality disorders and a person's absolutist tendency, affinity for martyrdom, susceptibility to the culting process, psychotic depression, and acts of terrorism and self-immolation".
2. Schbley does not specify if the variables are computed by averaging across ratings or creating a sum of the ratings. This nuance, however, does not impact the statistical error committed.
3. Each of the "Big-5" personality traits assessed by TIPI is measured using two items. Gosling, Rentfrow, and Swann (2003) thus suggest disregarding the reliability estimates of the TIPI subscales because of the "low inter-item correlations in conjunction with the fact that the TIPI scales have only two items results in some unusually low internal consistency estimates" (p.516). Reportedly, they emphasized content validity over reliability when building the TIPI.

GENERAL DISCUSSION

The organization known as Al Qaeda has withered. Not only has its figurehead Osama bin Laden been killed, but more than 80% of its members have been eliminated since the invasion of Afghanistan (Wright, 2006). Many of the remaining members have fled the region, and its top leadership has gone into hiding, most likely in Pakistan's North West Frontier Province (Bergen, 2009). Its training facilities, which were previously considered the jihadi epicenter of theological and para-military training, have been destroyed (Lia, 2008b). Yet despite all these setbacks, Al Qaeda has spawned a worldwide movement.

As the hunt for jihadists intensified after 9/11, most homegrown jihadi cells in Europe developed and operated independently from Al Qaeda's central leadership (Ministry of the Interior and Kingdom Relations, 2006). Indeed, compared to previous cohorts, jihadists active between 2004 and 2008 have trained abroad less, fought jihad abroad less, and had less attachments to international organizations (Crone & Harrow, 2010). Specifically, of the most serious terrorism plots between 2004 and 2009 in the West, 57% were autonomous, without direction from established foreign jihadi organizations (Cruickshank, 2010).

It is unclear if Al Qaeda will be able to survive the continuous, unrelenting pressure from Western militaries. What is clear, however, is that Al Qaeda now serves mostly an inspirational –rather than operational– role in terrorism plots. From afar, using words disseminated through the Internet, with the occasional video-montage and garish magazine, Al Qaeda currently succeeds at inspiring

individuals to attack the West. The program of research presented in the present dissertation was an attempt to identify the reasons why this messaging campaign has been so successful, and who is most likely to espouse the violence it promotes.

Summary of the Research Findings

In Manuscript 1, I summarized the current state of knowledge concerning the psychological factors leading to terrorism. In doing so, I reviewed five major theories of radicalization. The discrepancies and commonalities among these models were analyzed in the context of empirical evidence in the fields of terrorism studies and social psychology.

This literature review revealed a disquieting lack of empirical research on radicalization. This lack of empiricism prevents researchers from identifying which factors, among the many theorized, are truly involved in radicalization. Moreover, this lack of empirical research prevents the field of psychology from adequately informing counter-terrorism strategies.

Nonetheless, several themes were identified in Manuscript 1 as promising avenues of future research concerning the radicalization of homegrown jihadists. Of these themes, two formed the basis for the research described in Manuscripts 2 and 3. One theme concerned the "threat against Islam", a threat that figures centrally in the narrative promoted by jihadists worldwide. The second theme, conspicuously absent from most models of radicalization, was the role of personality characteristics.

These two themes formed the basis of the two-factor model of homegrown terrorism, a novel theory of radicalization presented in Manuscript 2. Each theme was analyzed through the lens of a relevant, well-established theory of intergroup conflict in order to derive the specific psychological factor thought to be at the root of radicalization. Social identity theory (Tajfel & Turner, 1979) was used to deconstruct the jihadi narrative, which resulted in the hypothesis that the threat to Islam was interpreted, on an individual level, as a threat to collective pride. Social dominance theory (Sidanius & Pratto, 1999) was used to exact which personality characteristic might distinguish individuals who are more likely to support the use of violence. Low SDO was hypothesized as this characteristic. Thus, an influential message interpreted as a threat to collective pride, together with low SDO, were theorized as psychological factors contributing to the legitimization of terrorism.

The initial test of the two-factor model consisted of a survey conducted with Canadian Muslims. Results supported one factor in the model but not the other. Respondents who perceived a greater threat to Islam reported more aggressive action tendencies towards non-Muslim Canadians. This relationship, as hypothesized, was mediated by collective pride. Specifically, respondents who perceived a greater threat to Islam reported less collective pride, which in turn lead to more aggressive action tendencies towards non-Muslim Canadians. This mediation offered preliminary support for the first factor in the model.

Survey results, however, did not yield support for the second factor in the model. Rather than low SDO predicting aggressive action tendencies as initially

hypothesized, it was higher levels of SDO that predicted more aggressive action tendencies towards non-Muslim Canadians. This opposite finding raised the possibility that the two-factor model may need to be revised.

A similar pattern of results was found across the two other studies reported in Manuscript 2. Here, two laboratory experiments deceived participants into thinking that group members had either truly planned, or successfully carried out, acts of terrorism. When this violence was presented as a response against a threat to group pride, strongly identified group members viewed terrorism more positively. Moreover, during these experiments, higher levels of SDO were associated with more positive appraisals of terrorism. These results confirmed the need to revise the model, and consider high SDO as the personality factor in the two-factor model of homegrown terrorism. Rather than resisting dominance, as some previous research has framed the link between SDO and terrorism, my research suggests that it is the pursuit of dominance that underlies homegrown terrorism.

Manuscript 3 comprised of a thorough review of published data concerning personality traits and terrorism, followed by additional testing of the link between high SDO and terrorism. This additional scrutiny regarding the personality factor of my model was undertaken because my findings contradict the greater part of terrorism-related literature in psychology. Indeed, most researchers studying the psychological factors leading to terrorism have dismissed the role of personality-level variables in the radicalization process. My review of all published data on this topic, however, failed to reveal any empirical support

for this conclusion. Moreover, testing yielded additional support for the relationship between high SDO and terrorism. Capitalizing on an annual large-scale civil-war simulation, I investigated if participants' personality characteristics predicted their selection of simulation role. For two consecutive years, students who requested to enact terrorists and insurgents rated significantly higher on SDO than students requesting other roles.

Implications: Collective Pride, Social Dominance Orientation and Terrorism

Overall, my doctoral research explored a two-factor model of radicalization. The first factor, a narrative of threat interpreted as a threat to collective pride, is consistent with both current theorizing in the field of terrorism studies and with social psychological research. Applying social identity theory to the issue of homegrown terrorism extends the theory beyond its traditional application to social movements, outgroup derogation, and intergroup conflict. Indeed, social identity theory proved valuable in conceptualizing the psychological processes leading an individual to attack the very country in which they were born and raised, a puzzling social phenomenon. Results were consistent with the tenets of social identity theory: One's group identity, in this case one's religious identity, comes to represent some aspect of the self. When that religious identity is under threat, aggression and support for aggression against the alleged perpetrator of the threat will occur. The empirical evidence described in this dissertation has contributed to our understanding of *how* a narrative of threat, a factor previously identified in terrorism studies but never investigated, can

influence radicalization. This narrative contributes to the radicalization process through its threat to an individual's collective pride.

The second factor in the two-factor model of homegrown terrorism was SDO, a perhaps controversial proposition given that personality factors have been largely discounted in most psychological theorizing about terrorism. Throughout my doctoral research, the link between high SDO and terrorism was found in a survey study, two laboratory experiments, and two simulations. Moreover, across the literature I reviewed, the claims about the nonexistence of a "terrorist personality" are seemingly unfounded. I must conclude then, in all likelihood, that individuals who become involved in homegrown terrorism may have distinct personality profiles, and that high SDO might be part of that profile.

These repeated findings linking high SDO and terrorism were compelling, yet somewhat unexpected in that they contradicted the only other study on this topic (Levin, Henry, Pratto, & Sidanius, 2003). Although my results were consistent with other findings linking high SDO to prejudice, nationalism, patriotism, political conservatism, and cultural elitism (Pratto, Sidanius, Stallworth, and Malle, 1994, Pratto et al., 2000; Sidanius & Pratto, 1999), the reason for the link I obtained between high SDO and terrorism necessitates further research.

A straightforward interpretation of the link between high SDO and terrorism might simply focus on domination. Indeed, SDO denotes the extent to which one desires the ingroup to dominate (Pratto, Sidanius, Stallworth, & Malle, 1994, p. 742), and killing, with the accompanying terror it produces, is the

ultimate form of domination. However, the explanation for why high SDO is associated with terrorism is probably less straightforward and largely depends on other factors that were not measured during my research. To further elucidate the relationship between SDO and support for terrorism, future research must consider other variables known to affect the outcomes of SDO such as, for example, the perceptions of one's own group. Indeed, intergroup attitudes related to SDO have been seen to change according to the perceived *power* of one's ingroup, as well as according to the perceived *status* of one's ingroup (Sidanius & Pratto, 1999). Outcomes related to SDO have also been influenced by perceptions of the intergroup relationship, notably the stability of the intergroup hierarchy (Federico, 1999), and the perceived legitimacy of this hierarchy (Levin, Federico, Sidanius, Rabinowitz, 2002).

Intergroup attitudes related to SDO might also change depending on the cultural context. Muslim individuals in Lebanon, the respondents in Levin et al's survey (2003) described in Manuscript 2, might perceive themselves, their group, and their group's status, very differently than do Canadian Muslims, for example. For homegrown jihadists living in a Western country, the "West" is not an external entity with a relative status as it would be for non-Western jihadists. Jihadists in Muslim countries might be motivated to attack the West in order to reduce the status difference between Western and Muslim countries, thus defending against the dominance of a distinct outgroup. Conversely, Western jihadists might be motivated to replace the social hierarchy in which they live with another social order where their group dominates. Despite these nuances,

SDO has emerged as a consistent personality characteristic related to terrorism that clearly warrants further investigation.

Key Limitation

There remains an explanatory gap between my stated research goal and my final research product. In my dissertation, I set out to explain what influences an individual to become supportive of, and ultimately engage in, terrorism. Here, two factors have been identified as being consistently linked to aggressive action tendencies (Manuscript 1, Study 1), positive appraisals of terrorism (Manuscript 1, Studies 2 and 3), and preference to role-play a terrorist (Manuscript 3, Simulation 1 and 2). These two factors constitute a novel perspective on social psychological processes engendering support for terrorism. Support for terrorism, however, differs from actually engaging in terrorism.

Indeed, many more people support terrorism than engage in terrorism. This fact has produced the seemingly insurmountable challenge, facing security agencies and researchers alike, of differentiating actual terrorists from people who share their ideas. This challenge remains, as the two-factor model falls short of identifying who will convert attitudes into actions. Nonetheless, support for, and positive attitudes towards a behavior are evidently important precursors of that behavior. In this way, by predicting support for terrorism, the two-factor model does contribute in predicting the antecedents of acts of terrorism. More importantly, the two-factor model provides an empirical foundation, hitherto lacking, for future research attempts at distinguishing those who will act from those who will simply talk. Such potential research avenues are discussed next.

Potential Avenues for Future Research

In Manuscript 1, based on my review of the literature, I recommended five avenues for future research on homegrown terrorism: the affective reactions to group relative deprivation, the management of collective identities, the role of personality characteristics, the Internet, and the jihadi narrative. While additional research is needed concerning the two research avenues pursued in my dissertation, I maintain that the three other avenues of research originally suggested still hold promise for understanding the radicalization process.

Affective reactions to group relative deprivation.

Relative deprivation is often included in models of the radicalization process leading to terrorism. What has been neglected in these models, however, is the distinction between the cognitive and affective dimensions of relative deprivation, a distinction that has been the focus of much research in the past decade. Indeed, to experience relative deprivation, an individual must perceive that they (or their group) are relatively deprived in relation to a comparison, and must also feel discontent, angry, or frustrated as a result (Dubé & Guimond, 1986). Thus, feeling relatively deprived involves two components: a cognition and a negative emotion. Although early studies often failed to distinguish between measurements of the cognitive belief that one is deprived and the emotions associated with it (see Smith & Ortiz, 2002), contemporary studies now include measurements of both cognitive and affective components. This distinction has revealed the importance of emotions in predicting the consequences of relative deprivation (van Zomeren, Postmes, & Spears, 2008). Feelings of deprivation, as

opposed to solely the cognitive beliefs of deprivation, have consistently been found to be better predictors of collective action and negative outgroup attitudes (van Zomeren, Postmes, & Spears, 2008; Duckitt & Mphuthing, 2002). These findings suggest that the affective dimension of relative deprivation might potentially contribute to the radicalization process. Moreover, a conceptual link can be made between experiencing relative deprivation and experiencing a threatened sense of collective pride; this link is also worth investigating.

The management of collective identities.

Another theme commonly cited in theories of radicalization is the management of collective identities. This understudied topic usually refers to the experience of Muslim youth living in the West, and has great potential in explaining the radicalization of homegrown jihadists. As many bicultural individuals, Muslim youth living in the West must manage a heritage identity inherited from their family at the same time as they internalize an identity conferred by their country of residence (Giguère, Lalonde, & Lou, 2010). For some youth, already confronted by identity-construction tasks typical during adolescence, managing these two identities can be especially difficult (Baumeister, Shapiro, & Tice, 1985). These identity management challenges, many experts claim, can somehow lead youth to explore and eventually embrace violent jihad (e.g. Stroink, 2007). Much research in social psychology has been devoted to understanding the adaptation of those faced with managing two collective identities. As a whole, findings suggest that bicultural youth do learn to comfortably navigate their two cultures, and generally adopt aspects of both

identities. For example, an individual can thus feel both Somali and Canadian, or Muslim and Western, without having to favor one identity over the other (Berry, 1990). Although conflicts may sometimes arise from living in two different cultures, bicultural individuals tend to be psychologically as well-adjusted as their mono-cultural peers (Shih, & Sanchez, 2005). Furthermore, clearly understanding ones' bicultural identity has been linked to increased self-esteem and well-being (Usborne & Taylor, 2010). More pertinent to this potential research topic, however, is the claim made by some experts that developing a dual-identity, or at least internalizing aspects of North-American cultural values, may inoculate bicultural individuals against radicalization (Rabasa, 2004, p. 444; Sageman, 2008a).

Unfortunately, some individuals may not effectively internalize their two cultural identities (see Berry, 1990). The active rejection of one's Western identity, as a result of failed identity integration, constitutes a promising avenue of research for understanding the initial phases of the radicalization process experienced by homegrown jihadists. Again, exploring the impact of the broader intergroup context on individual's identities, as was done in the current dissertation when exploring the influence of a narrative of threat on identity, may provide additional insight into the psychological processes leading to terrorism.

The Internet.

The final avenue for future research is not a factor potentially involved in the radicalization process, but rather a platform for conducting research on radicalization. This platform is the Internet.

The Internet has featured one way or another in each homegrown jihadi terrorist plot since 2002. Currently, jihadists use all aspects of the Internet: websites, online chat forums, and multiple social networking tools. Through these virtual channels, the narrative of threat has been widely propagated through the Internet. Although worrying, this virtual presence may have a silver lining: As jihadists increase their presence on the Internet, they become increasingly accessible to researchers.

The Internet is a platform for potential future research of the two-factor model, and even relative deprivation and identity. For example, the link I found between the threat to Islam and the threat to collective pride could be investigated through the online writings of jihadists.

Research on SDO could also be conducted over the Internet. For this, researchers might take advantage of specific online forums that are not exclusive to jihadists but also include individuals from a broader portion of the ideological spectrum. Online postings in these discussion forums could be subjected to content analysis, coding for SDO and statements associated with collective pride, and testing if markers of increased extremism are linked to SDO and threatened collective pride. In this way, the Internet would not only be a forum by which radicalization is propagated, but could also be a tool for understanding radicalization, and ultimately attempting counter-radicalization initiatives.

Conclusions

My doctoral program of research set out to understand and collect empirical evidence on the psychological factors contributing to the radicalization

process. Evidence for the importance of collective pride and high SDO in this process has emerged and provides direction for future studies and for counter-radicalization strategies. This data regarding the psychology of radicalization also lends important support to the notion that it is possible to use systematic, empirical investigation to inform terrorism research and ultimately combat terrorism. Future research can build on the methodologies used in the present research, and incorporate other methodological techniques, such as Internet-based research, to further understand those who commit terrorist acts. Such an understanding is absolutely necessary if terrorism is to be countered.

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Appendix A

Articles in the journal Terrorism and Political Violence reviewed for Manuscript 3

Table 12. Articles in the journal Terrorism and Political Violence that contain assertions about personality and terrorism.

Article				Dimensions of personality		
Year	Authors	Vol.	Issue	Mental illness	Personality traits	Demographics
2000	White	12	1			No
2000	Post, Ruby, & Shaw	12	2		Yes	
2001	Tucker	13	3	Yes	Yes	Yes
2001	Gressang	13	3			Yes
2002	Nedoroscik	14	2			Yes
2003	Griffin	15	1	No		
2003	Post, Sprinzak, & Denny	15	1			**Yes**
2003	Hecht	15	3	No	No	Yes
2003	Weinberg, Pedahzur, & Canetti-Nisim	15	3			**Yes**
2003	Alam	15	4			Yes
2003	Ackerman	15	4			Yes
2004	Testas	16	2			**Yes**
2004	Spechard et al.	16	2	No		
2004	Kimhi & Even	16	4		No	
2006	Silke	18	1	No		
2006	Piazza	18	1			**No**
2006	Kruglanski & Fishman	18	2	No	Yes	Yes
2006	Taylor & Horgan	18	4	No	No	
2007	Charters	19	1			Yes
2007	Fair	20	1			**Yes**
2009	Trujillo et al.	21	4	No		Yes
2009	Dawson	22	1			No
2009	Merari et al.	22	1	**No**	**Yes**	**Yes**
2011	Mullins	23	2	No		

Notes: "No" indicates that the author asserts that a particular dimension of personality is not related to terrorism; "Yes" indicates that the author asserts that a particular dimension of personality is related to terrorism; **Bold** indicates that the author's assertion is based on data; Empty cells indicate that authors did not assert about that dimension of personality.

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Kimhi, S., Even, S. (2004). Who are the Palestinian suicide bombers? *Terrorism and Political Violence, 16*(4), 815-840.

Merari, A., Diamant, I., Bibi, A., Broshi, Y., & Zakin, G. (2009). Personality characteristics of "self martyrs"/"suicide bombers" and organizers of suicide attacks. *Terrorism and Political Violence, 22*(1), 87-101.

Mullins, S. (2011). Islamist Terrorism and Australia: An Empirical Examination of the "Home-Grown" Threat. *Terrorism and Political Violence, 23*(2), 254-285.

Nedoroscik, J.A. (2002). Extremist groups in Egypt. Terrorism and Political Violence, 14(2), 47-76.

Piazza, J.A. (2006). Rooted in poverty? Terrorism, poor economic development, and social cleavages. *Terrorism and Political Violence, 18*(1), 159-177.

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White, W. R. (2000). Issues in the study of political violence: Understanding the motives of participants in small group political violence. *Terrorism and Political Violence, 12*(1), 95-108.

Appendix B

Articles in the journal Studies in Conflict and Terrorism reviewed for Manuscript 3

Table 13. Articles in the journal Studies in Conflict and Terrorism that contain assertions about the link between personality and terrorism.

Article				Dimensions of personality		
Year	Authors	Vol.	Issue	Mental illness	Personality traits	Demographics
2000	Schbley	23	3			**Yes**
2003	Dolnik	26	1			Yes & No
2003	Silke	26	1	No		
2003	Schbley	26	2	**Yes**	**Yes**	**Yes**
2003	Cunningham	26	3			Yes
2004	Lester, Yang, & Lindsay	27	4		Yes	Yes
2004	Duyvesteyn	27	5	No	No	Yes
2004	Reinares	27	6			**Yes**
2005	Jordan & Horsburgh	28	3			**Yes**
2006	Speckhard & Ahkmedova	29	5			**Yes**
2006	Newman	29	8			Yes
2007	Von Knop	30	5			Yes
2007	Berko & Erez	30	5			Yes
2007	Florez-Morris	30	7			**Yes**
2008	Locicero & Sinclair	31	3	No	Yes	No
2008	Jaques & Taylor	31	4	No	Yes	Yes
2008	Asal, Fair, & Shellman	31	11			**Yes**
2008	Speckhard	31	11	Yes		
2009	Kassel	32	3		Yes	
2009	Schwartz, Dunkel, & Waterman	32	6	No		
2009	Mullins	32	6	No		No
2010	Spaaij	33	9	**Yes**	Yes	
2011	Lankford	34	4	Yes		

Notes: "No" indicates that the author asserts that a particular dimension of personality is not related to terrorism; "Yes" indicates that the author asserts that a particular dimension of personality is related to terrorism; **Bold** indicates that the author's assertion is based on data; Empty cells indicate that authors did not assert about that dimension of personality.

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Appendix C

Articles in the journal Perspectives on Terrorism reviewed for Manuscript 3

Table 14. Articles in the journal Perspectives on Terrorism that contain assertions about personality and terrorism.

Article				Dimensions of personality		
Year	Authors	Vol.	Issue	Mental illness	Personality traits	Demographics
2007	de la Corte	1	2		Yes	
2008	Mullins	1	3	No		Yes
2008	Kaplan	2	2		Yes	Yes
2008	Atran	2	5			**Yes**
2008	Lia	2	8		No	No
2008	Weinberg	2	9			Yes
2008	Beg	2	10		Yes	Yes
2008	Gupta	2	11		Yes	
2009	Leuprecht, Hataley, Moskalenko & McCauley	3	2		Yes	
2010	Puri	4	4			**Yes**
2010	Rhineheart	4	5		No	

Notes: "No" indicates that the author asserts that a particular dimension of personality is not related to terrorism; "Yes" indicates that the author asserts that a particular dimension of personality is related to terrorism; **Bold** indicates that the author's assertion is based on data; Empty cells indicate that authors did not assert about that dimension of personality.

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Kaplan, J. (2008). Terrorism's fifth wave: A theory, a conundrum, and a dilemma. *Perspectives on Terrorism*, *2*(2), 12-24.

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Leuprecht, C., Hataley, T., Moskalenko, S., & McCauley, C. (2009). Winning the battle but losing the war? Narrative and counter-narratives strategy. *Perspectives on Terrorism*, *3*(2), 25-35.

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Rineheart, J. (2010). Counterterrorism and counterinsurgency. *Perspectives on Terrorism*, *4*(5), 32-47.

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Appendix D

Articles in the journal Critical Studies on Terrorism reviewed for Manuscript 3

Table 15. Articles in the journal Critical Studies on Terrorism that contain assertions about personality and terrorism.

Article				Dimensions of personality		
Year	Authors	Vol.	Issue	Mental illness	Personality traits	Demographics
2008	Stohl	1	1	No		
2008	Zulaika & Douglass	1	1	No		No
2008	Booth	1	1	No	No	
2008	Foster & Butler	1	1			Yes
2008	Weinberg & Eubank	1	2			No
2008	Dodds	1	2		No	No
2008	Toros	1	2	No		
2008	Jackson	1	2			No
2009	Svensson	2	1			Yes
2009	Lee	2	2			**No**
2009	Pappe	2	2	Yes		
2009	Michel & Richards	2	3			No
2010	Aning	3	1			Yes
2010	Malkki & Toivanen	3	2		No	
2010	Zulaika	3	2	No		
2010	Ojanen	3	2			No
2010	Holt	3	3			Yes
2010	Gordon	3	3		No	

Notes: "No" indicates that the author asserts that a particular dimension of personality is not related to terrorism; "Yes" indicates that the author asserts that a particular dimension of personality is related to terrorism; **Bold** indicates that the author's assertion is based on data; Empty cells indicate that authors did not assert about that dimension of personality.

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Booth, K. (2008). The human faces of terror: Reflections in a cracked looking-glass. Critical *Studies on Terrorism, 1*(1), 65-79.

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Malkki, L. & Toivanen, R. (2010). Editors' introduction: Terrorism – myths, agendas and research. *Critical Studies on Terrorism, 3*(2), 243-246.

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Appendix E

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