

## Terrorist violence and the enrollment of psychology in predicting Muslim extremism: critical terrorism studies meets critical algorithm studies

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# Terrorist violence and the enrollment of psychology in predicting Muslim extremism: critical terrorism studies meets critical algorithm studies

Flagg Miller 

Religious Studies Department, The University of California, Davis, CA, USA

## ABSTRACT

Discourse on terrorist violence has long facilitated an especially liberal form of securitisation. Originally evoked in reference to anarchists and communists, a rational consideration of terrorist violence, inaugurated by the concept, asks for deferred judgement about the nature of, or reasons behind, violence related to terror on the premise that state and international legal norms governing the legitimate use of violence fail to circumscribe the proper capacities of the state to regulate and explain terrorism. Where sovereign powers along with their military and civilian instruments of coercion are deemed unable to regulate violence effectively, analysts of terrorist violence and their readership are invited to consider and cultivate new sensibilities. Beginning in the 1980s, studies by psychologists found renewed urgency among a growing cadre of interdisciplinary terror experts who found religion, Islam especially, a key variable of analysis. I situate their contributions in a longer history of secular and racialising discourse about terrorist violence. Central to this history are practices of reading, translating, interpreting and archiving texts. Evidence for the argument is based on the analysis of an algorithm that allegedly predicts the likelihood of terrorist strikes by counting words spoken by al-Qa'ida leaders and correlating their frequency with over 30 psychological categories.

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## Introduction

In 2011, the United States Department of Homeland Security provided contributors to a guest-edited volume of the *Dynamics of Asymmetric Conflict* privileged access to Islamic extremist texts on the condition that they distinguish “terrorist” from “nonterrorist” groups. There was a catch: al-Qa'ida had to be considered an example of the former while the Saudi opposition group the Movement for Islamic Reform in Arabia, or MIRA, although identified under international and domestic law at the time as a terrorist organisation, had to be the “nonterrorist” comparison group.<sup>1</sup> According to Smith

**CONTACT** Flagg Miller  [fmiller@ucdavis.edu](mailto:fmiller@ucdavis.edu)

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(2011, 88), Homeland Security analyst and guest editor of the volume, MIRA had not yet engaged in “terrorist violence”. Taking up her call for heightened scrutiny, scholars from a range of disciplines produced evidence demonstrating how discourse analysis might help predict terrorist strikes.

A case of political convenience, given long-standing ties between the United States and Saudi Arabia at the dawn of the new millennium? Perhaps. In this article, I set aside rational-actor theory, however, to excavate a more persistent logic in Western distinctions between Muslims involved in political conflict. Modern sovereign power, as political theorist Carl Schmitt (1922 [1985]) argues, has a religious history. State rulers, in the fashion of a Judeo-Christian deity, assume the burden not simply of establishing and protecting the law but also deciding when, under exceptional circumstances, legal norms can be suspended indefinitely. Schmitt’s insights on exceptionalism have been expanded by scholars with as much attention to their qualification in various contexts as to their inability to account for the ways in which governance works through ongoing colonial and racial formations of violence that make little or no appeal to legality and are therefore unexceptional (c.f. especially Hansen and Stepputat 2005; see also, Agamben 1998; Aggarwar 2010; Burke 2009).

In this article, I share a Foucauldian turn in much of this work, relocating the stakes of securitisation from the state, as it faces external threats, to individuals whose formation within and across contests for state power expresses hierarchical rights and ethics. Knowledge about problematic as well as ordinary individuals and the “populations” that define them has been instrumental to governance in the modern era. With special attention to the disciplinarity of knowledge production, I focus on the contributions of psychology, in particular. Long invested in interpreting as well as diagnosing violence in human society, psychology has been instrumental in studies of extremism. In the wake of the 1979 Iranian revolution, studies by psychologists found renewed urgency among a growing cadre of interdisciplinary terror experts who made religion, Islam especially, a key variable of analysis.

Contributors to the *Dynamics of Asymmetric Conflict* volume consider, as their centre-piece, a computer algorithm developed by psychologists that counts words spoken by al-Qa’ida leaders and correlates their frequency with over 30 psychological categories. According to Lisa Stampnitsky (2013, 203), Western counterterrorism discourse renders its enemies knowable not through legibility, as Foucault might argue, but rather through rejecting the very possibility of knowing them. I argue that the algorithm disarticulates Muslim extremist subjects in the interests of producing a social aggregate more responsive to liberal securitisation modelling. Liberal engineering runs thin, however. A discourse of terrorist violence informing the algorithm’s development has illiberal and, more recently, Orientalist moorings in Western imperial projects and what Edward Said (1981 [1997], 26) called “political knowledge”. Instrumental to this work are practices of reading, translating and interpreting texts, as well as text assemblage and collaboration among scholars across multiple disciplines.

## **Terrorist violence: a cultural history**

The subtitle of the journal under consideration reads “The Relationship Between Rhetoric and ‘Terrorist Violence.’” Neither terrorism nor ordinary violence alone, “terrorist

violence” introduces new possibilities for understanding the causes of terror and their security priorities. Had the volume’s authors focused simply on terrorism, they would have had to group al-Qa’ida and MIRA together under the same umbrella of legal and moral sanctions imposed by international and domestic law. Instead, slippage introduced by the phrase gives special, paradigmatic propensities to al-Qa’ida alone. The idea of terrorist violence purports to offer a more refined vocabulary by which some legally designated Islamic terrorist groups, such as MIRA, might not be deemed quite as dangerous. The supra-legal measure of this distinction, I argue, creates opportunities for exercising what I will call “liberal disclosure”.

Before exploring the development of this form of cultural knowledge over the twentieth century, I provide a brief overview of how and why the concept of terrorist violence first appeared in English-language sources. Unlike popular or even scholarly understandings of terrorism, the modified noun “terrorist violence” works not primarily by “othering” those who committed violent threats or acts of intimidation generating fear beyond their targeted victims. Rather, an aspect of violence that can be quite mundane, terrorist violence evokes identities, causes and modes of political action that are *not* morally beyond the pale. Different from non-terroristic violence and yet profoundly underdetermined, the phrase invites emotions, sensibilities and discernments implicating readers as moral evaluators.

Consider the term’s first appearance in an anonymous news column about the injustices of industrial capitalism from a Texas newspaper, *The Galveston Daily News*, in 1892:

The concentration of wealth in the hands of the few was shown in the Post the other day in a statement deduced from the New York Tribune’s millionaire list that 4000 persons own one-fourth of the real and personal wealth of the United States. We have another illustration in some figures as to the Vanderbilt millions. It has been computed that if kept intact and the interest compounded semiannually at 5 per cent in five years they will amount to \$448,000,000, in twenty-five years to \$911,000,000 and in fifty years to \$3,000,000,000. These are staggering figures, and naturally they suggest the thought that such enormous accumulations of money in the hands of one man or of one family can but be a menace to the stability of our form of government. It is one of the arguments that creates anarchists. The French law dividing estates or a good healthy tax of 60 per cent on all estates over a million would help matters...

Shortly later, the column continues:

Parisian radicalism may have considerable sympathy with declamation against the existing social order and even with some forms of terrorist violence, but the radicals of Paris are not content to be blown up promiscuously themselves for the great cause of anarchism. M. Sauton pointed out that all the victims of the recent outrages belonged to the working class. The tyrant of old fell when he began to be an object of terror to the cobblers of Rome – Hoc nocuit Lamiarum coede madentem. Anarchism is safer when it plots against emperors and princes than when it explodes its dynamite in a wine shop full of artisans and their wives. (8)

Bomb-wielding Parisian radicals may be terrorists, especially insofar as they target working-class “cobblers of Rome”. Their reprehensible tactics, however, bear little resemblance to a loftier political motive: they “have considerable sympathy with declamation against the existing social order and even with some forms of *terrorist violence* [my

italics]”. Violent and coordinated attacks are a response to what might be conceived as justified outrage at the excesses of industrial capitalism. Insofar as the Vanderbilt dynasty illustrates a disturbing trend in global wealth extraction, Texans and French anarchists share a common cause. The very “stability of our form of government”, undermined by “money in the hands of one man or of one family”, is threatened by a dangerous and transnational “menace”, a form of structural violence implicating daily readers.

Efforts to establish international legal norms beginning in the early twentieth century, however, introduced new perspectives on what terrorism meant and how it should be confronted. Terrorism was becoming a legal discourse for the adjudication of rights and obligations among nations. In 1920, the newly founded Permanent Court of International Justice in the Hague, a precursor to the International Court of Justice, received a report from a Commission of Jurists urging transnational cooperation in addressing the “violation of the laws and customs of war and of the laws of humanity” (Hudson 1938, 552). Since the Court had no criminal jurisdiction, the report found no uptake at its parent institution, the League of Nations. In subsequent years, plans for assuring “the repression of conspiracies or crimes committed with a political and terrorist purpose” were drafted by members of the International Law Association. The Convention for the Prevention and Punishment of Terrorism, signed in 1937 by 24 member states of the League of Nations, ratified these ambitions. Little matter that the convention never went into effect; agreement between nations on matters of extradition had always been difficult to obtain. A principle for the objective apprehension, adjudication and prevention of terrorism had been founded.

Although the concept of terrorist violence does not surface explicitly in the convention’s language, the phrase is employed in a legal analysis of its implications in the following year as well as in the League of Nations’ own journal (*ibid*; “Saar Territory” 1934, 1171). These references can be paired with 13 other instances of the term’s usage for the first time in the twentieth century, all during the 1930s.<sup>2</sup> For the most part, the ideological tendency that is perceived to instigate terrorist violence is either communism or fascist variants of nationalist socialism, much in keeping with discourse about “terrorism” at the time. Unlike the latter, however, the phrase “terrorist violence” signifies, in a vast majority of cases, state terror or parastatal violence unleashed in struggles for political ascendancy.<sup>3</sup> Terrorism was less a “bottom-up” revolutionary affair, in other words, than a betrayal from within or, worse, a “top-down” problem symptomatic of deep structural trouble. By labelling the phenomenon a more symptomatic aspect of violence broadly construed, authors in a variety of contexts suggested that a broader portfolio of securitisation measures and policies might be warranted.

Through the middle decades of the twentieth century, and especially in the 1960s, recourse to descriptions of terrorist violence proliferated. Europe was the most oft-cited home for such violence, at least before 1980. After this date, the Islamic world and Latin America rose to ascendancy. Much could be said about the many strands of discourse during this time. The middle four decades of the twentieth century (from 1 January 1941 to 31 December 1980) saw an increase in the *New York Times*’ usage of the phrase from only 10 (between 1900 and 1940) to 106; then again to 252 (an increase of roughly 240%) in the nearly 4 subsequent decades leading up to March 2017. Book-mentions, according to the Google Books search engine, increased more slowly during the same

intervals although by leaps and bounds in the final, roughly 40-year segment, a period that begins just 2 years after the Ayatollah Khomeini took power during the Iranian Revolution in 1979: from 15 between 1901 and 1940 to 22, and then many hundreds. Google Scholar produces even more dramatic numbers: 3, 123, and 14,180, with 87% of the latter surge in usage attributable to the period beginning in 2001, the same year as the September 11<sup>th</sup> attacks.

While discussions of “terrorism” in the same sources certainly outpace those of terrorist violence *per se*, exceptions to this tendency deserve scrutiny. Between 2001 and 2017, references in the *New York Times* to the phrase “terrorist violence” drop by 33% when compared with the previous two decades, even as the word “terrorism” witnesses a 60% uptick in usage.<sup>4</sup> Over the same period, the discourse of terrorist violence shifts in favour of a narrower cadre of professionalised experts. In what follows, I devote special attention to the ways in which a range of scholars turned to the field of psychology, in particular, to identify, diagnose and ultimately develop predictive models for terrorist violence and its perpetrators. No other academic discipline – from political science to international relations, Middle East Studies to law – shifts so dramatically in the new millennium towards the analysis of terrorist violence than psychology.<sup>5</sup> The American Psychological Association’s PsycInfo search engine reveals, in fact, that the frequency with which the phrase “terrorist violence” came into usage during this period *outpaces* discussion of “terrorism” by 15% when compared with the previous two decades. As the United States shapes its post-Cold War security priorities in the wake of 9/11, psychologists have become “enrolled” like few other academic communities in explaining the diverse causes of terrorist violence, identifying their features and developing approaches to combatting them.<sup>6</sup>

### A post-cold war algorithm: Linguistic Inquiry and Word Count (LIWC)

In the early 1990s, after the disaggregation of former Soviet republics and ensuing uncertainty among US policy makers about America’s security objectives, psychologist James W. Pennebaker and immunologist Roger Booth teamed up to develop a computerised text analysis program called Linguistic Inquiry and Word Count, or LIWC (pronounced “Luke”). Their initiative, grounded in the field of health psychology, offers users a way to chart the emotional and cognitive worlds of speakers by linking the frequency of word-use to over 80 categories of sociality, health and personality. Acclaimed by scholars, journalists and health professionals, LIWC’s text processing has been considered an exemplary tool for innovative content analysis.<sup>7</sup> American military, intelligence and security officials, in particular, have found its applications helpful; funding from all of these sources was secured in the mid-2000s for using LIWC-based analysis to study al-Qa’ida’s discourse. In their conclusion to the guest-edited *Dynamics of Asymmetric Conflict* volume, co-authors Conway and Conway (2011, 189) review the spectrum of analytic tools for identifying the distinctive features of terrorist rhetoric and predicting when terrorists are planning to attack. LIWC is said to yield “some of the largest and most consistent effects” for demonstrating the validity of these models.

Psychologists had established a foothold in studies of radical extremism for at least several decades. Arguments for religion’s special toxicity had particular leverage, especially where Islam was concerned. When one scholar claimed, in 1980, that

Hanafi Muslims (representing Islam's largest legal school) exhibited a "psychopathological" tendency enough to make their version of terrorism altogether different from those informed by usual sociopolitical conditions, he echoed a host of others before him who had argued as much, though with less clinical precision (Merari 1980, 281).<sup>8</sup>

Many were the folds of pathological aberrancy said to complicate Muslim minds. They included an acute vulnerability to "humiliation" and "shame";<sup>9</sup> "externalisation" and "projection", by which repressed experiences get reified outwardly as implacable group identities (Young 2003); "splitting" in personality development due to childhood trauma (Horgan 2003; Falk 2008); a unique capacity for "hatred", partly the result of sustained "victimisation" by authoritarian regimes (Gottschalk and Gottschalk 2004; Laqueur 2002); an ensuing quest for "control" (Elovitz 2007); a yearning to belong (Post 1990), perhaps especially due to a sense of "isolation" (Navarro 2009) or to merge with a patriarchal and transcendent God-idea (Stein 2009). Renditions of the Israeli-Palestinian conflict often proved a litmus test for such theories, liable as they were to expounding the implacability of the communities involved. A focus on terrorism also proved instrumental, especially since the 1970s had witnessed unprecedented growth in modern terrorism studies. A rash of airplane hijackings at the time, fuelled by a growing industry of experts and database, stoked public and governmental interest in the topic.<sup>10</sup> Psychologists, along with scholars and analysts representing an increasing range of disciplines, were poised to supply explanations.

In what follows, I begin with a closer look at the algorithmic techniques employed by Pennebaker and co-author Cindy Chung as they use LIWC to analyse discourse by al-Qa'ida chiefs Osama bin Laden and Ayman al-Zawahiri. Seeking to navigate the challenges of reductionism without any training in Islamic studies or relevant areal languages, Pennebaker and Chung emphasise the rigor of LIWC's analytical capabilities:

We are at the dawn of a new era in computerized text analysis. Through continued analyses of linguistic style and automated theme-based analyses, it will be possible to follow the individual and group dynamics of al-Qa'ida and other groups over time [...] With continued refinements in computational linguistics and cross-language research, it will soon be possible to bypass many problems in translation and examine statements in the language in which they were originally spoken or written. (2009, 464)

Linguistic analysis and translation, the authors continue, are especially conducive to anticipating and preventing future attacks, at least if properly managed with the aid of text-mining software designed for big data. As I unpack the authors' methodology with an aim to situating their approach historically in the early years of America's post-Cold War period, I attempt to answer three questions. First, what cultural biases inform the algorithm's development and use? Second, what is elided when counter-terrorism analysts and law enforcement officials focus on the particular rendition of "religion" that is made available to them by LIWC's advocates? Finally, how do the potential benefits of using computer-based text processing occlude a new form of knowledge production that arises from the study of terrorist violence and what psychologists call "disclosure"?



## LIWC analysis and the cultural embedding of disclosure

LIWC pairs each word with a psychological-relevant category, as determined by a user-defined dictionary. A corresponding table shows the percentage of total words that match each category; a text consisting of 8000 words, for example, might contain 700 pronouns and 413 “negative emotion” words, converting these numbers to the percentiles 8.7% and 5.1%, respectively. When psychologist James Pennebaker began working with colleagues to develop LIWC in the 1990s, he relied on years of experience as a writing therapist who specialised in helping patients recover from trauma or stressful events. As he and others demonstrated, patients who disclosed their deepest thoughts and feelings through brief periods of writing each day could experience notable improvements in health. Patients’ use of “emotion-related” words – “happy”, “cheer”, “admire”, “care”, “forgive”, “worship” – correlated with speedy recovery; negative words like “afraid”, “aggress”, “contradiction” or “rebel” did the opposite. These findings were incorporated into what would ultimately become a “dictionary” linking some 6400 words and word stems to 32 psychological categories relating to affect, cognition, sociality and biological processing.<sup>11</sup>

In around 1996, the algorithm linking word frequencies to correlations in mental and physical health became commercialised and today offers users “the gold standard in computerised text analysis”.<sup>12</sup> Among other services, clients are invited to “experience the power of LIWC for twitter personality analysis”, as, for example, applied to “friends, lovers or Hollywood celebrities”.<sup>13</sup> Originally, however, LIWC was developed as part of a treatment plan modelled on psychoanalysis in which patients’ improvement is linked to demonstrable change “in the way they are thinking” (Campbell and Pennebaker 2003, 60). The litmus test for such change has been a personal narrative worked out in the “disclosure” of emotions through writing. At its inception, then (c.f. Stone and Pennebaker 2002), LIWC’s success as a diagnostic technology depended on regular interactions with a writing therapist as well as a team of health and psychology experts who could independently assess patients’ progress.

Given LIWC’s emergence in contexts of therapeutic care, the technology’s redeployment in studies of Muslim radicalisation across the globe deserves scrutiny. In a thorough review of psychological approaches to the study of terrorism, behavioural neurologist Jeff Victoroff (2005 32) cautions that “terrorism is not a unitary behaviour”. While indices of trauma or stressful events may provide cues to the role of the unconscious, analytical models of behaviour identified as “terrorist” or “radical” must incorporate a broad range of interdisciplinary approaches that include socialisation and environmental influences quite beyond whatever feelings or personal narratives may be elicited through psychotherapy. Particular concerns arise when, as in the case of Smith and contributors’, observations on adversarial behaviour are drawn not from informants themselves but rather from relatively small text-corpora held to represent their ideas, often through the assistance of translators working in a variety of professional capacities. Osama bin Laden and Ayman al-Zawahiri’s discourse, for example, has routinely been translated at the behest of law enforcement agencies, intelligence directorates, the armed forces and the press. While the objectivity of extracted insights is said to be strengthened through the use of algorithms that can process data produced and assembled in a variety of circumstances, I take cues, in what follows, from scholars



engaged in a growing field of “critical algorithm studies”.<sup>14</sup> What does a closer examination of text-processing methods suggest about methodological and theoretical biases inherent in LIWC developers’ approach to studying extremist discourse by bin Laden and al-Zawahiri? What do their perspectives reveal about the ontological entailments of studying terrorist violence perpetrated by Muslims in an era of US-led global securitisation?

The assembly of 52 texts representing bin Laden and al-Zawahiri’s discourse was provided to Pennebaker and Chung in exchange for their project’s funding by the National Science Foundation, US Departments of Homeland Security and Defense and the Army Research Institute, among other agencies.<sup>15</sup> The original text corpus came from the US Federal Bureau of Investigation, which had opened a file on bin Laden in 1996 and had been collecting and translating his material for over a decade before granting the researchers access to the file. While the history of the FBI’s case-file on al-Zawahiri is unknown, Pennebaker and Chung note that their collective texts span the years 1988–2006 and were all delivered to them in English translation. To date, the documents have not been made publicly available and hence cannot be identified or studied for comparative purposes. Other corpuses available at the time of the authors’ study, such as the many statements collected from both speakers and translated by the Central Intelligence Agency’s Foreign Broadcast Information Service, were apparently considered extraneous to their objectives.

To some extent, the authors’ selectivity in defining the parameters of al-Qa’ida’s discourse reflects the contractual relationship with chief sponsors of their work. American military, law-enforcement and intelligence agencies helped fund their project and, as in the research leading to the *Dynamics of Asymmetric Conflict* volume, invited them to tailor LIWC’s application to identifying and explaining what makes al-Qa’ida’s brand of terrorist violence distinct from that of other extremist groups. The deeper and decidedly liberal terms of the authors’ text-processing methods become apparent when examining the ways in which LIWC users must prepare or “clean” their text files for use by the software.<sup>16</sup> The procedure unfolds in stages, all of which are designed to produce a text that conveys “only the actual words spoken by bin Laden or al-Zawahiri” (Pennebaker and Chung 2009, 454).

First, extended religious “and other” quotations are excised from the record. Muslim extremist subjects are truly only themselves when speaking without the encumbrances of transmitted vocal agency, whether religious or other. Second, given the preponderance of texts produced through interviews, any record of words or discourse introduced through interlocutors’ leading or follow-up questions are to be scrapped. Presumably they distort LIWC’s word-count averages. Third, documents featuring bin Laden and Zawahiri speaking together on the same occasion are also eliminated. “Heteroglossia”, endemic to the social content of language in any context, as noted by Russian linguist Mikhail Bakhtin (1975 [1994], 426), has no place in Muslim extremist discourse. Finally, while LIWCs processing can handle genres labelled “interviews” and “statements”, it appears to find “letters” or “epistles” incompatible with its software, no matter how hard they are scrubbed.

In my work on bin Laden elsewhere, I explore how boundaries between such ostensibly discrete genres were the product of collaborative effort not only by Osama himself along with his Arab Afghan interlocutors, but by a host of translators, journalists,

scholars and security officials as they reiterated Muslim extremists' words in a range of different contexts.<sup>17</sup> Pennebaker and Chung (2009, 459) suggest that letters and epistles were excluded from their study due to small sample sizes; their assertion only begs the question of why these genres were recognised in the first place. One possibility lies in the work of another psychologist and analyst of extremist Muslim discourse whose work they rely upon. According to Allison Smith (2004, 419), guest editor of the *Dynamics of Asymmetric Conflict* volume, letters are like memoirs in being "personal" and so are excluded from studies concerned with "group values".

What emerges from the end of LIWC's cleansing process is an algorithm with an unmistakably Orientalist pedigree. The Muslim extremist subject is made prone to "meaning extraction" by being secularised, individuated with no capacity for reported speech, stripped of any capacity for communicative reciprocity and turned into the emblem of a collective rather than idiosyncratic value-system. Pennebaker and Chung (2009, 464) argue that LIWC's advantage lies in its mathematical rigour in calculating the frequency of co-occurring word groups, groups that, in their view, "tend to reflect underlying themes". According to the authors, such a method ensures

that there is no predetermined categorization made by linguists, operatives or even translators. Indeed, this method is not language-determined. We could do the exact same methods on Farsi, Arabic or Korean language sets without being able to read a single word or character. The only time that translators and/or interpreters would be required is at the end of the analytic procedure. (*ibid.*)

The perfect alignment of the authors' language list – "Farsi, Arabic or Korean" – with former American president George Bush's "axis of evil" should matter little: disclosure is ostensibly language neutral and bears no cultural history.

In defence of LIWC's indifference to the cultural, social and historical dimensions of language, Pennebaker and associates appeal to the programme's focus on "natural language". This discourse style is held to be more casual and ordinary than other more elaborate or institutionally regimented styles. In some of their writings, natural language is simply a gloss for orality, as opposed to "literature" or written "essays", and is termed "natural speech" (Campbell and Pennebaker 2003, 63). In one experiment, the ostensible naturalness of speech was achieved by having subjects wear an electronic audio-recording device that automatically switched on every twelve-and-a-half minutes and recorded whatever could be captured during the course of the subject's daytime routine (Mehl and Pennebaker 2001). Such a technique begs the question of which sounds qualified as "natural", however. Presumably, a diatribe by conservative talk-radio host Alex Jones from a nearby radio would not have been included, since the voice would have been readily identifiable as different than the subject's own. What if the subject was repeating Jones's lines, however, in the hopes of pursuing his own radio career? Or chanting the repeated verses of an extended Buddhist prayer? Or conversing with someone in a second or third language unknown to the analyst? According to Pennebaker and colleagues, natural language occurs only in settings that reveal "psychologically relevant information about a person's social world" (*ibid.*, 858).

Indeed, the process by which relevancy is determined typically involves controlled writing experiments in which subjects – most often victims of substance abuse in treatment programmes, prisoners at infirmaries or undergraduate students at campus

health centres – write essays or journal entries about traumatic experiences for a specified 15–20 min each day (Pennebaker 2001, 90). The goal of such work is assuredly healthy oral conversation, measured by such linguistic features as a higher frequency of positive-emotion words, causal or “insightful” words and first-person pronouns. “Disclosure” is the overall technical term for such therapy.<sup>18</sup> In practice, however, the form and content of “natural language”, as of disclosure, are matters of professional discretion. What counts is language that indexes users’ “basic social and psychological states” and that is elicited through carefully managed text-production.

### In the name of al-Qa’ida: Muslims as exemplars in the psychological study of extremism

Much can be said about psychology’s long history as a distinctly Western enterprise and the ways in which it has sought and, in myriad ways, successfully defended its objectivity in cross-cultural enquiry. Psychological studies of religion’s special influence on extremist thought and violence, however, have all too often catered to essentialising characterisations of Muslim mentalities. A master narrative for explaining the root cause of Islamic extremist thought, for example, has been the tendency of Muslim aggressors to binarize the world into “us” and “them”, good and bad. Few scholars were more persuasive in elaborating this model than psychologist Jerrold Post (c.f. 1984, 1990), a chief government witness through decades of US congressional hearings and founder of the Central Intelligence Agency’s Center for the Analysis of Personalities and Political Behavior.<sup>19</sup>

In study after study appearing from the 1980s onward, sheer religiosity comes to define a more dogmatic kind of extremism, especially among Muslims. If one’s “sacred values” are threatened, the logic goes, all-out war is the only solution (c.f. Tetlock et al. 2000). If charismatic personalities are empowered by religious “cults”, violence is held to be a “divine duty” (Hoffman 1995; Morgan 2004). Accentuating this trend was a focus among scholars of religion on “fundamentalism”, especially Islamic and characterised by a rejection of dialogue, an antipathy to pluralism and unswerving militancy (c.f. Sivan 1983). Swept from attention to polarising rhetoric was any consideration of the ways in which extremist thought and behaviour remains integrally linked to actors’ positioning among conflicting interest groups, each of which tailors ideology to their own social and political exigencies.<sup>20</sup>

Muslims and religion in general aside, the most important figure bolstering Pennebaker and Chung’s thesis is the extremist, along with a vast scholarly literature that has been devoted to his various drives and motivations. In commending LIWC’s efficiency and reliability, the researchers highlight a range of “underlying psychological and emotional themes” that can be identified by their algorithm and that prove especially valuable in the study of extremist texts. Many are the psychological and physical conditions held to inform such themes; they fall along a continuum, from well to extremely unhealthy, and include depression, self-esteem, suicide proneness, testosterone levels, neuroticism, immediacy, honesty and dominance (Pennebaker and Chung 2009, 454). In what follows, I focus on two verbal categories that the authors find especially useful for identifying extremist thought: exclusive words, such as “except”, “but” and “without”, which are held to correlate with thinking complexity, and third-

person plural usage, ostensibly the single most reliable predictor for extremist thinking (Pennebaker and Chung 2009, 454). A careful examination of their findings, I argue, reveals the liberal presumptions in their study of extremism. By packaging their findings for sponsors interested in the study of al-Qa'ida's terrorist violence, moreover, Pennebaker and Chung give unwarranted credence to the view that computerised text-processing can help predict terrorist attacks by Muslims, as I argue in the final section.

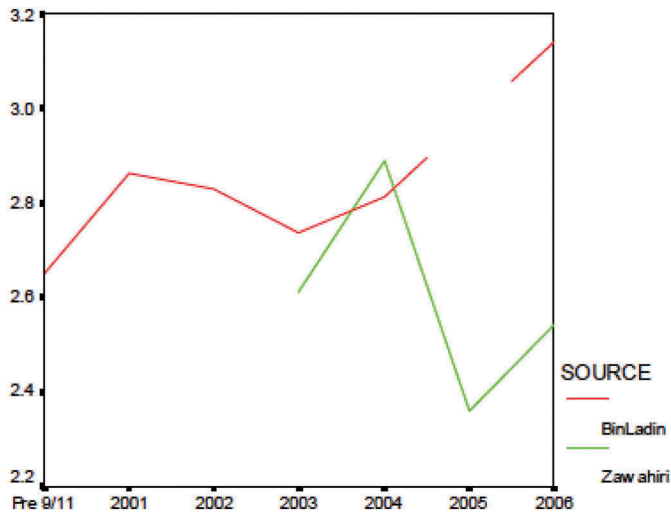
For comparative purposes, I draw on two text corpuses that differ from that produced by the FBI and used by Pennebaker and Chung. In order to ensure that my findings are commensurate with the authors', I have prepared both corpuses using the prescribed text-cleaning methods for LIWC users. The first is a selection of 10 of my own English translations (totalling 48,163 words) of bin Laden's Arabic speeches from the Islamic Fundamentalist Audio Recordings Collection at Yale University.<sup>21</sup> None of these speeches have been available to the public except in Arabic. Indeed, until the recent publication of my book, *The Audacious Ascetic: What the bin Laden Tapes Reveal about al-Qa'ida* (2015), only one has ever existed in print in any language. The second text corpus (containing 38,778 words) comes from the Foreign Broadcast Information Service (FBIS) Archive.<sup>22</sup> The FBIS was an intelligence unit within the CIA that gathered and translated openly available news and information from media sources outside the United States. From its database of bin Laden's public speeches and interviews, I assembled 34 of the most complete texts available, none of which replicate those in my first corpus. The total word count of both data sets is roughly equivalent to that of bin Laden's texts in Pennebaker and Chung's FBI archive.<sup>23</sup>

### Exclusive-word usage

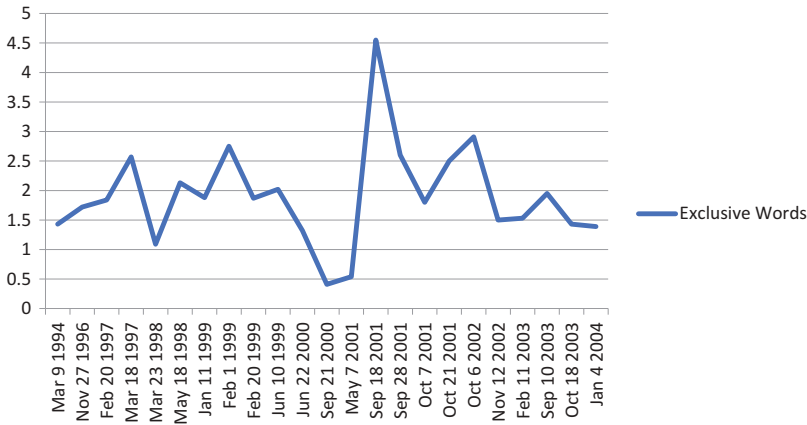
Caution in linking word-use frequency to thinking complexity was anticipated by linguist Edward Sapir in the 1930s (1933 [1984], 15). A student of the unconscious patterning of language, Sapir argued that language reflects pragmatic life and not simply mental states. Pennebaker and Chung introduce their contributions by attending to formal distinctions. Whereas nouns, regular verbs and many adjectives reveal the mere "content" of thought, *function* or style words express cognitive patterns linked to deeper personality traits (2009, 454). Functional lexemes cue more objective data: "Because it is difficult for people to control their linguistic styles, the analyses of subtle word use are helpful in gaining insights into the ways people and groups think and relate to their conversational topics, their audiences and perhaps themselves" (*ibid.*, 462).

In studies published elsewhere, Pennebaker demonstrates the ways in which exclusive-word usage correlates positively with thinking complexity. Accordingly, when running exclusive-function words through LIWC's counting program, he and Chung discover bin Laden to have used exclusive words with increasing regularity since the late 1980s. This finding contrasts with similar usage by al-Zawahiri (*ibid.*, 456; see Figure 1). Osama bin Laden, they conclude, has become a significantly more complex thinker than Zawahiri.

Text-cleaning aside, there are three principle flaws with this conclusion. First, as mentioned earlier, because Pennebaker and Chung focus solely on texts of al-Qa'ida's leaders provided to them by the FBI and did not corroborate their sample with other



**Figure 1.** Bin Laden and al-Zawahiri’s exclusive word usage (except, but, without) (from. 1988 to 2006).  
 Source: Pennebaker and Chung (2009, 457)



**Figure 2.** Bin Laden’s exclusive word usage in the FBIS archive (from 1994 to 2004).

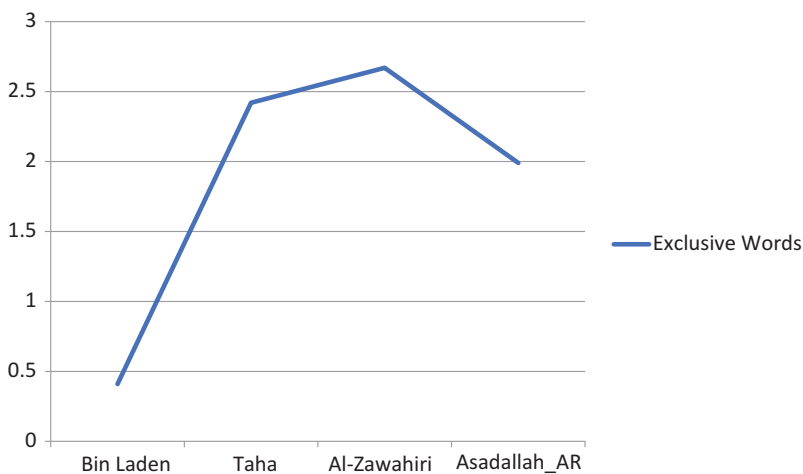
available samples at the time, such as those in the FBIS corpus, their findings appear relatively skewed. Consider the FBIS texts that I have run through LIWC’s exclusive-word processing and have charted here (see Figure 2).

Rather than demonstrating a steady increase in thinking complexity from 1988 to after 9/11, as the authors suggest their FBI corpus demonstrates, LIWC’s scan of FBIS texts represents bin Laden thinking in much more variable ways and at a substantially lower mean over time – averaging 1.9 rather than 2.72, a figure that roughly matches that of the audio recording archive of 1.87. The FBI collection’s greater frequency of exclusive-word usage suggests the existence of different principles of text selection and translation. While we can only speculate on what these might be, given the text corpus’s restricted dissemination, FBI text processing seems to have made al-Qa’ida smarter.

Second, the authors' overlook their own finding that al-Qa'ida's thinking is comparatively less complex than other extremist groups.<sup>24</sup> Instead, they foreground an image of bin Laden, 9/11 mastermind, as a complex thinker par excellence, at least – and this is a far more qualified claim – when compared to al-Zawahiri. “Meaning extraction” may be a computerised process; reporting data, however, requires narration. With narration comes a certain cultural and occupational baggage – what historian Hayden White (1987, 13) once glossed as structures of legality and authority – that the authors seem unaware of. 9/11 masterminds *may* be more complex and cunning than extremist predecessors who were non-Muslim, non-religious and less cosmopolitan than they, but then again, they have tended not to be. The FBI text corpus's higher rating for complex thinking suggests that such a narrative may have proven less appealing to the agency and associated funders.

Last, but not least, the authors' argument that exclusion-word frequency tends to accompany greater cognitive complexity leads to troubling inferences when divorced from “pragmatic life”. When I use LIWC to count exclusive words in the FBIS corpus, for example, al-Qa'ida's thinking appears to have become significantly *less* complex in the year before the 9/11 attacks (1.32, 0.41, 0.54) and higher than ever (4.55) right after the attacks. The audio recording archive yields similarly low comparative scores in the 4 years before 9/11. Should we conclude *prima facie* that the terrorists planning attacks dulled their cognitive sensibilities beforehand and then honed them afterwards? Absurd syllogisms aside, I suggest that the reasons for bin Laden's ostensibly diminished thinking skills before the attacks are attributable to performance constraints in two very different speech events: the first at an Afghan-Arab press conference in which he deferred to scholars and political analysts far more qualified than he to speak in public (Figure 3), and the second his son's own wedding, where he gave a speech that made guests feel welcome and included.

After the attacks, bin Laden's speech featured many exception words because it was, in fact, a re-release of an ABC Nightline News interview he gave in May 1998. When



**Figure 3.** Exclusive word usage by bin Laden and three other speakers on 21 September, 2000 (from the FBIS archive).

asked repeatedly about his position towards the United States, bin Laden prefers third to second-person plural so as to avoid accusing ABC anchor John Miller himself of wrongdoing. Unfortunately, consideration of such performance constraints is not only impossible when using the LIWC algorithm, but is actively suppressed by developers' insistence on the time-saving efficiency and reliability of its quantitative assessments.

### *Third-person plural usage*

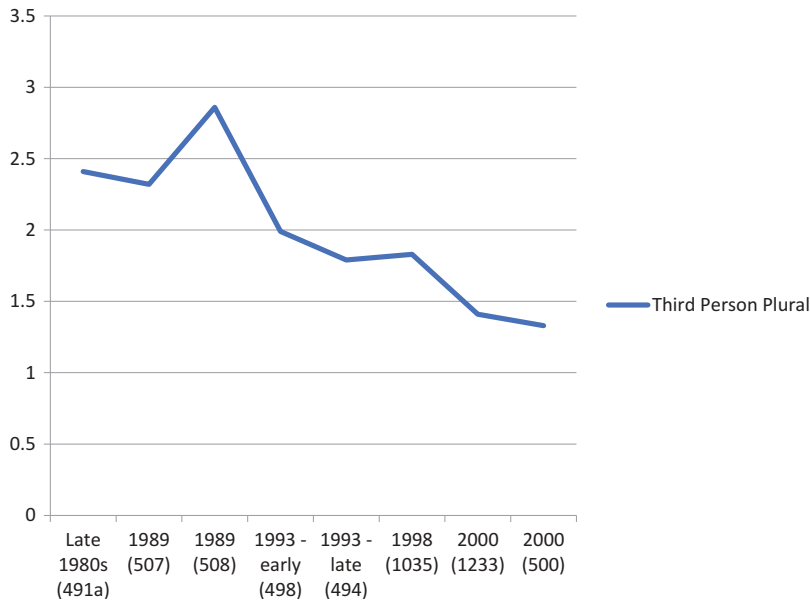
If LIWC's translation of extremist thought is deeply flawed in the case of individuals, its processing is no more illuminating when used to categorise extremist *group* thinking.<sup>25</sup> "The best single predictor of extremism as rated by independent judges", the authors suggest, is the third-person plural pronoun (Pennebaker and Chung 2009, 455). Problems arise when authors align pronominal deictics with conventionally ascribed social collectivities. "They" or "them" typically designates some outside group, they assert; among extremists this group is framed in terms of binary opposition.<sup>26</sup> To be sure, LIWC produces findings that, in comparison to those generated from a study of mostly non-Muslim extremist groups conducted elsewhere, suggest al-Qa'ida's third-person plural scores to be higher (2.17 and 2.29 vs. 1.43).<sup>27</sup> The authors identify the target of al-Qa'ida's wrath as liberalism itself: they categorise bin Laden and al-Zawahiri's speeches according to primary target audiences, either "Muslim" or "Western", as if these two identities are mutually exclusive (*ibid.*, 458). "When addressing fellow Muslims", they state, "bin Laden and Zawahiri made reference to 'them'" more frequently; the researchers add, to clarify, that this pronominal class is invoked always "in reference to Westerners" (*ibid.*). Conversely, when speaking to Westerners, third-person plural usage is said to drop just as references to "we" – presumably the besieged in-group – increase.

At first glance, LIWC's scan of the audio recording and FBIS archives confirms the authors' argument. Bin Laden's third-person plural usage dropped in audio-recorded speeches over 12 years as his audiences expanded to include increasing numbers of people who didn't speak Arabic and weren't Muslim (see [Figure 4](#)) – the authors' argument suggests that as bin Laden increasingly talked to "them", he talked less and less *about* "them".

This conclusion is troubled by a closer reading of bin Laden's statements, however. Such analysis is possible given access to several other data corpuses that have been made publicly available. In bin Laden's audio-recorded speeches especially, third-person plural pronouns refer largely not to "Westerners" or some nefarious "outside group", but rather to an in-group of ideal as well as conflicted Muslim selves. These pronouns are used instead of second-person plural ("we") because the social collectivities that are evoked typically lived in the past: they include righteous believers in the time of the Prophet Muhammad and Islam's first few generations, more contemporary men and women who struggled on God's path, such as Arab Afghans, and also "hypocrites" (*munafiqun*), those who, although believers at one point, turned from God's light with disastrous consequences that remain a lesson for yet-uncommitted Muslims living today.

In a 1989 speech entitled "Our Present Reality" (*Waqi'una al-Mu'asir*) delivered in Saudi Arabia, for example, bin Laden urges his listeners to militancy by reminding them





**Figure 4.** Bin Laden's third-person plural usage in audio-recorded speeches (late 1980s–2000).

of errors that were made by Muslims shortly after the Prophet Muhammad's death, in CE 632, when they questioned the leadership of Islam's first Caliph, Abu Bakr al-Siddiq:

Hypocrisy spread in Medina as Muslims became the flabbiest of sheep at pasture on a soggy night. Indeed, when the Arab delegations arrived, they were optimistic until they heard that Abu Bakr, may God be pleased with him, was not going to exempt them from the duty of almsgiving. Their spokesperson exclaimed "We obeyed the Messenger of God as long as he was among us. But who is Abu Bakr [to claim this right], O slaves of God?" [... Speaking to Abu Bakr later, 'Umar Ibn al-Khattab said] "O Successor to the Messenger of God: proceed gently with them, proceed gently for the people were only recently in the Age of Ignorance".<sup>28</sup>

Hypocrites are "they", bin Laden states, but so too they have been "we". Early in bin Laden's career, such references proliferated, no more so than in his late 1980s speeches designed to recruit Muslim warriors for jihad in Afghanistan and beyond – hence the declining line on my graph. My recent book explores the ways in which al-Qa'ida's discourse has been far more about other Muslims than it has been about America or the West, whatever global news networks and their translators have averred. Before 9/11 as well as afterwards, bin Laden and his supporters used the third-person plural mostly to isolate, discipline and target self-identified Muslims, especially those perceived to be corrupt authoritarian leaders.

Given such a tendency, we need to revisit the way narratives about Al-Qa'ida's no-shades-of-gray, Islam/West binarism assumes such gargantuan proportions and the uses to which these narratives are put. Psychologist Jerrold Post, founder of the CIA's Center for the Analysis of Personalities and Political Behavior, argued in 1990 that the regularity of demonising binaries in terrorist rhetoric vouchsafed the existence of common personality "characteristics" and "tendencies" that could provide guidance to analysts when

they lacked evidence of a “terror network with a central staff providing propaganda guidance” (26). Four years later, such network theory was at the centre of US federal prosecutors' arguments as they began trying to indict bin Laden in his absence on charges of conspiracy in abetting the 1993 World Trade Center attack. The very idea of al-Qa'ida in the mid-1990s was given shape and momentum through these narratives, whatever claims have been forwarded since that al-Qa'ida was a secret organisation unknown to the US government (Barker 2013).

### Counter-liberalism's predictive logic

In the early 1970s, terrorism was seen as a problem to be addressed through law and diplomacy between states. Efforts to prepare for future attacks were restricted to simulations and “incident” scenarios in which first responders, experts and policymakers coordinated activities with the aim of minimising harm and enhancing preventative measures. By the 1990s, however, as outlined by Stampnitzky (2013, 91–9), such gaming took on an increasingly speculative cast. Confronting an international enemy that had been unmoored from older Cold War alignments, counterterrorism analysts aimed to truly “outthink” an adversary who was presumed to be irrational, unpredictable and possibly capable of transcending the logic of the game itself. Epitomised in the guise of the “religious terrorism” whose perpetrator no longer sought rational political ends and whose emotions and sacred commitments confounded the law-enforcement community's traditional methods of prevention, the new enemy was best understood through statistical correlations freed from logical contexts. Along with the utility of computer-assisted machine-learning and big data came an emphasis on deterrence and even possible pre-emption, since the outright prevention of attacks was considered to be no longer realistic.

According to Pennebaker and co-authors, the contribution of algorithms to predicting adversarial behaviour stems from earlier models of social integration that link collective thought and behaviour with individual aptitudes to fit in and find meaningful purpose in life. In developing LIWC and its predictive templates, Pennebaker's team finds recourse not only to a plethora of studies by psychologists using text analysis to anticipate unhealthy somatisation, depression and schizophrenia, all correlated with suicide, but also to studies of deception, a behaviour that while certainly associated with social maladjustment also varies a great deal cross-culturally. Computer-assisted text analysis, one study reports (Newman et al. 2003), shows patients who avoid truthful communication to exhibit a higher frequency of negative-emotions, fewer references to oneself or even to others, and diminished cognitive complexity, all of which are measurable as a percentage of function words. Such words are “very, very social”, an expression of linguistic styles operating far below individual awareness or control. They are also “stealth words”. offering analysts extraordinary insight into what speakers are likely to think or do in the future (Pennebaker 2011b, 23).

The theory and methodology supporting the work of Pennebaker and colleagues is grounded in scientific standards advanced by psychologists across the world. I have troubled the ways in which such research is employed, however, in the study of extremists, in particular. “Although the current project draws heavily on the deception literature”, Pennebaker notes in the *Dynamics of Asymmetric Conflict* volume (2011a, 93),

“it is ultimately more inductive. That is, various language dimensions based on raw function words and algorithms of groups of function words were correlated with group membership and predictors of violent behaviors”. Problems with induction arise not solely when one’s chief sponsors, such as the Department of Homeland Security, assign group membership to organisations identified as “nonterrorist” by highly ideological security priorities. In vain does Pennebaker try to bestow credibility to the venture, arguing, as he does, that the distinction between “terrorist” and “nonterrorist” groups is isomorphic with that, more familiar to psychologists, between “violent” and “non-violent” groups (*ibid.*, 94). What exactly would one learn if, invited to study Hezbollah terrorism, one focused only on violence to the neglect of the organisation’s extensive social networks and recruitment strategies?

The shortcomings of LIWC algorithmic graphemes are never greater, however, than when developers allege the commensurability of extremist text corpuses with those generated elsewhere in the course of their professional work as psychologists and social scientists. Under what pretences could a file of extremist writings and oratory, curated and monitored by a consortium of law-enforcement, intelligence, and news agencies, be considered equivalent to text documents produced by subjects in psychological tests designed to facilitate therapeutic treatment and recovery? I have shown, in this article, why LIWC developers’ insistence on a substrate of “natural language” and “function words” proves threadbare.

The topic of disclosure has a long history; it turns out, not only in psychology but also in studies of Kantian aesthetics and truth. Insofar as the 9/11 attacks and their American-led narratives afterwards worked aesthetically to obscure political, cultural and economic ties that bound Western audiences with the attackers and their associates, a study of textual analysis in a war against “terrorist violence” can help excavate the ways disclosure continues to function in the ethics and politics of liberalism. Religion scholar Catherine Pickstock (2005) argues that the secular project is constituted through “positive revealed disclosures” in which postmodern instruments of reason presuppose binarized dualities, such as that between God and theology, but then offer ways to presumably overcome them without engaging their material histories.<sup>29</sup> Disclosure does much work, I argue, through currents of modern Western psychology that focus on diagnosing terror. Jerrold Post (1990), several decades ago, located the motivations of terrorism in disparate instances of “childhood trauma”, the results of which lead to “externalisation” and “splitting”, classic defence mechanisms that externalise and reify a bad “not me” rather than incorporating it into a more healthy integrated self.<sup>30</sup> Through his pioneering work in computer-assisted text-analysis, James Pennebaker has won recognition as a top researcher on disclosure from leading scientific communities, foremost among them the American Psychological Association (c.f. Pennebaker 1995; Wapner 2008).

If Post and Pennebaker are analysts and bin Laden and Zawahiri their subjects, disclosure made possible through LIWC’s translation aborts possibilities either for patient healing or therapeutic care.<sup>31</sup> As Muslim subjects doubly vexed by being extremists, bin Laden and Zawahiri lack what Eric Santner (2001, 9) calls “internal alterity”, an ability to experience being “a stranger, and not only to me but also to him – or herself”. Exclusion words and third-person plural pronouns, as I have shown, signify difference less from Westerners or a demonic “not me” than from other self-

identified Muslims. Shades of such difference are instrumental to struggling believers as they work to distinguish right from wrong, good from bad, allies from enemies, today's struggle from tomorrow's war. Assignations of sociality and ethics, moreover, occur within a world of shifting political and material relations in which countries including the United States have been intimate partners and not only adversaries. Fantasies of disclosure that presuppose a homogeneous cultural or religious counter-liberalism among Muslims misrecognise the dynamics of extremism within a transnational system of capital management and sovereignty. Worse, pace Edward Said, these fantasies mask their own historicity, obscuring the ways in which documents and facts about extremism arise through reticulated fields of knowledge production.

### **Conclusion: terrorist violence as illiberal securitisation**

In *Custom, Law, and Terrorist Violence* (1977, 36), anthropologist Edmund Leach presciently excavates the ways in which distinctions between rulers and rebels, good laws and bad customs, public order and irrational sectarianism are erected and managed through discourse about terrorist violence that has deep cultural roots. In Western societies, "counterterrorism" had become, "in a bizarre sense, a religiously sanctioned moral duty". Taking cue from Leach's observations on the disciplinarity of knowing and perceiving "Others", I have argued that terrorist violence securitises through metadiscourse rather than referentiality. It organises talk about violence in order to influence the perception, analysis and sense-making of violence and its perpetrators. Different than discourses of terrorism, the phenomenon of terrorist violence solicits an especially active response from readers and analysts: by indexing a dynamic and uncertain form of violence that is at once different from "ordinary", non-terroristic violence and yet still underdetermined, the phrase calls for heightened powers of assessment and affirmation.

On the one hand, those charged with making sense of terrorist violence are invited to help recognise and recall the particular histories of civilisational comportment and communality that condition violence which, in accordance with the phrase, transcends normative boundaries of contestation over legitimate coercion as arbitrated by the modern state system. Whether in Houston, Paris or some space between them, transnational and national imaginaries are invoked and with them sensibilities of class, race, ethnicity and gender. At the same time, a rational consideration of terrorist violence, so often inaugurated by the concept, asks for deferred judgement about the nature of, or reasons behind, violence related to terror on the premise that state and international legal norms governing the legitimate use of violence fail to circumscribe the proper capacities of the state to regulate and explain terrorism. Where sovereign powers along with their military and civilian instruments of coercion are deemed unable to regulate violence effectively, invitation is extended to a new cadre of security experts that can help interpret and arbitrate the boundaries between legitimate and illegitimate violence.

By focusing on a single algorithm, I have delved further into the ways in which knowledge of terrorist violence becomes subject to particular cultures of securitisation. Algorithmic modelling involves principles that differ from those employed by scientists, as noted by other scholars (Amoore 2009, 54; Rouvroy 2016; Lemov 2015). Given the ways big data is designed to expand constantly, for instance, the results of modelling are not meant to be replicable. Algorithms are not about the truth. Historian of science,

Antoinette Rouvroy, notes that, as self-learning mechanisms capable of producing unexpected solutions, offering radical new models and presenting phenomena that are said to be unavailable to direct observation, algorithms are valued for their utility and optimisation. “Faith in the objectivity, effectiveness and operationality of algorithmic predictions”, notes Rouvroy (2016, 13), “overrides the process of critical evaluation of what is more often than not presented as a recommendation or automated-decision support system”. In this article, I have traced the susceptibility of algorithms to traditions of secular liberalism that mask and therefore perpetuate ongoing forms of racialised violence and empire.

The appeal of algorithmic modelling of terrorist violence among scholars and analysts interested in Muslim militants or activists is threefold. First, insofar as modelling relies on data sets produced, managed and authorised by professionalised security experts whose professional and financial standing is linked closely to state power and claims to sovereign exceptionalism, algorithms yield predictive analytics guaranteed to support “success”, however formulated (de Goede, Simon, and Hoijtink 2014). Al-Qa’ida is, in the present case study, “different” than other Islamic militant groups. It is smarter, more adaptive, more complex, more determined and so forth. “If only we had known, before the attacks, what the algorithm has revealed to us now”, the study’s chief sponsors imply. Second, when turned to the study of terrorist violence, algorithms used to study Muslim extremist violence show how and where violence erupts from within the state, not just outside or beyond it. Analysis of terrorist violence thus becomes instrumental to securitisation: one must discipline oneself even more, since state law and regulatory mechanisms clearly aren’t up to the task. Constructing an “architecture of enmity” begins with discovering patterns in thinking, behaviour, affect and expression that warrant the everyday securitisation of bodies and geographies *within* (Amoore 2009, 54).<sup>32</sup> Third, these algorithms purport to quantify and objectify the difference of religion, Islam specifically. They extend an illiberal state’s disciplinary metrics to communities whose racial, ethnic, economic and citizenship categorisations already ensure vulnerability to state security regimes, many of them implemented in the name of neoliberal market reform. They inaugurate new competences in a venerated field of security hermeneutics.

## Notes

1. As guest editor, Allison Smith (2011, 88) acknowledges that “In 2005, the UN Security Council 1267 Committee added MIRA to its list of individuals and entities belonging to or associated with the Taliban and the al-Qa’ida organization, and the US Treasury designated MIRA as providing material support to al-Qa’ida”. US Executive Order no. 13,224, issued around the same time, reiterated the group’s financial and material support of al-Qa’ida. Such designations ensured MIRA’s legal categorisation as a terrorist organisation on multiple fronts. In 2012, a year after the journal was published, MIRA’s leader Saad al-Faqih was removed from the UN Security Council’s terrorist list. US and Saudi officials remained unimpressed.
2. This finding was procured through searches using Proquest Historical Newspapers (*The New York Times*), Google Books, Google Scholar, ProQuest PAIS International, Legaltrac, PsychInfo, JSTOR, Early English Books on Line and the American Indians and the American West, 1809–1971.

3. C.f. Chinese communist insurgency near Shanghai (Abend 1932, 6); Austrian Deutsche-Front collaboration with state police ("Saar Territory" 1934, 1171); and Indian National Congress sympathies for civil disobedience (French 1937, 472).
4. Usage of the phrase "terrorist-violence" increased by 1975% over the 2001–2017 period versus 1686% for the word "terrorism". In raw figures, there were 83 mentions of the former term versus 8271 for terrorism, whereas between 1981 and 2000 there were only 4 and 463 mentions, respectively.
5. This assessment is based on statistics from disciplinary databases of important works and papers, as well as specific disciplinary journals. When comparing mentions of the phrase "terrorist violence" between 1 January 1981 and 31 December 2000 with the period from 1 January 2001 to 5 March 2017, JSTOR databases of journals, for example, reveal a 900% increase in psychology (as measured in 43 journals) versus 300% in religion (170 journals), 102% in political science (347 journals), 83% in sociology (209 journals), 80% in Middle East Studies (82 journals) and 40% in law (189 journals).
6. For Bruno Latour (2005, 28–9), "enrolment" explains the ways in which forms of social life and social actors so often considered real and objective by social scientists, psychologists and other scholarly communities are, in fact, integral components of ongoing, uncertain and ever-shifting relations between groups.
7. According to Google Scholar (on 5 July 2017), LIWC's findings have been cited on 6380 occasions, favourably in every instance from what I can tell. Terrorism studies publications, often commending Pennebaker's incisive content analysis, include Altier (2012), Barker (2009), Brynielsson (2013), Glasgow (2014b), Weinstein (2009).
8. Professor Merari was chair of Tel Aviv University's Department of Psychology at the time. Earlier studies drawing on modern psychology to argue for Muslims' special deviancy include Glidden (1972), Patai (1973), Lewis (1976), Kaplan (1979), Mullany (1980), Sirrala (1980).
9. Writing in the *Journal of American Psychiatry*, Harold Glidden (1972: 985–7), for example, a US State Department official in charge of the Near East Division of the Bureau of Research and Intelligence, contrasts Arab-Islamic "shame" and its consequence incentive for "revenge" with Jews' and Western Christians' emphasis on mere "guilt". For humiliation, see Alderdice (2005); for vulnerability, see Lachkar (2006).
10. See Stampnitsky (2013: 23–6) for an overview.
11. Word count based on the 2015 English LIWC dictionary.
12. <http://liwc.wpengin.com/> (accessed 23 August 2017).
13. <http://www.analyzewords.com/> (accessed 23 August 2017).
14. C.f. works by Louise Amoore and Antoinette Rouvroy, discussed in the final section of the article. The Social Media Collective, founded in the United States in 2009, has helped give shape to the field of critical algorithm studies. Its introductory reading list can be found at <https://socialmediacollective.org/reading-lists/critical-algorithm-studies/> As noted by Tarleton Gillespie (2014, 68), "What we need is an interrogation of algorithms as a key feature of our information ecosystem [...] and of the cultural forms emerging in their shadows [...] with a close attention to where and in what ways the introduction of algorithms into human knowledge practices may have political ramifications".
15. Personal communication with James Pennebaker, 11 September 2008.
16. Following the *Merriam-Webster* dictionary, liberalism can be defined as "a political philosophy based on belief in progress, the essential goodness of the human race, and the autonomy of the individual and standing for the protection of political and civil liberties; specifically: such a philosophy that considers government as a crucial instrument for amelioration of social inequities (such as those involving race, gender, or class)". In this article, liberalism celebrates the triumph of the secular over religious sentiment and its dark twin, extremism.
17. Bin Laden's 1996 "declaration" of war, for example, was originally penned as a "letter" (*risala*), becoming the former only after revisions in light of an interview with the British journalist Robert Fisk (see Miller 2015, 250–1).

18. Disclosure hinges on emotionalism: those who write about emotional topics are more likely to experience improved physical health than those who write on superficial topics (see Campbell and Pennebaker 2003). Key to healthful recovery is developing a personal narrative (see Stone and Pennebaker 2002).
19. Although a career psychiatrist, Post's credentials as a pioneering psychologist are affirmed widely by leading scholars in security studies, political science, engineering and psychology itself (c.f. the first 20 entries on Google Scholar when searching with the keywords "psychologist Jerrold Post". Search conducted on 20 June 2018).
20. For several benchmark analyses of shortcomings in psychological studies of militant extremism, see Victoroff (2005) and Riech (1998). As Colin Wight (2009) notes, what most psychological studies miss is the point that any concept of terrorism already implies the concept of the state and hence cannot be understood without an accompanying theory of political communication.
21. Online catalogue available at: <http://hdl.handle.net/10079/fa/mssa.ms.1880>.
22. Available at <http://www.fas.org/irp/world/para/ubl-fbis.pdf>.
23. My data set does not include al-Zawahiri's discourse. According to the authors (Pennebaker and Chung 2009, 459), the texts by both al-Qa'ida leaders feature an average word count of 2495.4, for 42 "statements" and 3329.2 words for 10 "interviews". Given that 36 of 58 texts (62%) were authored exclusively by bin Laden, the total word count for his material alone can be estimated to be 87,741.
24. With exception-word averages of 2.72 and 2.62 for bin Laden and al-Zawahiri, respectively, versus 3.17 for an assembly of extremist speeches studied by psychologist Allison Smith in 2004.
25. Among the authors' assertions about al-Qa'ida's distinctive group identity is that they "pay less attention to past events" than other groups studied by Allison Smith in 2004. LIWC's processing of the audio recording archive reveals the "past" score – a mean percentage of total past-tense words per text file – to be higher (at 3.45) than that in Smith's corpus (2.94) in all but three cases, two of them in bin Laden's latest speeches in this archive (in 1998 and 2000). The FBIS archive's "past" score is 2.41 with a decline from higher scores in earlier years. Global print and electronic media appear to have made bin Laden less concerned with the past. This finding mirrors arguments by Western counterterrorism officials and Arab state leaders alike that al-Qa'ida represents a "new terrorism" different from earlier forms and especially foreign to traditions of Islamic thought and orthopraxy.
26. "Al-Qa'ida's sense of identity is more strongly defined through an oppositional group or government, as indicated by their higher use of third person pronouns" (ibid., 462).
27. The comparative control group is a collection of 166 texts from 17 extremist groups gathered and analysed by Allison Smith (2004).
28. Excerpt from recording no. 507 in the Islamic Fundamentalist Audio Recordings Collection (MS 1880). Manuscripts and Archives, Yale University Library (my own translation).
29. Following much contemporary scholarship, "the secular" is approached here not through a binarisation of religious/non-religious domains but rather as a liberal project with its own religious genealogies, not the least of them Protestant Enlightenment ones emphasising private interiority and "belief".
30. Avner Falk (2008, 139–140) simply identifies bin Laden's "not me" as the United States, binary opposite of the all-good "Muslim *ummah*", and attributes the split to his early abandonment by his mother.
31. Pennebaker and Chung (2009, 464) effectively abdicate professional therapeutic responsibilities upheld in their work elsewhere: "We realise that our interpretations of the meaning extraction results are superficial. This is where the expertise of the intelligence and diplomatic communities is needed. As computer language analysts, we can say which words hang together. Unfortunately, without deep knowledge of the authors and context, we are restricted in knowing what the themes may reflect". In granting intelligence agents and diplomats the authority to truly understand extremist subjectivity, the authors not only sideline contributions from scholars in the humanities or social sciences best suited to



study such a phenomenon but also cede knowledge and the ethics of managing its application to American-led global security regimes.

32. Amoores borrows the term “architecture of enmity” from Derek Gregory (2004).

## Disclosure statement

No potential conflict of interest was reported by the author.

## Notes on contributor

*Flagg Miller* is a Professor of Religious Studies at the University of California at Davis. Author of *The Audacious Ascetic: What the bin Laden Tapes Reveal about Al-Qa’ida* (2015), Flagg focuses on cultures of modern Muslim reform in the Middle East and especially Yemen. His first book was *The Moral Resonance of Arab Media: Audiocassette Poetry and Culture in Yemen* (2007).

## ORCID

Flagg Miller  <http://orcid.org/0000-0001-8159-2236>

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