Cut from the same cloth? Lone Actor Terrorists versus Common Homicide Offenders

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The term "lone actor" has been applied to a variety of violent individuals, including jihadists, right-wing extremists, school shooters, and others whose crimes were ideologically motivated and generated much societal impact. It may be argued, however, that such a classification of this rare subset of violent offenders is an artificial one, based on political perspectives rather than on empirical findings. In this study, we examine and compare characteristics of European single perpetrators or lone actor terrorists to a large sample of European 'common' homicide offenders. Bivariate analysis shows that lone actors are significantly younger, more single, and more educated than homicide offenders. In terms of event characteristics, however, the two groups differ more substantially. Lone actors are more likely to attack 'strangers' in public places and to use firearms, while homicide offenders tend to attack victims they know in private settings and to use more hands-on methods. These differences may be understood through the notion of instrumental versus expressive motivations. Our findings question the classification of lone actors as an entity fundamentally different from our sample of single homicide offenders and call for future in-depth assessments of possible differences in homicidal drive.

ICCT International Centre for Counter-Terrorism - The Hague

Background

Perhaps one of the most puzzling and unpredictable forms of terrorism constitutes violent acts committed by a single individual.[1] Lone actor terrorists are perceived as presenting acute challenges for law enforcement practitioners in detection and disruption.[2] Policy-makers and practitioners across Europe have recognized the prominent place of lone actors in the current terrorist-threat landscape. Although lone actor terrorism in Europe is considered to be a rare phenomenon, in recent years the number of plots seems to be on the rise. Over a fifteen-year study period (2000-2014), there has been a noticeable increase in lone actor terrorism across Europe, albeit not always causing injuries and fatalities.[3] Nonetheless, some recent lethal attacks – all in 2017 – in London (May 22nd, June 3nd, June 19th), Manchester (May 22nd), Paris (April 20th), Stockholm (April 7th) and Barcelona (August, 17th) continue to raise concerns for politicians, law enforcement and society at large.

Definitions of lone actor violence include elements that refer to the "lone" character of the perpetrator(s), the threat or use of political violence, and the absence of direct support and command from a wider network.[4] Scholars, however, tend to interpret the "lone" characteristic quite differently, as definitions of lone actors have spanned from independently operating individuals,[5] solo-actor terrorists (acting alone, but directed and controlled by a larger organization), lone-dyads (a group of two individuals),[6] to small cells (dyads or triads).[7] In this study, we will focus exclusively on single perpetrators, preparing and carrying out the attack alone.

Even though the expression "lone actor" has mostly been linked to perpetrators of terrorism, it also includes school shooters as well as others whose crimes were ideologically motivated and generated much societal impact.[8] Similar to homicide offender populations, lone actors constitute a diverse group when considering the type of violence perpetrated and underlying motivation or ideology.[9] The European Terrorism Situation and Trend Report distinguishes six types of lone actors based on ideology: religiously-inspired, right-wing, left-wing, ethno-nationalist and separatist, single issue and school-attackers.[10] Disaggregating the lone actor population by type is relevant when interpreting and comparing findings. Some studies on lone actors cover a mix of types, while other studies focus on one type of actor specifically. Given the low incidence

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[1] Edwin Bakker and Beatrice De Graaf, "Lone Wolves: How to Prevent this Phenomenon?" Paper presented at the Expert Meeting "Lone Wolves", International Centre for Counter Terrorism – The Hague (November 2010): 2 (http://www.icct.nl/download/file/ICCTBakker-deGraaf-EM-Paper-Lone-Wolves.pdf).

[2] Clare Ellis et al., "Lone Actor Terrorism: Final Report." RUSI Countering Lone-Actor Terrorism Series (2016).

[3] Clare Ellis et al., "Lone-Actor Terrorism: Analysis Paper." RUSI Countering Lone-Actor Terrorism Series (2016).

[4] Ramon Spaaij and Mark Hamm, "Key Issues and Research Agendas in Lone Wolf Terrorism." *Studies in Conflict & Terrorism* 38, no. 3 (2015).

[5] Bart Schuurman et al., "Lone Actor Terrorist Attack Planning and Preparation: A Data-Driven Analysis." *Journal of Forensic Sciences* (2017); Ramon Spaaij, *Understanding Lone Wolf Terrorism: Global patterns, Motivations and Prevention* (Springer Science & Business Media, 2011).

[6] Emily Corner, Paul Gill and Oliver Mason, "Mental Health Disorders and the Terrorist: A Research Note Probing Selection Effects and Disorder Prevalence." *Studies in Conflict & Terrorism* 39, no. 6 (2016); Raffaello Pantucci, "A Typology of Lone Wolves: Preliminary Analysis of Lone Islamist Terrorists." International Centre for the Study of Radicalisation and Political Violence – London (2011).

[7] Edwin Bakker and Jeanine de Roy van Zuijdewijn, "Lone-Actor Terrorism. Definitional Workshop." RUSI Countering Lone-Actor Terrorism Series No.2. (2016).; Marieke Liem et al., "European Lone Actors versus 'Common' Homicide Offenders: An Empirical Analysis." *Homicide Studies* 22, no. 1 (2017).

[8] Jeanine De Roy van Zuijdewijn and Edwin Bakker, "Lone-Actor Terrorism: Policy Paper 1: Personal Characteristics of Lone-Actor Terrorists." RUSI Countering Lone-Actor Terrorism Series (2016); Paul Gill, John Horgan and Paige Deckert. "Bombing Alone: Tracing the Motivations and Antecedent Behaviors of Lone-Actor Terrorists." *Journal of Forensic Sciences* 59 no. 2 (2014).

[9] Ellis et al., "Analysis Paper."; Gill et al., "Bombing Alone."

[10] Europol, *The European Terrorism Situation and Trend Report* (The Hague: Europol, 2016).

of lone actor events, large sample sizes are needed to achieve validity of findings. When it comes to ideology, both in the United States and in Europe,[11] right-wing and religiously inspired attacks are found to be the most prevalent groups of (lone) terrorists.

To increase our understanding of European lone actors, there is a need for more quantitative and comparative criminological research on (various types of) lone actors versus perpetrators of other types of serious violence not directly linked to terrorism, such as 'common' non-ideologically motivated homicide offenders. Such comparative analyses could greatly benefit terrorism studies.[12] So far, with few exceptions,[13] quantitative studies comparing (European) lone actors to homicide offenders are rare. Up till now, from a criminological perspective, we do not know to what extent lone actors and their crimes should be understood as a separate group in terms of event and personal characteristics, or as similar to other types of violent offenders. There are several reasons why we should address this dearth of criminological attention, particularly by homicide researchers, to terrorism. First, like terrorism, homicide is a socially constructed phenomenon.[14] The way in which terrorism or homicide is defined is largely dependent on time period and context.[15] Second, homicide and terrorism are similar in that they can either be symbolic or strategic. Third, for both, we frequently do not know the identity of the perpetrator(s). And, without this knowledge, as Young and Kearns (2017) put forward, how do we then classify lethal attacks as either homicide or terrorism?[16] This may be particularly relevant in the case of lone actor attacks with a low fatality rate.[17] Finally, homicide researchers actually have a long history of examining rare forms of violence, and have noted the importance of considering the heterogeneity in homicide motives.[18]

Building on this context, our study seeks to quantitatively compare lone actors to 'common' homicide offenders in Europe. To the best of our knowledge, until now there have been no prior empirical studies that compared homicides committed by European lone actor terrorists to 'common' homicide offenders in Europe.

Data sources of Lone Actor Terrorism

So far, four datasets have allowed for empirical, quantitative assessment of lone actor terrorism. First, one of the most comprehensive databases is the American Lone Wolf

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[11] Robert A. Fein and Bryan Vossekuil, "Assassination in the United States: An Operational Study of Recent Assassins, Attackers, and Near-Lethal Approaches." *Journal of Forensic Sciences* 44, no. 2 (1999); Gill et al., "Bombing Alone"; Spaaij and Hamm, "Key Issues and Research Agendas."; De Roy van Zuijdewijn and Bakker, "Personal Characteristics of Lone Actor Terrorists."; Liem et al. "European Lone Actors versus 'Common' Homicide Offenders."

[12] Jan Leenaars and Alistair Reed. "Understanding Lone Wolves: Towards a Theoretical Framework for Comparative Analysis." The International Centre for Counter-Terrorism — The Hague (2016).

[13] Joel Cappelan, "Lone Wolf Terrorist or Deranged Shooter? A Study of Ideological Active Shooter Events in the United States, 1970–2014." *Studies in Conflict & Terrorism* 38, no.6 (2015); Jeff Gruenewald, "A Comparative Examination of Far-Right Extremist Homicide Events." *Homicide Studies* 15 (2011); Jeff Gruenewald and William Alex Pridemore, "A Comparison of Ideologically-Motivated Homicides from the New Extremist Crime Database and Homicides from the Supplementary Homicide Reports Using Multiple Imputation by Chained Equations to Handle Missing Values." *Journal of Quantitative Criminology* 28, no. 1 (2012); John Horgan et al., "Across the Universe? A Comparative Analysis of Violent Behavior and Radicalization Across Three Offender Types with Implications for Criminal Justice Training and Education." U.S. Department of Justice (2016).

[14] Fiona Brookman, *Understanding Homicide* (London: Sage, 2005).

[15] Joseph Young and Erin Kearns, "Empirical Challenges to Studying Terrorism and Homicide," in *The Handbook of Homicide*, ed. Fiona Brookman, Edward R. Maguire and Mike Maguire (Chichester: Wiley Blackwell, 2017).

[16] Ibid.

[17] Ibid.

[18] Robert L. Flewelling and Kirk R. Williams, "Categorizing Homicides: The Use of Disaggregated Data in Homicide Research," in *Homicide: A Sourcebook for Social Research*, eds. M. Dwayne Smith and Margaret Zahn (Thousand Oaks: Sage Publications, 1999). cf. Gary LaFree and Jeff Gruenewald, "The Intersection of Homicide, Terrorism, and Violent Extremism." *Homicide Studies* 22, no. 1 (2018).

Terrorism Database (ALWTD), constructed and maintained by Hamm and Spaaij (2015).[19] In the year 2015, this dataset included a total of 98 cases on lone actors in the United States, covering the period 1940-2013. Offenders who belonged to a terrorist organization or network are excluded from the dataset. Emphasizing that there is no single 'profile', the majority of the individuals in their dataset were unemployed, single White males with a criminal record. Compared to members of terrorist groups, the authors found lone actors to be older, less educated and more prone to mental illness.[20]

A second large-scale dataset on so-called ideologically motivated homicide offenders constitutes Gruenewald and Pridemore's (2012) dataset of 108 far-right homicides based on the Extremist Crime Database (ECDB), a comprehensive open-source database that includes information on ideologically motivated homicides, regardless of motive, committed by domestic far-right extremists and terrorists in the United States between 1990 and 2008.[21] The authors found perpetrators of far-right terrorist homicide more likely to be single White males, mostly using firearms on victims who were strangers to them.

Other comparative research using the ECBD dataset on 139 attacks (47 loner/small cell, 92 group-motivated), also conducted by Gruenewald, Chermak and Freilich (2013), concentrated on distinguishing far-right lone actor homicides from other domestic far-right violence in the United States.[22] Their findings showed that their sample of lone actors were "both different and surprisingly similar" to other far-rightists who had connections to extremist groups. Variables that significantly distinguished the far-rightist loners from far-rightists who did not act alone included a higher proportion of military backgrounds, the use of guns, on average being older, more likely to be single, more likely to suffer from a mental illness, and having a higher prevalence of suicide missions.[23]

Third, Gill et al. (2014) were able to collect data on 119 US and European lone actor terrorists who committed an attack in the time period 1990-2012, and analyse the socio-demographic characteristics and antecedent behaviours leading up to their planning or conducting a terrorist event.[24] Their sample included both individual terrorists (with and without command and control links) and isolated dyads. Data were retrieved from the Global Terrorism Database and open sources such as LexisNexis. Based on this dataset, lone actors were found to be mostly male, about half of them single, forty percent unemployed and about half of them socially isolated. As for ideological motivation, single-issue offenders were more likely to be mentally ill, previously convicted and socially isolated. Compared to other groups (single issue or Al-Qaeda related) in their study sample, right-wing offenders were more frequently unemployed. Al-Qaeda inspired lone actors were found to be younger than their lone actor counterparts. Further, a subgroup of 87 lone actors acting autonomously without any help or guidance from a group were more likely to have military experience, to hold single issue or right-wing beliefs, to experience social isolation or suffer from mental illness, compared to offenders in isolated dyads or lone actors trained or equipped by a group. Recently, Schuurman et al. (2017) performed an in-depth analysis on a subset of Gill et al.'s dataset focusing on attack planning and preparation of 55 lone actors.[25] About half of them had

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[19] Mark Hamm and Ramon Spaaij, "Lone Wolf Terrorism in America: Using Knowledge of Radicalization Pathways to Forge Prevention Strategies." US Department of Justice Report (2015).
[20] Ibid.
[21] Gruenewald and Pridemore, "A Comparison of Ideologically-Motivated Homicides."
[22] Jeff Gruenewald, Steven Chermak and Joshua D. Freilich, "Distinguishing "Loner" Attacks from Other Domestic Extremist Violence." *Criminology & Public Policy* 12, no. 1 (2013).
[23] Ibid.
[24] Gill et al., "Bombing Alone."
[25] Schuurman et al., "Lone Actor Terrorist Attack Planning."

a history of violence and were generally poor at maintaining operational security. Surprisingly, these lone actors actually upheld social ties that were crucial to their adoption and maintenance of the motivation and capability to commit violence. Therefore, the authors argue for a re-evaluation of the "lone actor" concept.

A fourth dataset on lone-actor terrorists in Europe constitutes the recently constructed Countering Lone-Actor Terrorism (CLAT) Project.[26] The researchers identified 120 cases of lone actor terrorism (single perpetrators and small cells) in Europe between 2000 and 2014 based on open source information and interviews with national security experts. Overall, European lone actors were predominantly male, in their 30s, and had completed at least secondary education. One third of the lone actors showed indications of previous violence. More than one third had an indication of mental illness, and one fifth of the lone actors was socially isolated. Given its European focus, in the study at hand we will partly rely on the data collected in the CLAT project, and use a subset of perpetrators who act alone.

Comparing lone actors to 'common' homicide offenders

Few studies have compared lone actor terrorism to other types of violence, political or otherwise.[27] Much of the literature that does exist on lone actors focuses on psychological factors[28] and, specifically, on individual personal or dispositional factors,[29] but there is very little quantitative analysis, and even less comparative research, assessing lone actors versus non-ideologically motivated violent offenders, such as 'common' homicide offenders.[30] Comparative research into lone actor terrorism mostly focuses on distinguishing lone actors from those who undergo radicalization in a group setting,[31] or comparing lone actor terrorists with other violent individuals acting alone, such as so-called school shooters.[32]

There are, however, some noteworthy comparative studies to be mentioned. These empirical studies compared ideologically motivated to non-ideologically motivated violent offenders; focusing on far-right extremists,[33] and school shooters.[34] However, these studies did not specifically focus on lone offenders. Gruenewald (2011), for example, studied 248 homicide events perpetrated by far-right extremists in the period 1990-2006 in the United States, using open sources and official data.[35] Although not specifically focusing on lone actor terrorists, he assessed similarities and differences between far-right extremist homicide offenders and 'common' homicide offenders. A finding of interest was the relatively high proportion (more than half) of far-right

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26 Ellis et al., "Analysis Paper."
27 Randy Borum, Robert A. Fein and Bryan Vossekuil, "A Dimensional Approach to Analyzing Lone Offender Terrorism." *Aggression and Violent Behavior* 17, no. 5 (2012); Charles A. Eby, "The Nation that Cried Lone Wolf: A Data-Driven Analysis of Individual Terrorists in the United States Since 9/11." DTIC Document (2012); Gruenewald et al., "Distinguishing "Loner" Attacks."; Clark McCauley, Sophia Moskalenko and Benjamin van Son. "Characteristics of Lone-Wolf Violent Offenders: A Comparison of Assassins and School Attackers." *Perspectives on Terrorism* 7, no. 1 (2013); Spaaij, *Understanding Lone Wolf Terrorism*.
28 Eby, "The Nation that Cried Lone Wolf"; McCauley et al., "Characteristics of Lone-Wolf Violent Offenders."; Sophia Moskalenko and Clark McCauley, "The Psychology of Lone-Wolf Terrorism." *Counselling Psychology Quarterly* 24, no. 2 (2011); Jeff Victoroff, "The Mind of the Terrorist: A Review and Critique of Psychological Approaches." *Journal of Conflict Resolution* 49, no. 1 (2005).
29 Borum et al. "A Dimensional Approach."
30 Gruenewald et al., "Distinguishing "Loner" Attacks."
31 Petter Nesser, "Research Note: Single Actor Terrorism: Scope, Characteristics and Explanations." *Perspectives on Terrorism* 6, no. 6 (2012); Spaaij and Hamm, "Key Issues and Research Agendas."
32 McCauley et al., "Characteristics of Lone-Wolf Violent Offenders."
33 Gruenewald, "A Comparative Examination of Far-Right Extremist Homicide Events."; Gruenewald and Pridemore, "A Comparison of Ideologically-Motivated Homicides."
34 Capellan, "Lone Wolf Terrorist or Deranged Shooter?"
35 Gruenewald, "A Comparative Examination of Far-Right Extremist Homicide Events."

homicides that involve multiple offenders compared to 16 percent of 'common' homicides. Their results also showed that far-right homicides involve victims that were strangers or somebody the offender knew superficially. Perpetrators of far-right homicides were mostly White men in their mid-30s, as opposed to 'common' homicides that were for a large part committed by younger men of African American descent.

Also, Gruenewald and Pridemore's study (2012) compared 108 far-right motivated homicides to 540 'common' homicides.[36] Domestic far-right extremists in the United States were found to be more likely to be male, White, to commit the homicide with others, to victimize strangers, to use other methods than firearms, and to kill multiple victims compared to offenders of 'common' homicides. Further, Capellan (2015) looked into "ideologically active shooters" and compared them to non-ideological shooters, based on US data from the period 1970-2014.[37] The analysis of 282 cases showed similarities between the two groups in personal background, as the majority of both groups tended to be White males in their 30s, approximately 50 percent of them suffering from mental illness. Both were single or divorced, unemployed, and had only obtained low levels of education. Ideological shooters were significantly more likely to have a criminal record than their non-ideological counterparts. Also, ideological shooters attacked strangers, injured and killed more victims, while non-ideological shooters attacked targets to which they had a professional relationship. In both groups between 30 and 40 percent of the offenders committed suicide.

Recently, research by Horgan et al. (2016) compared 71 lone actor terrorists to 115 solo mass murderers in the United States between 1990 and 2015, using the GTD as one of the main sources of information.[38] The study found no significant differences between both groups in terms of socio-demographic profiles. Individuals in both groups were on average in their late 30s, predominantly male, and about 40 percent of them were single. Two thirds of the lone actors had a higher level of education, yet, later in life about 40 percent was unemployed. Mass murderers were less educated, and about one third were unemployed. Lone actors appeared to be more socially isolated, and had combat and military experience. Mass murderers were more likely to have a history of substance abuse and to experience long-term stress compared to lone actors.

In this study, we seek to describe event- and personal characteristics of a European population of single perpetrators who committed ideologically motivated attacks. Further, we aim to compare this group to single perpetrators of non-ideologically motivated homicide. This study fills existing research gaps to examine how personal and event characteristics of European lone actor terrorists compare to European 'common' or 'routine' homicide offenders. The aforementioned studies were mostly based on data stemming from the United States. To the best of our knowledge, until now there have been no prior comparisons of lone actor terrorists to 'common' homicide offenders in Europe specifically.

Method

We used a case-control design to compare characteristics of lone actor terrorists to a control group of single perpetrators of 'common' (non-ideologically motivated) homicide. To this end, we used data from two separate datasets: One dataset on European lone actors, and one dataset on European homicide.

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[36] Gruenewald and Pridemore, "A Comparison of Ideologically-Motivated Homicides."
[37] Capellan, "Lone Wolf Terrorist or Deranged Shooter?"
[38] Horgan et al., "Across the Universe?"

Definitions

Following prior research, lone actor terrorism was defined as "the threat or use of violence by a single perpetrator, not acting out of purely personal or material reasons, with the aim of influencing a wider audience, and who acts without any direct support in the planning, preparation and execution of the attack, and whose decision to act is not directed by any group or other individuals (although possibly inspired by others)".[39] For the purpose of this paper, we used a subset of single perpetrators, excluding dyads and triads.

Homicide is defined as: *an intentional criminal act of violence by one or more human beings resulting in the death of one or more other human beings*. Following prior research, this definition covers the legal codes of murder, manslaughter, infanticide and assault leading to death.[40]

Data Sources

Data stemming from the Countering European Lone Actor Terrorism Project

We relied and expanded on previously collected data on lone actor terrorists in the context of the EU-funded 'Countering Lone-Actor Terrorism' (CLAT) project.[41] For a more detailed argumentation on choices made regarding (1) the use of media sources, and (2) definitional issues on (including subtypes of) lone actors/small cells and defining terrorism and/or political violence, we refer to these previously published CLAT-reports.

Data on lone actor terrorists were coded according to four thematic areas:[42] (1) Attack methodology and logistics; (2) political engagement and online activity; (3) personal characteristics; and (4) leakage and interaction with authorities. Their database contains both plots and attacks by lone actor terrorists across the twenty-eight EU member states, plus Norway and Switzerland, in the period between January 1st, 2000 and December 31st, 2014. It includes information from multiple sources, starting with data from the Global Terrorism Database (GTD). Data from the GTD were included if they occurred in the European Union, including Norway and Switzerland.

Next, additional internet and news media searches were carried out to both supplement information as well as to include further cases that fit the inclusion criteria.[43] For events that occurred in the period 2000-2014, country experts were contacted to verify that relevant cases had been identified and asking if they believed these met the inclusion criteria. In order to update the dataset, for the purpose of this study we added lone actor events committed in the years 2015 and 2016, using the same inclusion criteria. This original multi-centre search yielded a total 136 perpetrators, 66 of them single perpetrators of lone-actor terrorism, who were involved in 66 unique events. Even though the data collected in the CLAT-project also include triads and dyads, and

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[39] Ellis et al., "Final Report", 3.
[40] See: Sven Granath, "Homicide in Finland, the Netherlands, and Sweden: A First Study on the European Homicide Monitor Data." Brå, The Swedish National Council for Crime Prevention (2011) .
[41] See De Roy van Zuijdewijn and Bakker, "Personal Characteristics of Lone Actor Terrorists."; Ellis et al., "Final Report."
[42] For details, see Sebastian Feve and Kelsey Bjornsgaard, "Lone Actor Terrorism: Database Workshop." Countering Lone Actor Terrorism Series (2016).
[43] For more detail, see Ellis et al., "Analysis Paper."

individuals threatening to use violence, who were convicted for planning an act of terrorism, for the purpose of this paper, we define a lone actor terrorist as a single perpetrator, who committed an actual attack, thereby excluding plots.

Data stemming from the European Homicide Monitor

The European Homicide Monitor (EHM) is constructed by a consortium of European homicide researchers, enabling homicide comparisons and analyses among three European countries: Finland, the Netherlands, and Sweden.[44] To date, the EHM used in the aforementioned studies covering the period of 2003-2006, is the only European joint dataset including homicide data from multiple countries.

The EHM defines 85 variables on victim, offender, and incident level. In the dataset used, it covers 1,577 cases of homicide between 2003 and 2006, with a total of 1,666 victims and 1,917 perpetrators. We relied on the EHM as a source for creating our control group of 'common' homicide offenders, i.e. perpetrators who committed a non-ideologically motivated homicide. We created a subset of alone-acting homicide offenders from the original data used in Liem et al. (2017), who randomly selected 300 homicide offenders (100 for each country) with known age and gender, resulting in 249 alone-acting homicide offenders.

Joint New Dataset

To enable comparisons, we merged the selected data into a joint dataset, containing European lone actor terrorists between 2000 and 2016 ('cases'), and European non-ideological motivated, 'common' homicide offenders between 2003 and 2006 ('controls'). We made sure that none of the lone actor events committed in Finland, Sweden or the Netherlands were also in the EHM dataset as a homicide event. For each single perpetrator, three to four controls or 'homicide offenders' out of the individuals in the EHM dataset of whom age and gender were known, were included.

Variables in the new dataset mainly contain information given in several media sources. The dataset contains socio-demographic characteristics, such as age and age category, gender (male/female), educational level (enrolled in or completed primary, secondary or higher education), marital status (not in a relationship versus in a relationship) and employment status (employed versus unemployed). For lone actors specifically, we included the variable 'ideology', distinguishing between religiously-inspired, right-wing, left-wing, ethno-nationalist and separatist, single issue and 'other causes' (this category includes ideologically motivated school shooters). Also, for the lone actors, we included data on 'social isolation' and 'criminally sanctioned'. For homicide offenders specifically, we coded the type of homicide, distinguishing between domestic homicides (e.g. partner killing or other familial killing), non-domestic (e.g., criminal milieu, night life violence or other in criminal milieu), and a category 'unknown'. Event characteristics included number of fatalities for lone actor events, relationship between perpetrator and victim (stranger/random versus knew each other/not random), the location of the homicide (or type of targets attacked for lone actor) including private homes, park/forest, religious buildings et cetera and the modus operandi (weapon used: firearm, knives, smoke/fire, explosives and 'other' weapons such as poisoning, strangulation or suffocation, drowning, and hands-on weapons. Other variables on personal characteristics covered psychological background and violent history such as indications of substance use, which

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[44] For an overview, see Granath, "Homicide in Finland."; Marieke Liem et al., "Homicide in Finland, the Netherlands, and Sweden: First Findings from the European Homicide Monitor." *Homicide Studies* 17, no. 1 (2012)

entails whether there are at least some indications of illegal substance and/or alcohol consumption in the past or prior to attack (yes/no). Indication of mental disorder embodied some or sure indications of mental illness (yes/no). Whether or not the individual was previously violent, was coded in previous physical violence (yes/no). Finally, we included offender's suicide following the event (yes/no).

Analyses

The joint dataset included a total of 315 single perpetrators, both lone actors and a subset of 'common' homicide offenders. We compared lone actors who were not part of a small cell (N=66) to a subset of the comparison group (N=249). The selected sample of 249 homicide offenders committed different types of homicide: 41% domestic homicides (partner killing 29%, child killing and infanticide 2%, other familial killing 10%), 50% non-domestic homicides (8% criminal milieu, 3% robbery killings, 5% nightlife violence, 6% non-familial killing by mentally ill, 2% sexual killing, 26% other in non-criminal milieu) and 9% unknown. Bivariate statistics were applied to compare the socio-demographic, psychological background and violent history and event characteristics between groups.

Results

1. Individual Lone Actors

Event Characteristics

In Europe in the period 2000-2016, 66 lone actors carried out 66 lone actor events. In these events, the number of injured victims ranged from 0 to 242; the number of lethal victims in these events ranged from 0 to 77. Three quarters of lone actor events had two or fewer killed victims and three or less injured ones. In most events, individual lone actors attacked seemingly random victims, whilst others involved public figures (politicians) or former classmates (see Table 1, found in the Appendix). In the time period under study, the majority of these lone actors committed their attacks in Great Britain (N=14; 21%), France (N=12; 18%), and Germany (N=8; 12%). In other European countries, including Belgium, Bulgaria, Czech Republic, Denmark, Estonia, Finland, Greece, Italy, the Netherlands, Norway, Northern Ireland, Poland, Romania, Slovakia, Spain, Sweden and Switzerland, the number of incidents ranged from one to four throughout the entire period under study.

As for attack methodology, lone actor events were typically carried out by firearms (N=27; 41%) or explosives (N=13; 20%), and to a lesser extent by sharp instruments (18%), through smoke/fire or by making use of vehicles (less than 10%). Public places (street/café/car) or public buildings (e.g., religious or government buildings) were the most prevalent targets, in 50% and 26% of the events respectively. Institutions were targeted in six events. Whilst targets of religiously inspired lone actors in most events were civilian targets (N=12; 40%) and military targets (N=6; 20%) in public places, right-wing lone actors in this study generally targeted civilians in public places (i.e., street or shop and residences of asylum seekers or refugees) or religious buildings, such as mosques, Islamic cultural centres or synagogues (N=5; 36%).

Socio-demographic characteristics

In terms of ideological motivation, the majority of the 66 lone actors were religiously inspired (N= 24; 36%), of which most were motivated by jihadist views. The second most predominant group (N=18; 27%) included individual lone actors motivated by other causes, and included six school shooters. The third most common group involved right-wing lone actors (N =14; 21%), who were motivated by, for instance, neo-Nazi thinking or anti-immigrant or anti-Islam sentiments (Table 2). Other, much smaller categories constituted single issue individual lone actors (N=5; 8%), left-wing and anarchist lone actors (N=3; 5%), and ethno-nationalist and separatist lone actors (N=2; 3%).

Overall, European individual lone actors were – with the exception of one – all male, and on average 31 years old (μ=31.1; SD=10.4; Table 2). When we take the ideological subgroups into account, findings showed that right-wing lone actors (N=14) were on average 35 years old (μ=35.4; SD=11.3). Religiously inspired lone actors (N=24; 97%) were in their late twenties (μ=27.3; SD=6.7), similar to lone actors motivated by other causes included several school shooters (N=18; μ=29,7; SD=10.4). Finally, the five single-issue lone actors were on average 40 years old.

Information on marital status, employment status and educational level was not available for all individually operating lone actors. For those for whom data was available, our findings showed that three quarters of the individual lone actors were not in a relationship at the time of the event (N=33; 77%). Interestingly, the relatively high educational level of individual lone actors (secondary education or higher) did not appear to translate into holding a job later in life (44% of total).

Psychological background and violent history

Information on mental illness, history of substance use, history of violence and committing suicide was available for all individual lone actors (see Table 3). Among all individual lone actors, for approximately half of them (N=32; 49%) there was some indication of mental illness. Indications for mental illness did not appear to be highly prevalent among religiously inspired actors (28%), but more so for individually operating right-wing actors (50%). For the subgroup of those motivated by other causes (including school shooters), a higher percentage of indications for mental illness was found (13 out of 18 lone actors; 72%).

On average, one third of individual lone actors felt socially isolated prior to the attack. Lone actors motivated by other causes, including school shooters, were found most frequently to be socially isolated (N=10; 56%). In contrast, religiously inspired actors appeared to experience the lowest degree of social isolation (21%). Further, substance use was found in about two out of ten (21%) lone actors. Among both religiously inspired actors and single perpetrators motivated by other causes, about a quarter had a history of substance use. For right-wing lone actors, only 2 out of 14 (14%) had some indication of substance use.

As for history of violence, in about one third of individual lone actors (N=20; 30%), there were indications of previous physical violence. When we look at perpetrator ideology, findings showed that for religiously inspired actors, one third (34%) had been previously violent, as opposed to 17% of actors motivated by other causes and 21% in the case of right-wing actors. A little over one third (34%) of the total sample of individual lone

actors had previously been criminally sanctioned. Finally, 12 percent (N=8) of the 66 lone actors committed suicide following the attack.

2. Comparing Individual European Lone Actors to European Homicide Offenders

Event Characteristics

Individual lone actors typically attacked a 'random' victim, i.e. someone unknown to them (77% of all events, see Table 1). In other cases, they attacked non-random (former) class mates or teachers, or specific public figures (politicians or members of a royal family). In contrast, the vast majority (90%) of 'common' homicides in our sample constituted homicides between non-random victims such as family members or acquaintances. Thus, individual lone actors attacked strangers significantly more often than homicide offenders acting alone (77% versus 10%; χ2 =123.5 (1); p ≤ 0,001).
As for crime location, lone actor events were more likely to be committed in public places (50%), such as on the street or in cafés, in public buildings (26%), such as government buildings or religious buildings, and to a lesser extent on university campuses, or in high schools. Homicide offenders, however, typically committed the homicide event in a private setting (68%) or in a (semi-) public place, such as a park or forest (7%), on the street, in a café or in a car (20%).

In terms of modus operandi, the most prevalent weapons among lone actors were firearms (41%) and explosives (20%). Other types of weapons used in lone actor attacks included sharp instruments, smoke or fire and vehicles. Homicide offenders, in contrast, used sharp instruments such as knives (in 43%) more frequently than firearms (18%), and, in contrast to lone actors, used hands-on methods such as kicking, hitting or psychical violence (11%).

Socio-demographic characteristics

Lone actors were significantly younger (μ=31.1) than homicide offenders acting alone, who were in their late 30s (t = -3.4 (313); p ≤ 0,001). Both groups did not differ in terms of gender and employment status. The available data on marital status showed that more than three quarters of the individual lone actors was not in a relationship, which is significantly higher than almost half of the homicide offenders acting alone (χ2 =10.6 (1); p ≤ 0,001). Single perpetrators of homicide were significantly less educated than individual lone actors (χ2 =106.0 (2); p ≤ 0,001). Table 2, summarizing the results of the statistical tests performed with these variables, may be found in the Appendix.

Psychological background and characteristics

For half of the individual lone actors and homicide offenders acting alone, there appeared to be at least some indications of mental illness. Individual lone actors were significantly more likely to commit suicide following the event (12% versus 5%; χ2 =3.9 (1); p ≤ 0,05), but less likely to have a history of substance use (21% versus 79%; χ2 = 69.1 (1); p ≤ 0,001) and a history of violence (30% versus 59%; χ2 =13.9 (1); p ≤ 0,001). Table 3, summarizing the results of the statistical tests performed with these variables, may be found in the Appendix.

Discussion

Findings

This is the first comparative study to empirically describe the characteristics of ideologically motivated lone actors in Europe in the period 2000-2016, and to empirically compare this group of offenders to 'common' (non-ideologically motivated) homicide offenders. Findings showed that in this period the majority of lone actor attacks took place in the United Kingdom, in France, Germany and Sweden. In line with previous studies on lone actors,[45] our results showed that the majority of these attacks have been committed by single perpetrators who were religiously inspired (mostly by jihadist views), followed by lone actors who were motivated by other causes, attacking politicians or schools, and right-wing actors. They mostly used firearms and explosives to commit the attack, and typically targeted civilians, military targets, or religious targets. The majority of individual lone actors were men in their 30s, who were oftentimes single or unemployed, and obtained some form of higher education. In one out of two lone actors, there were indications of mental illness. For the latter, information stated in media reports was used, while diagnostic statements would be preferred to ensure validity.

The differences between both groups could in most cases be summarized by instrumental versus expressive motivations, a distinction commonly used in homicide research:[46] Lone actors being mostly driven by instrumental aims, whereas homicide offenders committed the offence mostly out of strong emotions. The expressive nature of the homicidal act was reflected in the higher prevalence of a history of physical violence and substance use among homicide offenders. Further, the expressive nature could be observed in the direction of their aggression: Whilst lone actors victimized targets including strangers, such as military targets or religious targets, in public places with a firearm or explosives, homicide offenders rarely attacked strangers, and instead committed the offence in a private location, with knives, firearms or hands-on weapons.

It may be argued that such lone actor targets represent either strategic targets, such as military objects, or targets chosen to send out an ideological message of terror – including targets that are associate with a large number of victims, to maximize impact. In such cases, the high prevalence of suicide among lone actors should be understood as a desire to die in the 'mission', whilst carrying out their ideological pursuit, rather than suicide following a 'common' homicide. In these homicides, which are mostly of domestic nature, the suicidal offender is oftentimes motivated by dependency on the victim(s), and a desire to be re-united with the victim(s) after death.[47]

Exceptions to the expressive versus instrumental dynamic include lone actors who choose targets that represent a particular personal grievance: For example, students in school or college who represent the bullies who once bullied the shooter. Such offenders, one may argue, have more in common with homicide offenders who attack victims known to them, towards who they have a particular grievance, such as (estranged) intimate partners, rivals in love, or friends / acquaintances with whom they are in conflict. Such heterogeneity calls for future comparisons of lone actor sub-groups,

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[45] See De Roy van Zuijdewijn and Bakker, "Lone Actor Terrorism."; Fein and Vossekuil, "Assassination in the United States."; Gill et al., "Bombing Alone."; Spaaij and Hamm, "Key Issues and Research Agendas."
[46] C. Gabrielle Salfati, "The Nature of Expressiveness .and Instrumentality in Homicide: Implications for Offender Profiling." *Homicide Studies* 4, no. 3 (2000).
[47] Marieke Liem, "Homicide Followed by Suicide: An Empirical Analysis." (PhD dissertation, Utrecht University, 2010)

compared to homicide offender sub-groups.[48] There are several benefits of disaggregating such sub-groups by their fundamental attributes. Doing so may advance our understanding of the varied nature of lethal violence, illuminating different patterns, causes and contexts in which homicides occur.[49]

Further, we should be careful not to equate the attacking of strangers with the attacking of random individuals. Whilst most lone actors do not personally know their victims, this does not imply that victims are chosen at random – for the offender, such victims represent 'infidels', 'cultural-Marxists' or 'baby killers'. This, it may be argued, is precisely the difference between lone actors and homicide offenders: Because the lone actor is ideologically or religiously motivated, we tend to label the victims as 'strangers', thereby risking losing sight of underlying lone actor motivations that may help us to better understand how these categories truly differ from one another.

Cut from the Same Cloth?

Bivariate analysis showed that individual lone actors differed from homicide offenders who act alone on some characteristics. These lone actors tended to attack stranger victims and use firearms more often than homicide offenders did. Furthermore, lone actors were younger, more single, and more educated than homicide offenders who act alone. Homicide offenders, in contrast, more often had a history of violence and indications of substance use. On the one hand, these findings are in line with previous studies suggesting that lone actors differ from 'common' homicide offenders on key characteristics.[50] On the other hand, these findings call into question to what extent we are truly dealing with a particular subtype of offenders. First, in line with prior research, we found that both lone actor attacks and homicides were generally committed by young men,[51] in that both forms of violence seem to have common offender pools.[52] Second, the fact that both lone actors themselves and society deem their motive to be ideological, religious or political, combined with the fact that their attacks have a profound societal impact, sets them apart from other types of violent offenders. It should be questioned, however, whether this construct (defining lone actor terrorism based on ascribed ideological motivation and choice of victim) is a useful one to come to a full understanding of individual motivations underlying the event.

Future research should further assess this notion, whereby criminological literature on the influence of life events (e.g. Sampson & Laub, 2005), criminal careers (e.g. Piquero, Jennings & Barnes, 2012) and impulsivity (e.g. Meloy & Pollard, 2017) may provide theoretical insights.[53] In such future attempts, the role of mental illness warrants particular attention – in the case of a profound role of mental illness, it may be questioned what causes one offender to commit a politically, religiously or ideologically motivated crime aimed at strangers, whereas another offender suffering from a similar mental disorder resorts to victimizing individuals known to him.

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[48] See also: Jan Leenars and Alistair Reed, "Understanding Lone Wolves: Towards a Theoretical Framework for Comparative Analysis." *International Centre for Counter-Terrorism – The Hague* (2016)

[49] LaFree and Gruenewald, "The Intersection of Homicide"

[50] Cappelan, "Lone Wolf Terrorist or Deranged Shooter?"; Gruenewald, "A Comparative Examination of Far-Right Extremist Homicide Events."; Gruenewald and Pridemore, "A Comparison of Ideologically-Motivated Homicides."; Horgan et al., "Across the Universe?"

[51] Young and Kearns, "Empirical Challenges to Studying Terrorism and Homicide."

[52] LaFree and Gruenewald, "The Intersection of Homicide"

[53] Liem et al., "European Lone Actor Terrorists Versus "Common" Homicide Offenders."

Shortcomings and Future Research

Whilst homicide research has a long tradition of assessing homicides by subtype, such as by distinguishing motives, the lone actor empirical literature to date has suffered from a fairly low sample size, hampering such distinctions and differentiations. The study at hand struggled with the same limitation, as subgroups of lone offenders were overall too small to statistically assess differences between subgroups. Future studies should attempt to overcome this limitation by resorting to a multi-centre design, also employed in the study of other rare types of lethal violence.[54]

Further, ideally, we would have liked to use similar time periods and similar geographical distributions in cases (lone actors) and controls (homicide offenders) to optimize comparisons. To date, however, the European Homicide Monitor (EHM) is the only European, internationally comparable dataset in use. Future research endeavours, including implementing the EHM in other European countries, may allow for such future comparisons.

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[54] See, for example, Olav Nielssen et al.,"The Intersection of Homicide, Terrorism, and Violent Extremism." *Schizophrenia Bulletin* 37, no. 3 (2009)

Bibliography

Bakker, Edwin, and Jeanine De Roy van Zuijdewijn. "Lone-Actor Terrorism. Definitional Workshop." RUSI Countering Lone-Actor Terrorism Series No.2. (2016).

Bakker, Edwin and Beatrice De Graaf. "Lone Wolves: How to Prevent this Phenomenon?", paper presented at the Expert Meeting Lone Wolves, International Centre for Counter Terrorism – The Hague (November 2010). (http://www.icct.nl/download/file/ICCTBakker-deGraaf-EM-Paper-Lone-Wolves.pdf).

Borum, Randy, Robert A. Fein and Bryan Vossekuil. "A Dimensional Approach to Analyzing Lone Offender Terrorism." *Aggression and Violent Behavior* 17, no. 5 (2012): 389-396.

Brookman, Fiona. *Understanding Homicide*. London: Sage, 2005.

Capellan, Joel A. "Lone Wolf Terrorist or Deranged Shooter? A Study of Ideological Active Shooter Events in the United States, 1970–2014." *Studies in Conflict & Terrorism* 38, no.6 (2015): 395-413.

Corner, Emily, Paul Gill and Oliver Mason. "Mental Health Disorders and the Terrorist: A Research Note Probing Selection Effects and Disorder Prevalence." *Studies in Conflict & Terrorism* 39, no. 6 (2016): 560-568.

De Roy van Zuijdewijn, Jeanine, and Edwin Bakker. "Lone-Actor Terrorism: Policy Paper 1: Personal Characteristics of Lone-Actor Terrorists." RUSI Countering Lone-Actor Terrorism Series (2016).

Eby, Charles A. "The Nation that Cried Lone Wolf: A Data-Driven Analysis of Individual Terrorists in the United States Since 9/11." DTIC Document (2012).

Ellis, Clare, Raffaello Pantucci, Jeanine de Roy van Zuijdewijn, Edwin Bakker, Benoît Gomis, Simon Palombi and Melanie Smith. "Lone-Actor Terrorism: Final Report." RUSI Countering Lone-Actor Terrorism Series (2016).

Ellis, Clare, Raffaello Pantucci, Jeanine de Roy van Zuijdewijn, Edwin Bakker, Benoît Gomis, Simon Palombi and Melanie Smith. "Lone-Actor Terrorism: Analysis Paper." RUSI Countering Lone-Actor Terrorism Series (2016).

Europol. *The European Terrorism Situation and Trend Report*. The Hague: Europol, 2016. https://www.europol.europa.eu/sites/default/files/documents/europol_tesat_2016.pdf

Fein, Robert A. and Bryan Vossekuil. "Assassination in the United States: An Operational Study of Recent Assassins, Attackers, and Near-Lethal Approachers." *Journal of Forensic Sciences* 44, no. 2 (1999): 321-333.

Feve, Sebastian, and Kelsey Bjornsgaard. Lone-Actor Terrorism Database Workshop. RUSI Countering Lone-Actor Terrorism Series (2016).

Flewelling, Robert L. and Kirk R. Williams. "Categorizing Homicides: The Use of Disaggregated Data in Homicide Research." In: *Homicide: A Sourcebook of Social*

Research, edited by M. Dwayne Smith and Margaret Zahn, 96-106*.* Thousand Oaks: Sage Publications, 1999.

Gill, Paul, John Horgan and Paige Deckert. "Bombing alone: Tracing the Motivations and Antecedent Behaviors of Lone-Actor Terrorists." *Journal of Forensic Sciences* 59 no. 2 (2014): 425-435.

Granath, Sven, Johanna Hagstedt, Janne Kivivuori, Martti Lehti, Soenita Ganpat, Marieke Liem and Paul Nieuwbeerta. "Homicide in Finland, the Netherlands and Sweden: A First Study on the European Homicide Monitor Data". Stockholm: Brå, The Swedish National Council for Crime Prevention (2011).

Gruenewald, Jeff. "A Comparative Examination of Far-Right Extremist Homicide Events." *Homicide Studies* 15 (2011): 177-203.

Gruenewald, Jeff, Steven Chermak and Joshua D. Freilich. "Distinguishing "Loner" Attacks from Other Domestic Extremist Violence." *Criminology & Public Policy* 12, no. 1 (2013): 65-91.

Gruenewald, Jeff, Steven Chermak and Joshua D. Freilich. "Far-Right Lone Wolf Homicides in the United States." *Studies in Conflict & Terrorism* 36, no. 12 (2013): 1005-1024.

Gruenewald, Jeff and William Alex Pridemore. "A Comparison of Ideologically-Motivated Homicides from the New Extremist Crime Database and Homicides from the Supplementary Homicide Reports Using Multiple Imputation by Chained Equations to Handle Missing Values." *Journal of Quantitative Criminology* 28, no. 1 (2012): 141-162.

Hamm, Mark and Ramon Spaaij. "Lone Wolf Terrorism in America: Using Knowledge of Radicalization Pathways to Forge Prevention Strategies" US Department of Justice Report (2015).

Horgan, John, Paul Gill, Noemie Bouhana, James Silver and Emily Corner. "Across the Universe? A Comparative Analysis of Violent Behavior and Radicalization Across Three Offender Types with Implications for Criminal Justice Training and Education." US Department of Justice, (2016).

LaFree, Gary, and Jeff Gruenewald. "The Intersection of Homicide, Terrorism, and Violent Extremism." *Homicide Studies* 22, no. 1 (2018): 3-7.

Leenaars, Jan and Alistair Reed. "Understanding Lone Wolves: Towards a Theoretical Framework for Comparative Analysis." The International Centre for Counter-Terrorism, The Hague (2016).

Liem, Marieke, Sven Granath, Johanna Hagstedt, Janne Kivivuori, Martti Lehti, Soenita Ganpat and Paul Nieuwbeerta. "Homicide in Finland, the Netherlands, and Sweden: First Findings from the European Homicide Monitor." *Homicide Studies* 17, no. 1 (2013): 75-95.

Liem, Marieke, Jelle van Buuren, Jeanine de Roy van Zuijdewijn, Hanneke Schönburger and Edwin Bakker. "European Lone Actors versus 'Common' Homicide Offenders: An Empirical Analysis." *Homicide Studies* 22, no. 1 (2017): 45-69.

Liem, Marieke. "Homicide Followed by Suicide. An Empirical Analysis." PhD Diss., Utrecht University, 2010.

McCauley, Clark, Sophia Moskalenko and Benjamin van Son. "Characteristics of Lone-Wolf Violent Offenders: A Comparison of Assassins and School Attackers." *Perspectives on Terrorism* 7, no. 1 (2013).

Meloy, J. Reid and Jeffrey Pollard. "Lone-Actor Terrorism and Impulsivity." *Journal of Forensic Sciences* 62, no. 6 (2017): 1643-1646.

Moskalenko, Sophia and Clark McCauley. "The Psychology of Lone-Wolf Terrorism." *Counselling Psychology Quarterly* 2, no. 2 (2011): 115-126.

Nesser, Petter. "Research Note: Single Actor Terrorism: Scope, Characteristics and Explanations." *Perspectives on Terrorism* 6, no. 6 (2012).

Nielssen, Olav, Dominique Bourget, Taina Laajasalo, Marieke Liem, Alain Labelle, Helina Häkkänen-Nyholm, Frans Koenraadt and Matthew M. Large. "Homicide of Strangers by People with a Psychotic Illness." *Schizophrenia Bulletin* 37, no. 3 (2009): 572-579.

Pantucci, Raffaello. "A Typology of Lone Wolves: Preliminary Analysis of Lone Islamist Terrorists." International Centre for the Study of Radicalisation and Political Violence – London (2011).

Piquero, Alex R., Wesley G. Jennings and J.C. Barnes. "Violence in Criminal Careers: A Review of the Literature from a Developmental Life-Course Perspective." *Aggression and Violent Behavior* 17, no. 3 (2012): 171-179.

Salfati, C. Gabrielle. "The Nature of Expressiveness and Instrumentality in Homicide: Implications for Offender Profiling." *Homicide Studies* 4, no. 3 (2000): 265-293.

Sampson, Robert J. and John H. Laub. "A Life-Course View of the Development of Crime." *The Annals of the American Academy of Political and Social Science* 602, no. 1 (2005): 12-45.

Schuurman, Bart, Edwin Bakker, Paul Gill and Noemie Bouhana. "Lone Actor Terrorist Attack Planning and Preparation: A Data-Driven Analysis." *Journal of Forensic Sciences* (2017).

Spaaij, Ramon. *Understanding Lone Wolf Terrorism: Global Patterns, Motivations and Prevention*. Springer Science & Business Media, 2011.

Spaaij, Ramon and Mark Hamm. "Key Issues and Research Agendas in Lone Wolf Terrorism." *Studies in Conflict & Terrorism* 38, no. 3 (2015): 167-178.

Victoroff, Jeff. "The Mind of the Terrorist: A Review and Critique of Psychological Approaches." *Journal of Conflict Resolution* 49, no. 1 (2005): 3-42.

Young, Joseph and Erin Kearns. "Empirical Challenges to Studying Terrorism and Homicide." In: *The Handbook of Homicide*, edited by Fiona Brookman, Edward R. Maguire and Mike Maguire, 231-248. Chichester: Wiley Blackwell, 2017.

Appendix: Tables

Table 1: *Event Characteristics of European Lone Actor Events versus European Homicide Events committed by single perpetrators*

Event Characteristics					
	Single Perpetrators				
	Lone Actor Events (n=66)		Homicide Events (n=249)		Significance
	N	%	N	%	
Number of lethal victims[a]	2.0 (0-77)		1.0 (1-4)		
Relationship to victim					
Strangers/random	50	76.9	21	9.5	***
Know each other/not random	15	23.1	202	90.5	
Missing	*1*		*26*		
Weapon use[55]					
Firearm	27	40.9	44	18.0	-
Sharp instrument	12	18.2	105	42.9	
Smoke/fire	3	4.5	5	2.0	
Explosive	13	19.7	-	-	
Vehicle	6	9.1	2	0.8	
Violence without weapon	-	-	27	11.0	
Other	5	7.6	62	25.3	
Missing			*4*		
Location					
Private home	2	3.4	164	67.5	-
Park/forest	-	-	18	7.4	
Institution	6	10.0	5	2.0	
Public Place (street/café/car)	30	50.0	49	20.2	
Religious building	8	13.3	-	-	
Government building	8	13.3	-	-	
Residence refugee or asylum seekers	-	-	-	-	
Other	-	-	7	2.9	
Missing	*6*		*6*		

Percentages are based on known observations only

 [a] Median and range

- no significance tests, because of a cell count less than 5

- * p ≤0.05; ** p ≤0.01; *** p ≤0.001 (two-tailed)

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[55]Please note that weapon use in case of Lone Actor Events could only be determined by offender. Given the sometimes very large number of victims involved in Lone Actor attacks, for Lone Actors this variable reflects offender-based weapon use.

Table 2: *Socio-demographic Characteristics of Lone Actors versus Homicide Offenders acting alone*

Socio-Demographic Characteristics					
	Single Perpetrators				
	Lone Actors N= 66		Homicide Offenders N= 249		Significance
	N	%	N	%	
Gender[a]					
Male	65	98.5	222	89.2	-
Female	1	1.5	27	10.8	
Age[b]					
Mean	31.1. (±10.4)		37.2 (±13.4)		***
Age category[a]					
< 25	21	31.8	47	18.9	**
25-39	32	48.5	104	41.8	
> 40	13	19.7	98	39.3	
Ideology					
Ethno-nationalist and separatist	2	3	-	-	-
Left- wing and anarchist	3	4.5	-	-	
Other	18	27.3	-	-	
Religiously inspired	24	36.4	-	-	
Right-wing	14	21.2	-	-	
Single issue	5	7.6	-	-	
Type of homicide					
Domestic homicide	-	-	107	43.0	-
Non-domestic homicide	-	-	123	49.4	
Unknown	-	-	19	7.6	
Marital status[a]					
Not in a relationship	33	76.7	71	48.6	***
In a relationship	10	23.3	75	51.4	
Missing	*23*		*103*		
Employment status[a]					
Unemployed	30	55,6	90	60.4	ns
Employed	24	44.4	59	39.6	
Missing	*12*		*100*		
Educational level[a]					
Primary	0	0,0	25	25.8	***
Secondary	26	63.4	64	66.0	
Higher	15	36.6	8	8.2	
Missing	*25*		*152*		

Percentages are based on known observations only

[a] Chi Square; [b] T-test; ns = non-significant

- no significance tests

* p ≤0.05; ** p ≤0.01; *** p ≤0.001 (two-tailed)

Table 3: *Psychological background and violent history of Lone Actors versus Homicide Offenders acting alone*

Psychological Background and Violent History					
	Single Perpetrators				
	Lone Actors N=66		Homicide Offenders N=249		Significance
	N	%	N	%	
Indication of mental illness[a]					
No	34	51.5	45	50.6	ns
Yes	32	48.5	44	49.4	
Missing	-		*160*		
Indication of substance use[a]					
No	52	78.8	29	19.3	***
Yes	14	21.2	121	80.7	
Missing	-		*99*		
History of violence[a]					
No	46	69.7	53	41.4	***
Yes	20	30.3	75	58.6	
Missing			*121*		
Committed suicide[a]	-				
No	58	87.9	188	94.9	*
Yes	8	12.1	10	5.1	
Missing	-		*51*		

Percentages are based on known observations only

[a] Chi Square; ns = non-significant

* $p \leq 0.05$; ** $p \leq 0.01$; *** $p \leq 0.001$ (two-tailed)

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Cut From the Same Cloth? Lone Actor Terrorists versus Common Homicide Offenders

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The International Centre for Counter-Terrorism – The Hague (ICCT) is an independent think and do tank providing multidisciplinary policy advice and practical, solution-oriented implementation support on prevention and the rule of law, two vital pillars of effective counter-terrorism.

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