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Australian Mass Shootings: An Analysis of Incidents and Offenders

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Abstract

Mass shooting events are relatively underresearched, and most study comes from the United States. Despite significant international interest, little is known about other countries' experiences of these events. The current study examines Australian mass shooting incidents and offenders, with emphasis on mental illness, life strains, and offenders' life histories. Australia had 14 mass shootings between 1964 and 2014. Most offenders experienced acute life stressors and/or chronic strains leading up to the event; however, diagnosed mental illness was less commonly documented. These observations provide new information about mass shooting incidents and offenders, and can help to inform international policy development.

Keywords

mass shooting, mental illness, life events, homicide, firearms

Introduction

Although representing a tiny proportion of firearm homicides overall, mass shooting incidents can generate intense community, media, and political reaction. While predicting such rare events is virtually impossible (Grantham,

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2013), it is vital that incidents be carefully studied to facilitate improved understanding, and in turn inform policies that may increase the possibility of prevention. To date, though, the relatively small amount of research into mass shootings comes almost exclusively from the United States, and tends to focus on psychological impacts (e.g., Golden, Jones, & Donlon, 2014; Littleton, Axsom, & Grills-Taquechel, 2011; Montgomerie, Lawrence, LaMotte, & Taft, 2015; Shultz et al., 2014). In addition to clinically oriented studies, analysis has been undertaken on media depictions of, and influences on, mass shootings (Chyi & McCombs, 2004; Elson & Ferguson, 2013; McGinty, Webster, & Barry, 2013; McGinty, Webster, Jarlenski, & Barry, 2014; Schildkraut & Muschert, 2014). Access to firearms and the United States's unique culture surrounding firearms (Metzl & MacLeish, 2015) have been examined as facilitators of mass shootings, and restrictions on firearms have been proposed as a means of reducing mass shooting incidents (see Fox & DeLateur, 2014, for a summary). Broad consideration has been given to the role of mental illness, and firearm access by mentally ill persons as contributors to mass shootings (Bostwick, 2013; Domenech, 2013; Fan, 2015; Kleck, 2009; Lankford, 2015; Shern & Lindstrom, 2013; Swanson, 2011; Swanson, McGinty, Fazel, & Mays, 2015).

Such study, although valuable, provides only limited insights into situational factors surrounding mass shootings—yet understanding situational factors can play an important role in informing preventive strategies. Scholars have responded to this need by developing classifications based on incident/offender characteristics (e.g., "public" shootings, such as those occurring in workplaces or schools, vs. "private" shootings, which typically occur in the home), and identifying risk factors associated with different perpetrator typologies (e.g., "family annihilators," "workplace avengers," "pseudocommandos"; see Knoll, 2010; Levin & Madfis, 2009; Madfis & Levin, 2013).

Broadly, these studies consider three categories of risk factors: life events and history, mental illness, and types and numbers of firearms used. In terms of life events and history, in many instances, mass shooting offenders experience a selection of acute and chronic life strains such as rejection (including romantic rejection like relationship breakdown, social rejection by peers, and workplace rejection such as being fired); failure to form conventional social bonds (and an accompanying lack of social support networks, leading to social isolation), or meet social "milestones" (e.g., academic or professional success; the former has been linked with school shootings and the latter with workplace shootings); intimate partner/family difficulties or conflicts (Levin & Madfis, 2009; Madfis & Levin, 2013); and loss of money/financial problems (e.g., Fox & Levin, 2015). Past criminal behavior has not been commonly observed (Fox & DeLateur, 2014).

Regarding mental illness, while conditions such as depression and anxiety have been observed among some mass shooters, severe illness (particularly, psychosis) appears relatively less common, and formally diagnosed mental illness is found among only a small minority of mass shooters (Fox & Fridel, 2016; Fox & Levin, 2015). Attributing precise figures to the prevalence of mental illness (and different types of mental illness) is extremely difficult, due to data limitations and a lack of reliable information sources. For example, in many instances, family or friends provide the only "assessment" of the offender's mental state (Fox & Fridel, 2016). Also, conceptualizations of "mental illness" vary greatly, and range from medically recognized categories of psychiatric illness (Matejkowski, Fairfax-Columbo, Cullen, Marcus, & Solomon, 2014) through to vague descriptions such as "troubled" (Follman, Aronsen, & Pan, 2016). Despite these limitations in current knowledge, mental illness clearly represents a relevant consideration.

Finally, study of situational factors has examined whether mass shooters typically use certain types of firearms, and/or multiple firearms. Although "military style" (or "assault") firearms (particularly rifles) have received considerable attention, evidence suggests those types of firearms are involved in a relatively small proportion (less than 10%) of mass shooting incidents (Krouse & Richardson, 2015). Around one third of mass shooters use more than one firearm (Lankford, 2016a). Comprehensive data concerning whether the offender obtained their firearm(s) legally are not presently available (Krouse & Richardson, 2015).

These studies primarily consider incidents within the United States and disproportionately examine public shootings. However, evidence suggests there may be shared risk factors—such as the presence of life strain—across different "types" of shootings (e.g., Madfis & Levin, 2013), and indicates that some "private" shootings extend into "public" shootings, or that incidents initially involving (for example) family members may extend to persons who are not known to the offender (e.g., Krouse & Richardson, 2015). Consequently, just as there is value in examining different "types" of shootings separately to better understand each "type," there also appears to be value in simultaneously examining different "types" of mass shootings to discern whether there are any particular similarities across those events.

Theoretical Perspectives

Overlapping with empirical identification of factors associated with mass shootings, a small amount of research—again, from the United States—has considered whether theoretical frameworks that are often used to understand homicide more broadly can be applied to mass shootings. Specifically,

cumulative strain theory, developmental theory, and theories of "failed masculinity" have all been put forward as useful for explaining mass shooting events. These theories propose, respectively, that mass shootings represent an extreme and dysfunctional response to life stressors (Levin & Madfis, 2009), the culmination of significant developmental challenges over an individual's life course (including family dysfunction and breakdown, as well as peer rejection; Harwood, 2011; Rice & Hoffman, 2015; Thompson & Kyle, 2005), and the reaction to an inability to meet socially defined expectations of masculinity (such as successful employment and relationship formation; Kalish & Kimmel, 2010; Madfis, 2014).

Comparative Analyses and International Overview

Although it would be desirable to directly compare the United States against other countries, the highly specific focus of much existing research (e.g., on public place shootings, or specific incidents/individuals) means direct comparisons are only feasible for a limited number of variables, such as offender age and sex, incident location (public or private), number of victims, relationship between offender and victims, number and type of firearm(s) used, and whether the offender suicided. Compounding this difficulty is the extreme rarity of mass shootings in countries outside the United States, leading to very low sample sizes.

Most notably in terms of comparative work, Lankford (2016a) has demonstrated that (among public incidents), relative to 170 other countries, U.S. offenders were more likely to use multiple firearms (22% vs. 51%, respectively), kill a smaller mean number of victims (6.87 in the United States vs. 8.83 in other countries), and attack schools or workplaces (Lankford, 2016b). Larkin (2009) provided an overview of school shootings in particular, presenting information from North America, Europe, and Australia about offender sex, age, race-ethnicity, number killed and wounded, whether the offender suicided, and whether the Columbine Massacre influenced the offender. Madfis and Levin (2013) offered an examination of international school shootings, with emphasis on numbers killed/injured, selected stressors (bullying, social isolation), and whether students, staff, or both were targeted.

Australia has been the focus of most other studies into non-U.S. mass shootings, but those studies contain substantial limitations. For example, Mullen (2004) interviewed five public place shooting offenders, thus excluding private incidents and offenders who suicided. The study emphasizes clinical conditions (such as depression), with limited consideration of other situational factors. Also, as Lankford (2016b) noted, that study does

not adopt any particular definition of "mass shooting," and only included two offenders who killed four or more victims (the most commonly used research definition of mass shooting). Lemieux, Bricknell, and Prenzler (2015) contained very limited information about mass shooting incidents (number of events, sex of offender, location) over a relatively short time period. Other Australian studies adopt either a high-level epidemiological approach (McPhedran & Baker, 2011; Mouzos, 2000) or focus on single individuals (Milton, 1992; Rapley, McCarthy, & McHoul, 2003). Despite their limitations, these studies establish a basis upon which further studies of Australian mass shootings can build.

Key Knowledge Gaps and Current Research Focus

There exist three key gaps in existing empirical literature. The first is the general absence of study of mass shootings in countries other than the United States. Given the unique characteristics of the United States in terms of firearm ownership and culture, it is prudent to build the international evidence base to better understand mass shootings in general. Second, most studies have focused heavily on public place incidents, rather than considering whether private and public incidents share any similarities in situational factors and, if so, what those may be. Third, few studies—and none outside the United States—have simultaneously considered information about incident characteristics *and* offenders, with an emphasis on situational factors. Collectively, these gaps limit consideration of which theoretical framework(s) may be usefully applied to mass shootings, and impede efforts to discern where preventive efforts may be usefully directed. Using descriptive analyses, the current study begins to fill these gaps.

Method

Definitions and Time Period

Following conventions used elsewhere (e.g., Fox & Levin, 2015; Lankford, 2015; Mouzos, 2000; Towers, Gomez-Lievano, Khan, Mubayi, & Castillo-Chavez, 2015), a mass shooting was defined as an event in which four or more people were killed within a short time period (within 24 hr; Scott & Fleming, 2014). Incidents involving multiple offenders were excluded.[1] The study examined the 50-year period from 1964-2014. The start point of 1964 was selected to provide a sufficiently lengthy historical overview to allow useful information to be gathered, while avoiding potential data selection bias (commencing or ending the data set at the

time a particular incident occurred may not provide an accurate overview of the historic frequency of mass shooting events). The time period also reflects the lack of accessible and comprehensive information from the earlier half of the 20th century, discovered during initial searches.[2]

Incident Identification Strategy

Incidents were initially identified by searching published academic literature, in Web of Science incorporating Medline, Scopus, and PsychInfo, using the terms "mass AND shooting," "mass AND firearm*," "mass AND gun," "multiple AND shooting*," "multiple AND firearm*," and "multiple AND gun." Additional searches of literature examining firearm violence more generally were conducted to cross-validate incident selection. Media searches were also conducted, using online search engines as well as Factiva, MediaNet, and MediaScan (Informit). Once incidents fitting the inclusion criteria were identified, offender names were used to conduct further searches and identify material that may not have initially been located. This involved accessing databases of academic literature (Web of Science incorporating Medline, Scopus, and PsychInfo) and news media articles (Factiva, MediaNet, and MediaScan [Informit]), sources of police media releases and statements (relevant jurisdictions' police archives, plus Factiva, MediaNet, and MediaScan [Informit]), coroner's inquest reports (via relevant jurisdictions' Coroner's Court websites and libraries, as well other government agency's libraries and academic libraries) and court records (e.g., court transcripts, sentencing remarks, appeals) through LexisNexis, Westlaw, and AustLII, and court libraries. Due to their high reliability, Coroner's reports and court records were treated as primary sources. In instances where, for example, media reports conflicted with those sources, the primary sources prevailed. Full Coroner's and court records were difficult to locate for some of the earlier incidents identified. In some instances, published excerpts of coronial investigations or court cases were available; however, without being able to cross-check those excerpts against full records, it cannot be said with certainty that the information given in those excerpts accurately reflects the full records. Each case was labeled with a unique identifier, consisting of the offender's initials.[3]

Variables

Information was extracted about incident characteristics (e.g., private or public location, number of victims), offender demographics (age, sex, ethnicity, occupation), and offender–victims relationship (familial or

Table 1. Incident Characteristics of Mass Shooting Events.

Case	Locality/State	Month/Year	Incident Location	Victims (Killed)	Victims (Injured)
GH	Lockhart, New South Wales	September 2014	Private	4	0
MB	Port Arthur, Tasmania	April 1996	Public	35	19
PM	Hillcrest, Queensland	January 1996	Private	6	0
MGB	Terrigal, New South Wales	October 1992	Private	6	1
WF	Strathfield, New South Wales	August 1991	Public	6 (5 shot, 1 stabbed)	7
PE	Surry Hills, New South Wales	August 1990	Private	5	0
DR	Molgawo, Northern Territory	September 1988	Private	6	0
FV	Melbourne, Victoria	December 1987	Public	8	5
JTT	Canley Vale, New South Wales	October 1987	Private	5	1
JK	Melbourne, Victoria	August 1987	Public	7	19
RM	Pymble, New South Wales	January 1987	Private	4	0
JB	Wahroonga, New South Wales	June 1984	Private	5	0
FD	Campsie, New South Wales	September 1981	Private	5	0
CB	Hope Forest, South Australia	September 1971	Private	10	0
Mean number of victims				7.9	3.7

nonfamilial). Based on existing empirical study of mass shootings, life stressors (e.g., relationship dissolution, financial stress), history of violence/other criminal activities, and past or present mental illness was considered. Regarding mental illness, this included conditions that have traditionally been described as "Axis 1" disorders (e.g., anxiety, depression, psychotic illnesses). Other psychological conditions (such as developmental disorders like Asperger's syndrome) were coded separately (see below). Whether the offender took their own life was recorded. Other contextual information (e.g., family dysfunction in childhood; social isolation; developmental difficulties) was recorded where available. Information about firearms used in the incident and whether the offender held a firearms license was collated. Firearm type was coded as rifle (rimfire or centerfire) or shotgun, action type (bolt/lever/pump/semi-automatic) and, where relevant, configuration (e.g., military style) was also included.

Results

Incident Characteristics and Offender Demographics

There were 14 mass shootings between 1964 and 2014. The highest number of incidents (four events) occurred in 1987. Ten out of 14 incidents (71%) occurred during the years 1987-1996 (inclusive). Ten incidents occurred in private locations (typically, home residences). Table 1 provides further detail. All offenders were male, with a mean age of 32. Ten

incidents (71%) involved an intimate and/or familial relationship between offender and victims (Table 2).

Life Stressors, Mental Illness, and Violent or Other Criminal History

In 11 incidents (79%), the perpetrator had one or more life stressors present at the time of, or in the lead up to, the incident (Table 2). Stressors varied greatly between perpetrators. For example, a wide range of events occurred following JK's dismissal from a military academy, including perceived rejection by his adopted family and by his biological mother, inability to reestablish relationships with former friends, and rejection by a former girlfriend for whom he still harbored strong feelings. He had also incurred a substantial debt which could not be repaid because of his inability to find employment.

Intimate/family relationship problems featured for many offenders. For MGB, for example, the breakdown of a 7-year duration intimate relationship, and inability to reconcile with his former partner, were key contributing events that led to the incident. Relationship breakdown was also identified as a crucial precipitating factor in the case of PM's offending, although in that case other stressors were present, while for JTT, the sole identified stressor (noting limited information was available) was announcement of his ex-girlfriend's engagement to another man. In contrast, for GH, although relationship problems were present, the shooting appears to have been most closely associated with a period of immense strain, following a serious car accident in which his wife suffered serious injuries (including traumatic brain injury), such that "[m]arital and family stressors, including [GH wife's] permanent injuries, would likely have contributed to probable feelings of hopelessness for the future" (State Coroner of New South Wales, 2015, p. 17).

WF, although not having stressors at the time of, or in the immediate lead up to the event, experienced bereavement due to a parent's death by suicide, 2 years before the incident. It was noted that "[WF] was not on speaking terms with his mother, and he experienced strong guilt feelings upon her death" (Coroner's Court of New South Wales, 1991, p. 15). MB, also with no life stressors documented around the time of the incident, lost his father to suicide 3 years earlier. The impact of this loss was noted in the context of developmental factors:

> From an early age [MB] has displayed severe developmental problems, being grossly disturbed from early childhood . . . the prisoner, through these handicaps, *in combination with a number of external factors beyond his control such as the loss of stabilising influences*, has developed into a pathetic social misfit . . . (*R v. Bryant*, 1996a, para. 16, emphasis added)

Table 2. Perpetrator Characteristics and Other Situational/Contextual Information, by Public and Private Location.

Case	Age	Sex	Occupation	Ethnicity	Offender-Victims Relationship	Life Stressors	History of Violence	Mental Illness (Past or Present)	History of Criminal Acts (Nonviolent)	Other Information	Offender Suicided
Private location											
GH	44	M	Farmer	Caucasian	Intimate/familial—Wife and children	Y—Wife had been seriously injured in a car accident in recent past, offender had become carer	N	Possible—Depression	N		Y
PM	32	M	Businessman	Caucasian	Intimate/familial—Ex-wife and ex-parents-in-law, and children.	Y—Relationship dissolution, financial stress,[a] gambling problems,[a] legal problems	Y	Unknown	Y	Incident occurred during a child custody visit.	Y
MGB	45	M	Mechanic	Caucasian	Intimate/familial and nonfamilial—son, ex-girlfriend and her sister, their father, and a couple who were acquaintances of the offender	Y—Relationship dissolution, unemployed at the time of the offense due to injury	Y	Unknown	Y	Apprehended Violence Order[b] was in place against the offender. Exposed to and directly experienced serious family violence as a child.	N
PE	35	M	Unemployed	Caucasian	Familial and nonfamilial—Half-sister (allegedly also the offender's lover), neighbors	Y—Multiple, ongoing stressors	Y	Y—Psychosis	Y	History of drug abuse. Abandoned by mother in early childhood.	N
DR	25	M	Unknown	Aboriginal	Intimate/familial—Wife and children, parents-in-law	Y—Family conflict, including being told his sons were not his own children	Unknown	Possible—Depression was raised as a mitigating factor	Unknown	The offender lived a very traditional Aboriginal lifestyle, including beliefs that he had been affected by black magic. Significant head injury as a young teenager, followed by brain infection.	N—However did report suicidal ideation

(continued)

Table 2. (continued)

Case	Age	Sex	Occupation	Ethnicity	Offender-Victims Relationship	Life Stressors	History of Violence	Mental Illness (Past or Present)	History of Criminal Acts (Nonviolent)	Other Information	Offender Suicided
JTT	23	M	Unknown	Asian	Intimate/familial and nonfamilial—Ex-fiancee and her family	Y—Relationship dissolution	Unknown	Unknown	Unknown		Y
RM	27	M	Unknown	Caucasian	Nonfamilial—Acquaintance, her sisters, their friend	Unknown	Unknown	Y—Psychosis[c]	Unknown	May have had contact with a psychiatrist[c] Possible past intimate relationship with acquaintance[c]	N
JB	42	M	Businessman	Caucasian	Intimate/familial—Wife and children, mother	Y—Financial stress, business collapse[a]	N	Possible—Accounts of "mental distress"[a]	N		Y
FD		M	Disability pensioner[a]	Middle Eastern	Intimate/familial—Wife and children	Y—Financial stress associated with gambling[a]	Y	Unknown	Unknown	Apprehended Violence Orders[b] had previously been taken out against offender[a]	Y
CB	40	M	Slaughter-man	Caucasian	Intimate/familial—Wife and children, other relatives	Y—Financial stress, relationship problems[c]	Y	Unknown	Unknown		N
Public location											
MB	28	M	Nil—Independently wealthy (previous recipient of Disability Pension)	Caucasian	Nonfamilial—Majority of victims not known to offender, two victims were acquaintances	N—However, see "other information"	N	N	N	Offender under care of a guardianship board due to very low IQ (66). Lifelong difficulties with social integration, severe social isolation. Severe developmental problems. Probable Asperger's Syndrome. Father had suicided in 1992. Increasingly heavy alcohol consumption in 12 months leading to the incident	N—However had previous suicidal ideation

(continued)

Table 2. (continued)

Case	Age	Sex	Occupation	Ethnicity	Offender-Victims Relationship	Life Stressors	History of Violence	Mental Illness (Past or Present)	History of Criminal Acts (Nonviolent)	Other Information	Offender Suicided
WF	33	M	Taxi driver	Caucasian	Nonfamilial—No victims were known to the offender	N	N	Known to have consulted at least one psychologist in the period 1990-1991—Details unknown	N	Mother was an alcoholic with diagnosed psychiatric illness (bipolar disorder) and committed suicide in 1990. Offender socially isolated.	Y
FV	22	M	Unemployed	Caucasian	Nonfamilial—Victims were not known to offender, however, initial target (not killed) was an acquaintance	Y—Interpersonal conflict	N	Y—Severe and persistent depression, psychosis, had sought psychiatric care	N		Y (jumped from height)
JK	19	M	Unemployed	Caucasian	Nonfamilial—No victims were known to the offender	Y—Discharged from Army, legal problems, financial stress, unemployment	Y	Possible—Depression	N	Was awaiting court trial for stabbing an Army officer	N

[a]Denotes that the item of information was contained only in media reports, and could not be verified from coronial or court sources.
[b]Also referred to as a Restraining Order or Domestic Violence Order.
[c]Denotes that the item of information was contained in a media report presenting an excerpt of a court or coronial process.

MB's father was also mentioned in a 1991 government assessment concerning MB's receipt of Disability Pension, when the practitioner undertaking the assessment noted, "His father protects him from any occasion which would upset him as he continually threatens violence. [MB] tells me he [would] like to go round shooting people" (*R v. Bryant*, 1996b, p. 330). MB had chronic difficulties forming social connections, and ongoing social isolation:

> [MB] thinks about the distress and the rejections in the past . . . has become more caught up in these thoughts about past indignities over the last year. He said he became increasingly unhappy and angry because he had no real friends. He said, "all I wanted was for people to like me." Their failure to respond to his overtures led him to feel "that I'd had a gut full." This culminated in the months before the tragedy in a sense that there was no future for him, that he would always remain lonely and rejected and that he would be better off dead. (*R v. Bryant*, 1996b, p. 352)

Six offenders (43%) had a history of violence and/or other criminal activities. The nature and extent of offenders' past behavior varied. For example, while little reliable information is available about FD (almost all data were drawn from media sources), domestic violence was the sole criminal behavior mentioned. In the case of PM, however, a series of violent and other criminal activities were present, including being charged with a series of alleged fraudulent financial activities, and engaging in violence against his partner. PE had a history of assault and carrying a weapon (*State of New South Wales v. Evers*, 2015).

Seven offenders (50%) had a history of confirmed or probable/possible mental illness. For example, GH was described as having made on a number of occasions "comments that could be indicative of suicidal ideation" (State Coroner of New South Wales, 2015, p. 5) with evidence given by family members that they had noticed indicators of depression. DR, although not considered to display symptoms of clinically significant mental illness sufficient to diminish his level of responsibility at the time of the incident, stated during his trial that he was

> worried about the marriage; he was crying sometimes, feeling sad and thinking about killing himself; that when he shot [his family members] he was feeling both sad and very angry; that he was crying, his teeth were "falling down" and he was shaking. (*R v. Rostrum*, 2013, para. 11)

In contrast to cases involving speculation about the presence of depression, PE had a lengthy history of diagnosed psychotic illness and was "suffering from such abnormality of mind as substantially impaired his mental

responsibility for those acts" (*R v. Evers*, 1993, para. 2). Psychiatric reports indicated that PE " . . . shows evidence of a schizophrenic illness characterised by hallucinations, delusions, bizarre and aggressive behaviour, and inappropriate feelings with an incapacity to show remorse" (*State of New South Wales v. Evers*, 2015, para. 4). RM also was schizophrenic. Two offenders (14%) had confirmed contact with mental health professionals prior to the incident. The content of discussions WF had is not known. FV's psychologist recorded a diagnosis of depression and potential psychosis. FV's suicidality and violent intent toward others were documented, but the latter was "assessed to be fantasy and not real intent" (State Coroner of Victoria, 1988, p. 2). Nonvoluntary hospitalization of FV was noted as an appropriate response; however, his psychologist "considered . . . that his assessment of [FV] was confidential, did not indicate his assessment to anyone who could or would help [FV] and did not act further in the matter at all" (State Coroner of Victoria, 1988, p. 2). Seven offenders suicided.

Firearms Used and Licensing Status of Offender

Various different firearm types were used in the incidents (Table 3). All "private" incidents involved a single firearm, whereas two out of four public incidents involved more than one firearm. No reliable pre-1996 data are available concerning firearms ownership; hence, it was not possible to determine whether the types of firearms used were representative of the general profile of firearms owned in Australia, or whether an offender "preference" was apparent. Five offenders (36%) appear to have held a valid firearms license. Two (14%) did not hold a license, and no reliable information could be obtained for the six remaining perpetrators (43%). For one offender—PM—media accounts consistently suggested he did not hold a license; however, this could not be independently confirmed via other sources.

Discussion

The current study begins to address international gaps in understanding about mass shooting events, using Australian data. The incidents and offenders contain considerable diversity, both between and within the private and public shooting subgroups. However, irrespective of whether the shooting was a public or private incident, most offenders had significant—albeit, again, diverse—life stressors leading up to the event. The presence of confirmed mental illness was not commonly documented, while the presence of possible or probable mental illness occurred in five cases. The number of cases where no information could be obtained about this variable should be noted; it is

Table 3. Firearms Used and License Status of Offender.

Incident ID	Details of Firearm(s) Used	Offender Held Gun License	Other Information
GH	Shotgun (double barrel)	Y	License held for occupational reasons—Offender was a farmer
MB	Rifle × 2 (centerfire, military-style semi-automatic)	N	
PM	Rifle (centerfire, lever action)	Unknown—Suggestive evidence that no license held	
MGB	Shotgun (action type unknown, sawn off)	N	
WF	Rifle (centerfire, military-style semi-automatic)	Y	
PE	Shotgun (pump action)	Unknown—Suggestive evidence that no license held	
DR	Rifle (centerfire, action unknown) and shotgun (action unknown)	Unknown	Faulty shotgun; had to be operated manually
FV	Rifle (centerfire, semi-automatic, sawn off)	Y	Rifle had to be manually reloaded; semi-automatic loading mechanism not operable due to firearm being sawn off
JTT	Rifle (type unknown, action unknown, sawn off)	Unknown	
JK	Rifle × 2 (centerfire military-style semi-automatic), shotgun (pump action)	Y	
RM	Shotgun (action unknown)	Unknown	
JB	Unknown	Unknown	
FD	Rifle (rimfire, action unknown)	Y	
CB	Rifle (rimfire, single shot bolt action)	NA	

possible the incidence of mental illness may be higher than indicated. The findings nevertheless suggest that although mental illness may be a contributor to some incidents, a more extensive "whole of life" perspective would be beneficial to aid improved understanding of mass shootings. Importantly, the heterogeneity among perpetrators highlights the importance of treating mass shooting perpetrators as individuals, and to bear in mind that although perpetrators may share some similarities, each individual case will have its own unique features.

A number of incident characteristics are consistent with findings from the United States. Private locations were the most common settings for mass

shootings, with the majority of offenders being men who killed their family members or others known to them (e.g., Fox & Levin, 2015). Incidents where no victims (or intended victims) were known to the offender were extremely uncommon. Furthermore, in keeping with observations from the United States, public mass shootings in Australia tended to involve younger perpetrators, relative to those who committed private shootings. Unlike the United States, Australia has not experienced a mass shooting in the offender's current or former school or workplace; the reasons for this difference are not clear. Australian public mass shooters appear as likely to use multiple firearms as public mass shooters in the United States (Lankford, 2016a).

Mirroring Lankford's (2015) observation about public shooters who died at the conclusion of the incident is that half the Australian offenders took their own lives. Interestingly, however, in terms of potential similarities and differences between public and private shootings in Australia, in this study, half of the private incidents also concluded with the perpetrator's suicide. This suggests that while a number of mass shooting events may resemble homicide-suicide more generally (e.g., Eliason, 2009), the occurrence of suicide does not appear, in the Australian context, to differentiate between public and private mass shooting perpetrators. While these specific observations may not apply in other countries, the overall percentage of suicides observed in the present study accords with earlier proposals that many mass shootings should be viewed not just in terms of the homicide event, but also as an expression of the perpetrator's own suicidality (e.g., Fox & Levin, 2015).

Life Stressors and Mental Illness

Irrespective of whether the shooting was public or private, offenders typically had troubled life histories, and the presence of one or more acute or chronic life stressors. While the precise nature of these stressors varied between individuals, and each individual case had its own pattern, common broad themes were rejection (romantic and/or social and/or workplace), failure to meet social milestones, family difficulties and conflicts, and financial problems. In keeping with observations by Levin and Madfis (2009) about school shootings in particular, findings suggest that mass shooting events, more generally, are unlikely to occur because someone "just snaps," but instead involve a complex interaction of individual and situational factors that have accumulated over a period of time. Although many people experience such challenges without resorting to violence, this finding highlights the importance of having in place social and other support systems for individuals experiencing difficulties. For example, relationship conflict/dissolution is a recognized risk factor for lethal violence in intimate relationships,

familicide, and homicide-suicide, irrespective of the method(s) used or the number of victims (Campbell, Glass, Sharps, Laughon, & Bloom, 2007; Dobash, Dobash, & Cavanagh, 2009; Eriksson & Mazerolle, 2013; Liem & Nieuwbeerta, 2010), and was present among many cases in this study.

Regarding mental illness, the findings are similar to results obtained in the United States (Fox & Fridel, 2016), and indicate that diagnosed mental illness, and severe mental illness (such as psychosis) in particular, does not appear to be commonly associated with mass shootings. The observation that some offenders had possible (although not confirmed) psychological conditions deserves further thought. Although it seems fair to infer that many offenders were "troubled," this does not necessarily equate to mental illness, and it is important to recognize that a person may have poor mental health even if they are not—in clinical, diagnostic terms—"mentally ill." Furthermore, it must be recognized that the presence of mental illness cannot be inferred from the presence of suicidal ideation. Research demonstrates that while mental illness is undeniably a risk factor for suicidal behaviors, not all individuals with suicidal ideation are mentally ill (e.g., Sveticic & De Leo, 2012).

It is, nevertheless, eminently reasonable to suggest that for some offenders in this study, had their signs of distress had been identified and acted upon, intervention may have been possible prior to the occurrence of lethal violence. This underscores the importance of community awareness of signs of psychological distress and how to respond to those signs (Kelly, Jorm, & Wright, 2007), to aid "troubled" individuals before they become "troublesome" (Fox & Fridel, 2016). It has been proposed that positive changes in mental health and mental illness awareness, as well as disclosure of illness and access to treatment, have occurred in Australia over the past two decades (Guiney, 2012; McManus et al., 2000; Reavley & Jorm, 2014); potentially, this may have influenced the incidence of mass shootings.

Furthermore, from a policy perspective, the fact that some offenders interacted with the health care system suggests that for a selection of at-risk individuals, intervention may be possible if professionals are educated and supported to respond to those situations. For example, there now exist legislative provisions around Australia to support health care professionals (including, but not limited to mental health care) reporting to police any individuals those professionals believe pose a danger to themselves or others, regardless of whether mental illness and/or firearm access is involved. Coupled with professional education programs, those provisions may create pathways to police responses and other forms of appropriate interventions that aim to support and monitor at-risk individuals, and prevent violence.

Legislative Interventions

It has been suggested that Australian gun laws offer an example for the United States (Obama, 2015); hence, it would be remiss to overlook possible relationships between legislation and mass shootings. In 1996, Australia prohibited semi-automatic rifles and shotguns, and pump-action shotguns, and made widespread changes to firearm licensing processes (e.g., mandatory background checks, disqualification from holding a license for persons with a history of violent behavior or various other criminal activities; see Baker & McPhedran, 2007). The changes align, respectively, with a "universal" approach to prevention (restricting types of firearms that may be accessed) and a "risk-based" approach to prevention (regulating who may legally access any type of firearm).

If the question "would offenders who held a gun license at the time of the incident be able to hold that license today?"[4] is considered, many offenders would be unlikely to obtain a firearms license under Australia's current system. For example, FD and JK, who had violent histories, and PM and PE, who had other forms of criminal history, would be excluded from legal firearm access under the post-1996 system. However, although the theory that licensing changes may have reduced mass shootings is intuitively appealing, it faces two challenges.

First, Australia's historical frequency of mass shootings is very low. Interestingly, most incidents occurred between 1987 and 1996. Public incidents were entirely absent in the periods pre-1987 and post-1996, even though the legislative regimes during those two periods differed markedly. This suggests broader factors—such as social and economic trends—may be relevant for understanding why most Australian mass shootings occurred within a 10-year period. Second, even prior to 1996, all jurisdictions had legislation empowering police to refuse licenses to persons considered unsuitable (or, to cancel a license, if already held). Potentially, enforcement of such provisions may have changed. For example, JK held a firearms license despite having been charged with a violent offense (R v Knight, 1989), possibly indicating a failure of enforcement rather than of laws of the day. Regrettably, data do not exist to enable assessment of this possibility. Second, given the historical use of various different firearms, including types still widely legally available in Australia (Australian Crime and Intelligence Commission, 2016), it is reasonable to infer that access to a certain "type" of firearm is not necessary for mass shootings to occur. This is consistent with observations from the United States (Fox & Fridel, 2016; Krouse & Richardson, 2015) and suggests restricting access to particular firearm types does not offer a satisfactory explanation for the infrequency of mass shootings in Australia.

Theoretical Implications

While the current study was not able to empirically test theories, the findings hint that frameworks applied to mass shootings in the United States—cumulative strain theory, developmental theory, and theories of "failed masculinity" (Harwood, 2011; Kalish & Kimmel, 2010; Levin & Madfis, 2009; Madfis, 2014; Rice & Hoffman, 2015; Thompson & Kyle, 2005)—may translate to other countries. The frequency with which life stressors were noted offers tentative support to strain theory as a useful framework for both private and public shootings. However, for some cases, the histories and circumstances of offenders seem consistent with developmental theories (e.g., cases where offenders were not able to forge meaningful connections with peers), while in other cases, offenders' situations (such as relationship breakdown or unemployment) lend themselves to "failed masculinity" theory. Indeed, there were many cases in which elements of all three theories appeared to be present, or where a factor such as unemployment, for example, could be interpreted from more than one theoretical perspective.

It would be beneficial, in future, to consider whether a model incorporating elements from all three theoretical paradigms may be validly developed and applied to mass shootings. It would also be valuable to consider how these theoretical dimensions of mass shootings may connect with policy development. For example, if "failed masculinity" plays a role in these incidents, then this may highlight the importance of programs designed to challenge gender-role stereotypes and expectations about how men "should" behave, as well as the types of social or personal milestones (such as income or breadwinner status) that are seen to characterize masculinity and which, if not met, may lead to strain.

Limitations

The study contains a number of limitations, with the absence of detailed information about some offenders already noted. It is vital to reiterate that the study was based on 14 mass shooting incidents over a 50-year time period, and thus limited to descriptive analyses. The study did not include nonfatal shootings. It is possible, for example, that shootings have continued to occur, but have resulted in fewer fatalities (potentially relating to improved response times and/or medical advances). Also, noting that many incidents involved three or more children plus a spouse/ex-spouse, the trend toward families having fewer children (Australian Bureau of Statistics, 2008) may represent a limit in current conceptualization of mass shooting events. Indeed, it should be noted that, in the United States, the statutory definition of a mass killing

has been revised downward to "three or more persons killed" (Federal Bureau of Investigation, 2013).

This numbers-based approach, however, points to a broader set of limitations and conceptual shortcomings associated with the focus much research into mass shooting events, including the present study, commonly takes—which is to define incidents based purely on the number of victims. Based on the current findings, as well as the prior body of research from the United States (e.g., Fox & Levin, 2015; Levin & Madfis, 2009; Madfis & Levin, 2013), there seem to be many different forms or types of mass shootings, each with their own distinctly different characteristics, antecedents, and motivations. Clearly, when these important nuances are considered, a purely numeric approach to mass shootings becomes problematic. From this, it is reasonable to suggest that future examination of mass shooting incidents and perpetrators would be enriched by a more comprehensive conceptualization of these events, which treats mass shootings as a far-from-unambiguous phenomenon and moves beyond the number of victims as its sole inclusion criteria.

Conclusion

The current study represents the only effort in existing literature to collate a wide range of different information about mass shooting incidents and offenders, outside the United States, over an extended time period of 50 years. It considers life histories and circumstances of perpetrators of both public and private shootings, with particular emphasis on life strains, mental illness, and violent or other criminal histories, and offers suggestive insights into ways in which some of these specific incidents may have been avoidable. While further study is needed, these observations provide new information about mass shooting incidents and offenders, and can help to inform international policy development.

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Notes

1. This decision was data-driven, based on the observation that the sole identified Australian mass shooting incident with multiple offenders was a shoot-out between two rival outlaw motorcycle ("bikie") gangs, involving several perpetrators from both gangs, some of whom also became victims. This incident is clearly not congruent with types of incidents included in other studies of mass shootings, nor does this incident accord with understandings of mass shootings that have been adopted in existing research.
2. It is proper to acknowledge that a number of state-sanctioned massacres of Aboriginal Australians occurred following White settlement of Australia; however, such acts were outside the scope and purpose of the present study.
3. Full offender names are available on request.
4. By definition, if an individual possesses a firearm without holding an appropriate license, they are not in legal possession of that firearm; this applies to MB and MGB, who did not hold licenses at the time of the incident. In the case of MB, records suggest he purchased his firearms from a lawful firearms dealer who did not verify the offender's licensing status. Legislative changes since introduced include severe penalties, including jail time, for firearm dealers who supply firearms to unlicensed persons.

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