

Shared Struggles? Cumulative Strain Theory and Public Mass Murderers from 1990 to 2014

Abstract

Scholars have urged a shift in research on mass murder from the creation of typologies to theoretically-rich, data-driven comparative examinations of the phenomenon. We seek to redress such calls in two ways. First, we analyze a unique sample of public mass murderers through the multi-stage explanatory model of cumulative strain theory. Second, we use a comparison group of similarly violent offenders – lone actor terrorists – to provide context to our findings. The results demonstrate that cumulative strain theory usefully describes the trajectory toward violence of public mass murderers, more so when a concept implicit in the theory – grievance – is made explicit.

Introduction

For almost two decades, scholars have urged a shift in mass murder research from the creation of typologies to more rigorous, data-driven examinations of the phenomenon. Specifically, several have recommended that research assess offenders within broader theoretical perspectives and employ comparison groups (DeLisi & Scherer, 2006; Dowden, 2005; Fox & Levin, 1998; Vaughn, DeLisi, Beaver, & Howard, 2009). Pointedly, Dowden’s (2005) review of the state of research on multiple murder examined 139 studies and found that among the least frequent analytic approaches was the explanation or development of theory. Our study seeks to redress such concerns in two ways. First, we analyze our unique and large sample (N = 115) of public mass murderers through the lens of the “cumulative strain theory” (CST) proposed by Levin and Madfis (2009) in their examination of mass shootings at schools. As there are no theoretical or pragmatic reasons to limit application of the model to school shootings, we

propose a more quantitative approach and ask whether a theory which seems to explain the path toward mass shootings by students is equally useful when applied to a larger and more diverse population of offenders. Second, we employ a comparison group of similarly violent individuals – lone actor terrorists. While their motivations differ (public mass murderers are personally motivated, whereas lone actor terrorists are primarily motivated by political, religious, or other ideological factors), both aim to commit violence in shared spaces and frequently use, or plan to use, similar weapons. Employing a comparison group of similar attackers in an examination of developmental experiences and antecedent behaviors brought into relief important distinctions that allowed us to more carefully delineate the trajectory toward violence of public mass murderers.

Literature Review

A substantial body of research on mass murderers has relied on either a single case study or a small number of case studies (Declercq & Audenaert, 2011; Dietz, 1986; Evseef & Wisniewski, 1972; Gallemore & Panton, 1976; Hempel, Meloy, & Richards, 1999; Meloy, 1997; Mullen, 2004; Rappaport, 1988). As a result, statistical comparisons between public mass murderers and comparison groups of like offenders has been limited (Delisi & Scherer, 2006) and researchers have generally not had data suitable for exploring lifecycle explanations of the phenomena (Fox & Levin, 1998). Existing studies have instead typically generated typologies of mass murder based on factors such as motivations and targets (Dietz 1986; Holmes & Holmes, 1994; Mullen, 2004). Even studies of mass murders and the related phenomena of “active shooters” and “mass shooters” (which focus on shootings, and not fatalities per se) that have employed larger samples and/or comparison groups remain largely descriptive (Hempel et al., 1999; Duwe, 2000, 2004, Meloy et al., 2004; Gill, Silver, Horgan, & Corner, 2016; Lankford,

2012, 2015a; Krause & Richardson, 2015). As with the case studies, these more quantitatively-oriented studies have led to the development of typologies (Palermo, 1999; Petee, Padget, & York, 1997; Fox & Levin, 2003).

Recently, scholars have begun considering mass murder through criminological theories (Lankford, 2015b; Kennedy-Kollar & Charles, 2013; DeLisi & Scherer, 2006; Piquero, Farrington, & Blumstein, 2003; Vaughn, DeLisi, Beaver & Howard, 2009). Of note is research that considers the potential role of Agnew's general strain theory (GST) in explaining mass murder (Fox and Levin, 2012; Fridel, 2017). Researchers have also sporadically made use of terrorists as comparison groups for public mass murderers (Horgan, Gill, Bouhana, Silver, & Corner, 2016; Lankford, 2012; Pyrooz, LaFree, & Decker, 2017). In a similar vein, researchers have begun to explore the inherent criminality of terrorism (Agnew, 2010; Chermak & Gruenewald, 2015; Clarke & Newman, 2006; LaFree & Dugan, 2004).

Cumulative Strain Theory

In 2009, Levin and Madfis proposed a five-stage "cumulative strain" model to explain a student's engagement in a mass shooting at school. Its components comprised chronic strain, uncontrolled strain, acute strain, the planning stage, and the event itself. The term "cumulative" is significant, as it underscores the belief that no single stage is sufficient to cause mass violence and that it may be more useful to attend to complex interactions of both distal and proximal factors in an offender's life. Although the model is predicated generally on a sequential advancement through the five stages, Levin and Madfis do not claim that all school mass shooters progress through all stages of the sequence, or that the sequence itself is static.

The first stage, *chronic strain*, is based on both Merton's (1938) framing of Durkheim's anomie theory to include structural barriers that cause some persons to be unable to achieve certain expected life objectives, as well as Agnew's (1992) broadening of the concept to include a wider range of negative outcomes in social, school, and work environments. As strain persists, it becomes chronic, potentially leading to a range of consequences including depression and anger, which in turn may lead to norm violations including crime.

The second stage, *uncontrolled strain*, reflects Hirschi's (1969) theory of social control, which contends that the bonds connecting an individual to social relationships (e.g., family and friends) and social institutions (e.g., school and work) discourage the individual from engaging in criminal behavior. Those who experience chronic strain and lack adequate connections to other persons and institutions are less likely to be able to abstain from anti-social behaviors, as their feelings of strain (and associated anger) will not be mediated by positive interactions.

The third stage, *acute strain*, is the result of a short-term injury or insult that the individual experiences as being particularly disastrous, and which critically impairs the ability to control feelings of despair and anger. While incidents causing acute strain can be of the same type as chronic strain (e.g., relating to work or romantic relationships), the acute strain is experienced as more catastrophic, likely because it comes after a series of failures have already subverted the individual's resiliency. While chronic strains are more akin to precipitating circumstances, acute strains are more akin to the catalyst that immediately precede violent action.

Following multiple instances of chronic, uncontrolled, and acute strains comes the *planning stage*. Research has consistently shown that most mass murders are the result of considered and thoughtful action (Fox & Levin, 1994; Newman et al., 2004; Vossekuil, Fein,

Reddy, Borum, & Modzeleski, 2004) and that only a small portion of mass murderers are psychotic at the time of their attack (Holmes & Holmes, 2001). Committing mass murder is unlikely to be simple, and a certain amount of preparation is usually necessary, from locating a site with targets of interest and/or a suitable number of victims, to obtaining necessary weaponry and anticipating and avoiding security measures (Levin & Madfis, 2009; Madfis & Levin, 2013).

The final stage is *the event* itself. Levin and Madfis conceptualize this stage through the routine activities theory of Cohen and Felson (1979), which posits that crime occurs where suitable targets are available, effective guardians are absent, and motivated offenders are present. Levin and Madfis find the routine activities perspective is useful in explaining a range of school shooting offense characteristics, from choice of victims and location, to more practical considerations such as the choice of weapon and time of day for the assault.

Importantly for the present study, CST is not inherently limited to murderous attacks at educational institutions by students, although that is where it has previously been used (Bonanno & Levenson, 2014). The criminological theories from which the model is derived – strain theory, social control, and routine activities – are commonly applied to a range of adult offenders engaged in diverse criminal behaviors. Moreover, Levin and Madfis describe CST in relation to various forms of adult mass murder. For example, they note that workplace mass murderers and family annihilators generally suffer from chronic strains, and that these same adults are marked by uncontrolled strain as they “are almost always socially isolated and lacking in both conventional and deviant social bonds” (p. 1233). In sum, neither the theories embedded in the model nor their application constrains the model to school shootings or youthful offenders.

Methodology

Sample and Data Collection

A recurring challenge in prior research on mass murder is the perennially-shifting definition of what constitutes a mass murder. Some criteria include offender motive (Hempel et al., 1999; Rappaport, 1998), type of weapon used (Hempel et al., 1999) and number of wounded (Dietz, 1986). However, such criteria are generally not consistently applied in the literature. Despite this, there remains widespread agreement that a mass murder involves multiple victims killed at one (or multiple but geographically close) location(s) over a relatively short period of time (Dietz 1986; Holmes & Holmes, 1992; Hempel et al., 1999; Fox & Levin, 1998, 2003; Krouse & Richardson, 2015), although the intentionally imprecise temporal and geographic parameters may lead in some cases to overlap with other classifications, particularly spree murders (Krouse & Richardson, 2015). There is less agreement about the minimum number of victims required to define a murder event as “mass”. Some researchers use a threshold of two victims (Palermo & Ross, 1999), others use three (Dietz, 1986; Holmes & Holmes, 1992, 1994, 2001; Petee et al., 1997), and still others use four victims (Duwe, 2000; Fox & Levin, 1998, 2003, Krouse & Richardson, 2015).

For the following reasons, we use the threshold of four or more victims (not including the offender). First, while the distinction between two or three victims on the one hand and four or more victims on the other hand is somewhat arbitrary, the higher threshold serves a practical purpose – separating multiple killings from homicide generally (Fox & Levin, 1998). Recent neurocognitive research found support for considering mass murderers as a separate criminological subtype from single victim murderers (Fox, Brook, Stratton, & Hanlon, 2016). As the definition of mass murder edges closer to the modal single victim murder, the distinction

between the two blurs. Second, in its 2005 report: *Serial Murder: Multi-Disciplinary Perspectives for Investigators*, the FBI used four or more victims (not including the offender) as the demarcation line for mass murder. Although not created by law, that definition resulted from considered reflection by leading academics (criminologists, psychologists, forensic psychiatrists), and practitioners (state and federal law enforcement officials and prosecutors) brought together by the FBI to clarify issues related to multiple murders. This threshold was also recently used by the Congressional Research Service researchers (Krouse & Richardson, 2015) in a study of mass murders with firearms. Third, in mass murder studies (such as the present one) that rely on open source research methods, the number of victims is an important determinant of media coverage (Duwe, 2000, 2004) and we focused on those events most likely to yield usable data.

For purposes of comparison with our sample of lone actor terrorists (who operate in the public domain), we narrowed our parameters to mass murders occurring largely in public places and not involving exclusively family members. Thus, we excluded events that involved only or primarily intimate partner violence occurring in the home, as well as the broader category of familicides occurring in the home. There are also theoretical grounds for separately considering public mass murders. Broadly, “domestic/familicide” mass murders are often treated in the literature as conceptually distinct from mass murders of non-family members and/or mass murders in public places (Holmes & Holmes, 1992; Petee et al., 1997). The FBI’s Crime Classification Manual distinguishes familicide from other mass murders (Douglas et al., 2006). In addition, although familicides are perhaps 40% of all mass murders (Fox & Levin, 2003; Krouse & Richardson, 2015), the cases that generate the most media attention take place in public settings and involve at least some victims who are not related to the offender (Duwe,

2004). Given the sometimes-fluid nature of these events, we used our judgment regarding the inclusion/exclusion criteria in a handful of cases, which is not unusual; Krouse and Richardson (2015) acknowledge including among their 66 mass public shootings four incidents whose circumstances suggested that they could also be considered familicides.

We excluded mass murders that appeared to result from underlying crimes (typically felonies such as robberies, drug dealing, etc.), as well as gang and/or organized crime activities, since practitioners generally consider the motivations of these offenders distinct from those of the individuals discussed in the present study (Madfis, 2014). In addition, research on media coverage has also shown that felony-related mass murders are among the least newsworthy mass murders (Duwe, 2000). Finally, we excluded the minority of mass murders with more than one offender (Krouse & Richardson, 2015). Inclusion of multiple-offender events would necessitate consideration of group dynamics in decision-making. Research demonstrates that lone- and group-offenders differ in a number of important ways related to strain among both terrorists (Gruenewald et al., 2014; Corner & Gill, 2015; Gill, 2015) and criminals (Hauffe & Porter, 2009; da Silva, Woodhams, & Harkins, 2014). Limiting our sample to single-offender events also facilitated comparison to the lone actor terrorists who, by definition, commit attacks unaccompanied by others (Schuurman et al., 2018).

We collected data using open source research methods. Similar studies regarding attempted assassinations of public officials, fatal school shootings, active shooter events, terrorism, and violence affecting institutions of higher learning have relied on open source research (Drysdale, Modzeleski, & Simons, 2010; Fein & Vossekuil, 1999; Gill, Horgan, & Deckert, 2014; Langman, 2009, Lankford, 2012; Newman, Fox, Roth, Mehta, & Harding, 2004;

Vossekuil et al., 2004). We limited our sample to post-1990 events as most of our data was collected using the LexisNexis archive, which is much less robust before 1990.

To identify our sample, we first examined the academic literature on mass murderers, producing a list of names that fit our criteria. We located additional offenders through databases commonly used in mass shooting research (*Mother Jones*, *USA Today*, and *Mayors Against Illegal Guns*). Given the open-source research method, we also conducted tailored searches using specific terms (e.g., “mass murder,” “mass shooting,” “public shooting”) on LexisNexis, Google, and Google-scholar. We searched the FBI’s Supplementary Homicide Reports (SHR) to confirm the incidents we had already collected (to the extent possible, given the known weaknesses in SHR data collection) and to identify offenders who may not have been captured by other sources. Finally, we confirmed the validity of each offender on our list through the process of collecting open-source data, which was available for each offender on our list. Ultimately, 115 offenders met the specified inclusion/exclusion criteria. While there is no way to know if we found every mass murderer who fit our parameters, we are confident that we found the overwhelming majority as our dataset is very much in line with recent comparable research. Using definitions like ours and gathering data primarily from the SHR, Krouse and Richardson (2015) identified 66 mass public shootings (with four or more killed) over a 15-year period (1999-2013; 4.4 events per year). During that same 15-year period, we found 88 public mass murders (1999-2013; 5.9 events per year), and over the longer 25-year period of our study, we found 115 public mass murders (1990-2014; 4.6 events per year) (although nine mass murderers in our overall sample used a weapon other than a firearm).

We collected data from open source news reports, sworn affidavits, and, where possible, court records. Most sources came from tailored LexisNexis searches. We also located data in

online public record depositories such as documentcloud.org, biographies of mass murderers, and relevant scholarly articles. We modeled our codebook on the codebook used for data collection with our comparison group of lone actor terrorists. The codebook contains more than 180 variables (many with sub-parts) covering four major areas of theoretical interest: demographics, antecedent event behaviors, event specific behaviors, and, if the offender survived the event, post-event behaviors.

Three trained coders independently coded each observation, after which we reconciled the results in two ways. First, we reconciled each coder's work with that of the other two coders. In cases of disagreement on a specific variable, the first author, who reviewed all coding for each offender, determined the appropriate response. As part of this second-stage reconciliation, the first author took into consideration the trustworthiness of the sources relied upon by the coders (e.g., records of court proceedings were viewed as more reliable than media reports immediately after the event), as well as the specific information contained in the source (e.g., official statements from law enforcement officials versus comments made by those merely acquainted with the offender). The result was a single set of reconciled data for each offender.

We obtained data for the comparison group from a previous study of lone actor terrorists by Gill et al. (2014), which used a substantially identical data gathering methodology as the present study. For that study, terrorism was defined as the use or threat of action where the use or threat is designed to influence the government or to intimidate the public and/or the use or threat is made for the purpose of advancing a political, religious, or ideological cause. The sample comprised 119 individuals who engaged in or planned to engage in terrorism within the U.S. and Europe and were convicted for their actions or died during the commission of their offense. We culled from that dataset only U.S. subjects, yielding a sample of 71 lone actor

terrorists who represented a wide range of ideological orientations (32.4% right-wing; 29.6% single issue (e.g., abortion); 29.6% religious; the remaining 8.4% nationalist, left-wing, other, or unknown).

While a lone actor terrorist attack in which four or more people are killed could also be considered a public mass murder, for purposes of this study we considered the categories as distinct and assigned each offender to one group or the other based on whether the offender's motivation was personal/idiosyncratic (e.g., directed at a former employer, stemming from a dispute) or terrorism (e.g., aimed at furthering a political, ideological, or religious agenda). In general, we encountered few problems in this process, but the aptness of using lone actor terrorists as a comparison sample is underscored by the difficulty in using this binary classification in a handful of cases such as Jim David Adkisson and Elliot Rodger.

In 2008, Adkisson killed two people and wounded seven at a church in Tennessee that his ex-wife had attended. Police found a four-page suicide note/claim of responsibility in his car (he survived the event). While he wrote of his financial challenges (and later admitted that his unemployment led to depression and anger), the note is replete with political justifications in which he essentially blames his problems on the wider political processes, calls the Democratic party an ally of terrorists, labels liberalism as the major problem facing the country, and describes the church he targeted as a cult, filled with un-American "vipers" that embraces perverts. In his own words, he characterized his actions as a "hate crime," "political protest," and a "symbolic killing" in which he was doing "something good for the country" by killing "Democrats." Contrast that with Rodger, who in 2014 killed six in the California college town of Isla Vista. His lengthy testimonial (mailed just prior to his attack) has some language consistent with a political manifesto (e.g., his animosity toward inter-racial couples).

Nevertheless, the bulk of this testimonial and his separate YouTube video discuss his lonely suffering, his growing rage at the women and girls who gave their affection to others, and his desire to punish those who found the romantic and sexual success to which he could only aspire.

Although both men justified killing after experiencing a range of interrelated personal, financial, and social setbacks, the genesis of Rodger's public violence was his acute personal misery, in contrast to Adkisson's use of public violence as a denunciation of the wider culture and as the means to make a political statement. We place Rodger in the public mass murder sample. Even had Adkisson killed four people, we would have placed him in the lone actor terrorist sample. So, while the line between public mass murders and lone actor terrorist events is not always clear, our decisions were based on a thoughtful review of the available evidence.

Analysis

We compared the samples of public mass murderers and lone actor terrorists through the five sequential stages of CST. It is important here to note a limitation characteristic of open source methodology, which is that media reports typically do not address all the myriad biographical details relevant to researchers. Although we selected variables presumably of interest to the public and of the type we could reasonably expect the media to cover, no sources exhaustively listed experiences the offender did *not* have (e.g., the offender was never unemployed), or behaviors the offender did *not* engage in (e.g., the offender did not make dry runs prior to the event). We treat each variable dichotomously (the answer is either "yes" or "not enough information to suggest yes") for both public mass murderers and lone actor terrorists.

Results

We were conservative in assessing what constitutes “strain.” Presumably, all people regularly confront obstacles to happiness and success, and most possess adequate resources and coping skills to navigate these challenges without causing harmful stress to themselves. We took as evidence of strain only conditions that would likely have had an adverse impact on the individual and which are commonly recognized as being difficult (e.g., being unemployed, facing eviction), or were contemporaneously noted by the offender as causing significant distress (e.g., in conversation with family or friends) and/or by those around the offender (e.g., work files, court records). For all comparisons between the public mass murderer and the lone actor terrorist samples, we used 2 x 2 chi-squared analysis or Fisher’s exact test where appropriate.

Data

Chronic strain (frustrations occurring up to six months before the event)

The data show that the public mass murderers, who were overwhelmingly male (97%), struggled to accomplish commonly identified positive goals and experienced circumstances and exhibited behaviors inimical to the achievement of lasting social, financial and emotional stability. For some, struggles may have been related to having been born outside the U.S. (19%); barriers traditionally faced by immigrants (e.g., language skills, difficulty documenting employment history) may have affected the ability of these offenders to thrive across a range of expectations. For nearly a third, their highest level of education was high school, and only 10% graduated from college. This lack of success in education is seemingly reflected in their employment circumstances, with 13% unemployed, 30% working in the service industry, and only 5% holding a professional position. In the years leading up to the event, 20% were under

significant employment stress (e.g., poor performance reviews, potential job loss), and 15% had financial problems beyond those generally resulting from their socio-economic status.

Aside from failing to advance much in two areas generally considered cornerstones of success in the United States – education and employment – many offenders struggled with mental illness. To capture all potentially relevant information we applied a definition of mental illness that was intentionally broad – even childhood and adolescent manifestations of certain disorders, such as attention deficit hyperactivity disorder, were included as mental illness. In addition, we accepted as evidence of mental illness as wide a range of reasonably reliable facts and statements as was possible. Nearly half had at least one indicator of mental illness (47%). Evidence of mental illness was most commonly a diagnosis by a medical professional (26%), followed by evidence of either the possession of psychiatric medications, participation in counseling, or both (20%) and self or family reports (17%) (some offenders had multiple indicators of mental illness). We did not consider all reports of mental illness sufficiently reliable to conclude that the offender had mental illness. In 6% of cases we took as evidence of mental illness suicide attempts or suicidal ideation prior to the event, particularly where other indications supported the conclusion that the offender was mentally ill. Many offenders also had a history of substance abuse (44%). Mental illness and substance abuse co-occurred in 18 offenders, with 76% of the sample experiencing one of these issues. They were also significantly involved with the criminal justice system, with over half having been arrested, over 40% having been convicted, and over a quarter having been incarcerated.

The sample also experienced a significant amount of non-trivial negative personal interactions that can reasonably be viewed as likely to cause long-term strain. Over a third had a significant problem in a meaningful personal relationship, 11% felt that someone important to

them did not care about them, nearly a quarter felt that they had been degraded in a social setting, a quarter felt that they had been the target of an injustice, and 19% believed that they had been disrespected. These interactions may in part explain the degree of offenders (31%) displaying contextually inappropriate amounts of anger. Overall, 63% of the sample suffered from long-term stress that had a negative effect on their lives. Results of the comparison between the public mass murderers and the lone actor terrorists are shown in Table 1. While some similarities are apparent, public mass murderers were significantly more likely to experience chronic strain.

[Table 1 about here]

Uncontrolled strain (the absence of prosocial relationships in the five years before the event)

A little more than a quarter (26%) of public mass murderers were described by others who knew them well (e.g., family, co-workers, neighbors) as being socially isolated, and most offenders lived with at least one other person (24% lived alone at the time of the event). Twenty nine percent were in a relationship at the time of the event (16% partnered, 13% married). Of course, it is possible to be in a relationship which does not have a pro-social effect; nevertheless, the relationship variable indicates that a substantial portion of public mass murderers were at a minimum able to establish a substantive connection with others. Table 2 shows the result of the comparison with lone actor terrorists on variables measuring uncontrolled strain. The samples had similar proportions of relationship statuses, but in general, public mass murderers showed less evidence of uncontrolled strain than lone actor terrorists.

[Table 2 about here]

Acute strain (frustrations occurring in the six months prior to the event)

In the six months preceding their attacks, public mass murderers faced a variety of non-trivial negative life circumstances that could be perceived as disastrous to an individual whose personal resources had already been compromised by previous failures and/or who has faced persistent stressors. Over half the public mass murderers became unemployed (29%) or encountered serious stressors at their place of employment (24%). Nearly a fifth had difficulty meeting their financial obligations and 13% changed address in the six months before the event (a commonly stressful enterprise that might signal the end or diminishment of important social connections). They also met challenges in other areas, with a quarter finding problems in meaningful personal relationships, and between 10% and 17% feeling that they had been degraded, been the target of unjust treatment, been disrespected, or had someone important to them indicate that they did not care for the offender. In addition, more than a third were inappropriately angry or experienced an elevated level of stress. Table 3 shows that public mass murderers generally experienced more acute strains than lone actor terrorists.

[Table 3 about here]

Planning stage (preparation and planning for the event)

It is noteworthy that 15% of public mass murders appeared to be spontaneous incidents arising from physical or emotional conflicts immediately prior to the attack, and in which the offender exhibited no meaningful planning behaviors. In the remaining 85% of cases, public mass murderers engaged in relatively few planning and preparation activities. Fifteen percent tried to recruit at least one person for their attack, 15% planned a getaway, 14% made plans for further attacks, 8% made some noticeable pre-attack change to their appearance, and 7% had assistance in procuring weapons. They showed little interest in research with less than 10% reading materials about or by other mass casualty attackers or violent movements. Very few

public mass murderers met with other potential offenders either face-to-face (7%) or virtually (3%) or joined wider violent movements (6%). Similarly, very few engaged in dry runs of their attacks (4%), partook in any attack-related training (8%), or traveled as a precursor to the event (2%). Notably, 20% of the sample took drugs or alcohol just before the event, possibly blunting the effect of any planning (although the use of these substances might have been intentional effort to reduce anxiety or fear associated with the event). As shown in Table 4, public mass murderers were significantly less likely than lone actor terrorists to perform nearly all planning related behaviors and were significantly more likely to engage in the one behavior (drug or alcohol use just prior) that would potentially diminish the benefits of planning.

[Table 4 about here]

Event stage (location/targets/weapons)

Most (79%) public mass murderers had a history with their attack location (e.g., had worked or lived there). Nearly all (91%) targeted only people (as opposed to property), with 9% targeting both. Most offenders also (79%) had at least one discriminate target (i.e., a person or group of persons identified prior to the event) among their victims, although in some cases the offender did not kill the intended target, and in many cases the offender also killed persons who did not seem to be targets prior to the event. Over a quarter of the attacks involved multiple but geographically close sites. Very few public mass murderers (2%) employed an explosive device, with most (93%) using a firearm (the remaining weapons included cutting instruments and arson). More than half (56%) of these offenders died at or near the scene of the attack, either by suicide or at the hand of law enforcement. Table 5 show that events of public mass murderers and lone actor terrorists differ significantly across a variety of variables.

[Table 5 about here]

Discussion

The data broadly support the principal contention of CST – the trajectory toward public mass murder is built on repeated frustrations over time for individuals who also experience what they perceive to be catastrophic acute strains prior to an attack. We found considerable evidence of both chronic and acute strain for public mass murderers who appear to experience both at absolutely high levels and relatively high levels in comparison to lone actor terrorists. Our findings are consistent with a recent research into differences in general and acute strains suffered by non-extremist and extremist mass public shooters (Capellan & Anisin, 2018). Nevertheless, the results do not uniformly validate CST as we found less robust confirmation for the other hypothesized stages.

Support for uncontrolled strain is mixed. While some public mass murderers seemed to lack conventional and pro-social relationships, most established at least one substantive connection with another person, as demonstrated by the proportion of the sample in relationships. Of course, not all relationships have pro-social effects, but comparison with lone actor terrorists at least, public mass murderers experienced less uncontrolled strain.

The data provide little validation of the planning stage. In part, this may be explained by the 15% of public mass murders that appeared to be spontaneous. Nevertheless, while mass violence is, as Levin and Madfis (2009:1237) note, “not a simple criminal act to perpetrate,” there is scant evidence that offenders spent meaningful time or effort on operational considerations (e.g., research, reconnaissance, escape) that might be expected to typify the planning stage of an attack. By contrast, lone actor terrorists were far more likely to engage in almost all behaviors indicative of carefully designed attacks.

Finally, the routine activities approach that CST posits as shaping the event itself does not account for the predominate characteristics of public mass murder attacks. Public mass murderers were much more likely than lone actor terrorists to target persons identifiable before the event and attack at locations with which the offenders had a history, suggesting that public mass murders had less to do with the “opportunity analysis” of routine activities theory and more to do with historical personal interactions. This may be because routine activities theory is essentially a macro-level theory, useful in explaining crime by assessing criminal opportunities across communities and sub-units of those communities (Cohen & Felson, 1979; McNeely, 2015). While our findings are not inimical to routine activities theory (i.e., negative interactions are likely often related to routine daily activities), they do suggest that public mass murders are the result of something beyond the calculus involving available targets and a lack of guardians to protect these potential victims.

In general, our findings suggest that social control theory and routine activities theory do not meaningfully augment the fundamental approach of Levin and Madfis and from which their theory takes its name – cumulative strain. At least with respect to public mass murderers, we think it is more useful to consider CST as an elaboration of Agnew’s GST. We see three primary ways in which GST essentially accounts for the full range of concepts that Levin and Madfis include in their sequential model. Happily, this approach avoids one of the more contentious and still unsettled issues in the history in criminology – the wisdom of integrating theories (Krohn & Ward, 2016).

First, as conceived in GST, the effects of strains were *likely* to be cumulative after some undetermined threshold is reached (Agnew, 1992). So, the main contention of Levin and Madfis’ CST – that chronic and acute strains have an accumulative impact over time – fits

comfortably within GST. Indeed, a major strength of CST is its expansive search for strains throughout the lifetime of the offender, and we believe that adopting this approach has enabled us to describe more fully than prior studies the experiences and antecedent behaviors of public mass murderers.

Second, GST has a place for pro-social relationships (or lack thereof) that Levin and Madfis posited in their stage of “uncontrolled strain.” GST anticipates several constraints to nondelinquent and delinquent coping, among which is “conventional social support” (Agnew, 1992). The types of instrumental and emotional support envisioned by Agnew encompasses essentially the same issues that Levin and Madfis include in their model. Conceptualizing social supports in this way preserves a primary distinction between strain theory and control theory – strain theory contends that people are pressured into crime by negative affective states, while control theory contends that the absence of significant relationships with others frees people to engage in crime (Agnew, 1992). Since CST is premised on the overall effects of strain and not on the assumption that the lack of pro-social connections frees individuals to offend, it seems prudent to view social relationships as a possible constraint within GST. Our findings of mixed evidence of “conventional social support” (or, as CST puts it, “uncontrolled strain”) suggests that the presence or absence of pro-social relationships was not a crucial factor in the march toward violence of the public mass murderers. But, importantly for our sample, unlike social control theory GST also expressly accounts for *negative* relationships in which the individual is not treated as desired or expected by others thereby presenting a noxious stimulus/strain (Agnew, 1992). As shown in Tables 1 and 3, the sample of public mass murderers had substantial amount of non-trivial problems with their personal relationships, generally more than the sample of lone actor terrorists.

The third and perhaps most important way in which GST subsumes certain aspects of the cumulative strain theory arises indirectly from asking a question relevant to any act of premeditated violence – who will be the target(s)? CST only implicitly answers this question. While the acute strain that immediately precedes the planning stage could be related to bullying or unjust treatment by school administrators (or, in our study, a poor job performance review, problems in a personal relationship, etc.), CST does not speak to whether the eventual victims will be connected to this final strain, will be connected to some other facet of the offender’s life, or will simply be the next person(s) who cross the offender’s path. Unstated, but implied by CST, is that targets naturally arise from the circumstances that the offender experiences as an acute strain. Levin and Madfis (2009) write that after the acute strain, “[n]o longer feeling able to cope and feeling as if there is nothing left in life to lose, the potential shooter is inspired to *get even* and show the world” (emphasis added) (1237). The emotional reaction Levin and Madfis describe – the desire to *get even* – is evocative of what Agnew describes as the “most critical emotional reaction for the purposes of the general strain theory” – anger (Agnew, 1992, p. 59). Indeed, GST posits that the “key” emotion of anger will create a “desire for retaliation/revenge” (Agnew, 1992, p. 59 – 60). We found that this sentiment – to get even – did, in fact, play a pivotal role in many public mass murders.

Grievance

At least regarding public mass murderers, we believe that the best way to describe this perceived need for retaliation is through the concept of *grievance* found in the behavioral pathway model conceptualized in two US Secret Service studies, one involving assassinations of public figures and the other school shootings (Fein & Vossekuil, 1999; Vossekuil et al., 2004).

These (and following studies) theorized a route from idea to action comprising ideation, planning, preparation and implementation. The same phases were incorporated into a model of a “pathway to violence” (Calhoun & Weston, 2003), which proposes six milestones on the trajectory: grievance, ideation, research and planning, preparation, breach and attack.

In the threat assessment literature in which the pathway to violence model arose, a grievance is generally defined as the cause of the offender’s distress or resentment, a perception of having been wronged or treated unfairly or inappropriately. A grievance is a subjective experience that need not have an objective foundation; it can arise from actual slights and defeats, imagined wrongs, mental illness or some combination of these possibilities. More than a feeling of anger, a grievance often results in a desire, even a sense of mission, to right the wrong and achieve a measure of deserved justice (Calhoun & Weston, 2003; Fein & Vossekuil, 1999; Vossekuil et al., 2004). Characteristic of a grievance is that the offender attributes his or her own distress to an *external source*, something beyond the offender that has acted or is acting unfairly against the offender. This externalization of responsibility echoes the interplay between anger and blame found in both GST (Agnew, 1992) and CST.

Primarily taking as evidence the offender’s own words and/or writings, we found that 63.5% of offenders had an identifiable grievance. In 89% of those cases the grievance was against a specific person or entity (e.g., supervisor, governmental agency), in 24.7% of those cases the grievance was against a category of people (e.g., race, ethnicity, gender), and in 11% of those cases the grievance was against an idea, philosophy or movement (e.g., religion) (14 offenders had two types of grievance, and 4 offenders had three types of grievance). The prevalence of grievance we found is like that found in prior research. In their study of school shooters, Vossekuil et al. (2004) found that 75% of the attackers had a grievance against at least

one of their targets, and in their study of assassinations and near-attacks of public officials, Fein and Vossekuil (1999) found that 67% of their sample had a grievance, with 57% having a grievance against a target of attack.

The concept of grievance is complementary to strain analysis. The hypothesized diminishing of an offender's coping resources through chronic and acute strain can reasonably be seen as priming the crystallization of a grievance. And many of these chronic and acute strains (e.g., work stressors, financial difficulties, experiences of being degraded, treated unfairly) are of the kind that would likely allow the offender to identify a specific external source responsible for the offender's suffering.

Recognition of a grievance can provide needed context to the occurrence of an acute strain that acts as a "tipping point," in many cases taking the acute strain out of the realm of random occurrence in a string of unrelated failures and linking it to specific and identifiable belief or feeling held by the offender. In more than half the cases where there was an identifiable grievance (56.2%), a specific incident or experience related to the grievance appears to have played a role in the public mass murderer moving toward the attack (in 11 of the cases, the specific incident appears to have given rise to the grievance).

Grievance can also help make sense of the apparent lack of planning behaviors in the non-spontaneous public mass murders. That offenders spent little time or effort in operational planning, particularly in comparison to the lone actor terrorists, can be attributed at least in part to the fact that in many cases they already knew what they wanted to do – attack the person or entity that they perceived to be the cause of their suffering. Of course, facets unique to a terrorist attack (e.g., the need for a target related to ideology, the desire to maximize symbolic effect) might dictate operational decisions that could require additional planning efforts as compared to

public mass murderers, but the relative lack of preparatory behaviors suggests that, for many public mass murderers, formation of a grievance *is* the essential planning.

Similarly, grievance helps explain our findings concerning the event. For example, 62 offenders with a grievance also had a discriminate target, and 60 of those offenders (96.8%) attacked a discriminate target related to their grievance. Charles Thornton thought that for many years the city government unfairly targeted him and his business ventures, and in 2008 he stormed a city council meeting, shooting and killing five, including council members. Grievance also appears to inform where the attack takes place; 65 offenders with a grievance attacked at a location with which they had a history, and for 48 of those offenders (73.8%) their grievance was connected to the attack location with which they had a history. In 1994, Dean Allen Mellberg, whose dream was to be in the military, returned to the Air Force base from which he had been discharged and killed (among others) the psychiatrist and psychologist who had recommended that discharge. Additionally, the presence of a grievance might help explain the fact that nearly half of all offenders died by suicide or at the hands of law enforcement at the event. Fueled by a sense of mission borne from a perception of having been treated unjustly, the offender may have reached the overarching objective in his or her life and no longer have a reason to live – a decision perhaps more easily reached by an offender who has faced both chronic and acute strains.

Finally, and importantly, the concept of grievance might play a key role in distinguishing those who suffer strains and commit violence such as public mass murder from those who suffer strains but do not act violently (at least not on a scale of causing mass casualties). Given the vast range of experiences potentially encompassed by GST it is likely that wide swaths of the general population regularly encounter strain in their lives. In the original formulation of GST Agnew

recognized that individuals may react to strain in several ways, only some of which involve crime, and that many may cope by using a variety of cognitive strategies to minimize their suffering (Agnew, 1992). Specifically, though, he noted that those who blame their strain on others are more likely to commit crimes (Agnew, 1992). And, when he subsequently expanded on his theory, Agnew proposed that strains are most likely to result in crime when, among other things, they are seen as unjust and perceived as high in magnitude (Agnew, 2001). Assigning culpability to another for perceived undeserved distress is the very basis of a grievance, the presence of which may be useful for homing in on those facing a series of life difficulties who may be moving toward an attack.

Conclusion

Beyond its explanatory efficacy for school shootings, when CST is seen as an elaboration of general strain theory it proves to be a valuable approach for examining the trajectory of offenders toward public mass murder, especially when the implicit concept of grievance is made explicit. The holistic approach of assessing cumulative strains, in which both distal and proximal experiences and behaviors are considered, is an important step in moving the discussion of multiple murderers generally, and public mass murderers specifically, away from purely descriptive typologies. This is not the end, of course; there is much work to be done, including evaluating more precisely how the stages intersect at the individual level, determining whether there are “critical” levels of strain and/or strains in certain circumstances that actuate the move toward violence, and assessing whether the model is relevant to related offender types, such as domestic/family mass murderers and assassins of public figures. Our findings also recommend

studies focused on grievance formation. Ideally, these studies would address false positives, comparing offenders who have a grievance to a group of individuals who have a grievance but do *not* act violently, perhaps pointing to specific characteristics of those facing multiple life challenges who are more likely to externalize blame and then feel a need to “right the wrong” through violence.

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Table 1 – Prevalence of Chronic Strain

Variable	Public Mass Murderer (%)	Lone Actor Terrorist (%)
Male	97	99
Born Outside U.S.	19	23
Highest/HS**	31	14
College Grad*	10	24
Arrested	56	59
Convicted	43	58
Incarcerated	27	34
Mental Illness	47	39
Substance Abuse*	44	27
Service Industry	30	18
Professional	5	9
Unemployed > 6mosprior	13	24
Work stress > 6mosprior*	20	7
Financial Problems > 6mosprior	15	14
Problems – Personal > 6mosprior***	36	11
Not Care > 6mosprior	11	9
Degraded > 6mosprior*	23	9
Unjust treatment > 6mosprior	25	16
Disrespected > 6mosprior	19	16
Angry > 6mosprior	31	24
Long-Term Stress***	63	27

p* < .05 p** < .01 p*** < .001

Table 2 – *Prevalence of Uncontrolled Strain*

Variable	Public Mass Murderer (%)	Lone Actor Terrorist (%)
Socially Isolated**	26	51
Lived Alone**	24	44
Single/Never Married	34	38
Partnered	16	6
Married	13	20
Divorced	10	17

p* < .05 p** < .01 p*** < .001

Table 3 – *Prevalence of Acute Strain*

Variable	Public Mass Murderer (%)	Lone Actor Terrorist (%)
Work Stressor < 6mosprior***	29	4
Unemployed < 6mosprior	24	13
Financial Problems < 6mosprior	19	13
Problems-Personal < 6mosprior**	25	7
Degraded < 6mosprior*	17	6
Unjust treatment < 6mosprior	10	6
Disrespected < 6mosprior	11	6
Not Care < 6mosprior*	16	4
Changed Address < 6mosprior***	13	35
Angry < 6mosprior	36	24
Recent Elevated Stress < 6mosprior**	37	17

p* < .05 p** < .01 p*** < .001

Table 4 – *Prevalence of Planning Stage Behaviors*

Variable	Public Mass Murderer (%)	Lone Actor Terrorist (%)
Recruit Others***	15	85
Joined Wider Movement***	6	32
Help Procuring Weapons**	7	21
Read Propaganda by Offenders**	3	16
Read Literature About Offenders***	6	26
Read Literature from Wider Movement***	4	60
F2F Meeting***	7	44
Virtual Interaction***	3	24
Dry Runs***	4	34
Training**	8	24
Travel***	2	27
Changed Appearance	8	6
Planned Getaway	15	20
Planned Further Attacks***	14	55
Drugs/Alcohol Prior**	20	4

p* < .05 p** < .01 p*** < .001

Table 5 – *Prevalence of Event Stage Behaviors*

Variable	Public Mass Murderer (%)	Lone Actor Terrorist (%)
History with Location***	79	30
Targeted People***	91	48
Targeted Property***	0	13
Targeted Both***	9	32
Discriminate Target	79	70
Multiple Sites	28	16
Firearm***	93	45
Explosive Device***	2	48
Offender Died at Scene***	56	11

p* < .05 p** < .01 p*** < .001