Mass Outcome or Mass Intent? A Proposal for an Intent-Focused, No-Minimum Casualty Count Definition of Public Mass Shooting Incidents

Emily Ann Greene-Colozzi[1] and Jason R. Silva[2]

[1] School of Criminology and Justice Studies, University of Massachusetts Lowell
[2] Department of Sociology and Criminal Justice, William Paterson University

ABSTRACT

In this commentary, we propose a unifying public mass shooting definition that captures the generally conceptualized phenomenon but also expands the inclusion to all incidents regardless of casualty count. We suggest that public mass shootings be broken down into four outcome categories – completed, attempted, failed, and foiled – which have unique incident outcomes but share a common thread of mass intent. We argue for the importance of a no-minimum casualty count definition (thus including zero casualties) that emphasizes mass intent rather than the completion of the shooting. We highlight the value of and rationale for this definition by discussing the limitations of current victim criteria, and we conclude with a proposed strategy that emphasizes objective indicators of mass intent.

KEYWORDS

As this special issue illustrates, mass shooting definitional criteria remain a source of controversy and disagreement among academics and practitioners (see also: Duwe, 2020; Freilich et al., 2020; Huff-Corzine & Corzine, 2020; Silva & Greene-Colozzi, 2019). Published works often provide several pages in the methodology dedicated to defining the phenomenon of interest, and because of disagreement among scholars, many authors are also compelled to defend their rationale for the definition in anticipation of a dissenting reviewer. This rigorous attention to definition has been valuable for the field: encouraging careful consideration of methodology and database compilation for open-source scholars and setting a precedence for establishing clear-cut definitions in published articles. To this end, progress has been made toward making distinctions between different definitions and types of mass shootings. It is important to briefly illustrate these current advancements.

Drawing from the Federal Bureau of Investigation (FBI) definition of "mass murder," the Congressional Research Service (CRS) offers one of the broadest and most widely accepted mass shooting definitions: "a multiple homicide incident in which four or more victims are murdered with firearms—not including the offender(s)—within one event, and in one or more locations in close geographical proximity" (Krouse & Richardson, 2015, p. 10). Importantly, they developed and compared three mass shooting types: familicide, felony, and public. Familicide mass shootings refer to incidents involving the offender's immediate or extended family, most of whom are killed in private residences or sparsely populated locations. Felony mass shootings refer to incidents involving underlying criminal activity (e.g., robbery/burglary, drug violence, gang violence). Public mass shootings refer to incidents occurring in public or populated locations involving victims who are often killed indiscriminately.

CORRESPONDING AUTHOR   Emily Ann Greene-Colozzi   ✉   Emily_GreeneColozzi@uml.edu

Studies and datasets use variations of this mass shooting definition to examine all mass shootings (e.g., Duwe, 2020; Gun Violence Archive, 2021; Mass Shooting Tracker, 2021) and to compare the different types of mass shootings (e.g., Silva, 2022a; *USA Today*, 2018). Most scholars agree that there are important differences between public and private/residential mass shootings (Duwe, 2004, 2020; Schildkraut & Turanovic, 2022), and that private/residential mass shootings constitute unique forms of violence with critically different response and prevention strategies. For example, the perpetrators who commit these private/residential attacks tend to be psychologically and behaviorally different from public mass shooting offenders (Krouse & Richardson, 2015; Silva, 2022a). Additionally, the seemingly random victims involved in public mass shootings means these incidents often receive more public attention, media coverage, and political discourse (Duwe, 2020; Silva & Capellan, 2019). While we acknowledge that familicide and felony shooting incidents are equally tragic to public incidents, the current commentary is specially focused on public mass shootings.

Public mass shooting scholars generally agree on three definitional elements: (1) the incident must occur in public or populated locations; (2) it must involve at least some random and/or symbolic victims; and (3) it should occur over a short period of time (usually within 24 hours; see Peterson & Densley, 2019; Schildkraut & Elsass, 2016). This definition largely aligns with the FBI's (2021) definition of active shooter incidents, which refers to individuals "actively engaged in killing or attempting to kill people in a populated area [using firearms]". The FBI definition includes cases that occurred in public, and it excludes cases where the shooter's actions were motivated by a separate criminal act, like gang or drug violence, as well as contained residential or domestic disputes (FBI, 2021). Thus, despite different names, examinations of public mass shootings and active shooter incidents are largely assessing the same phenomenon. However, there is one key distinction that separates the two: victim/casualty count.

In line with the CRS definition, much of the current public mass shooting research only includes attacks that involved four or more victim deaths. This minimum victim criterion is practiced by some of the leading scholars in the mass shooting field (Duwe, 2020; Fox & Levin, 2022), and incorporated into many of the most-cited publicly available mass shooting databases (e.g., The Violence Project, *The Washington Post*). However, we believe that a consequence of this definition is the exclusion of relevant cases characterized by mass shooting intent. In other words, they often exclude incidents that did not progress into a "completed" mass shooting (i.e., involving four or more fatalities) due to pre-incident exposure or situational and environmental aspects of the attack. While the FBI offers a broader victim count, many intended public mass shooting incidents are also excluded from the FBI's active shooter definition and reports.

To this end, we propose a unifying public mass shooting definition that expands the phenomenon to include predatory, intentional public shooting incidents regardless of casualty count. Below, we outline the value, rationale, and strategies for expanding the casualty count to include fewer than four shooting victims and argue for the importance of a no-minimum casualty count definition (including zero victims) of public mass shootings that emphasizes *mass intent* rather than the completion of the shooting.

Proposed Public Mass Shooting Definition

Drawing from previous research (Freilich et al., 2020; Newman et al., 2004; Schildkraut & Elsass, 2016; Silva, 2021, 2022c; Silva & Greene-Colozzi, 2022a), we propose the following definition:

> A public mass shooting is a gun violence incident (or intended incident), perpetrated by (or intended to be perpetrated by) one or two offenders,[1] targeting one or more public or populated locations, within a 24-hour period. At least some of the victims (or intended victims) must be chosen at random or for their symbolic value. If the perpetrator(s) does not kill four or more victims, they must demonstrate behavioral evidence suggesting mass victim intent. A public mass shooting excludes any incident involving familicide or other criminal activity.[2]

Like the CRS breakdown of all mass shootings into three victim type- and location-based categories, we propose a breakdown of public mass shootings into four casualty-count and target-reached outcome categories: completed, attempted, failed, and foiled. Each outcome category is defined below.

Aligning with the most commonly accepted definitions, a *completed mass shooting* is an incident involving four or more fatalities (excluding the perpetrator). We strongly suggest researchers use the term "completed" mass shooting instead of the phrasing used in previous public mass shooting research measuring "success". This alternative phrasing avoids glorifying offenders as being "successful".

An *attempted mass shooting* is an incident involving fewer than four deaths, but at least one gunshot casualty (fatality or injury). These shootings are sometimes referred to as active shooter incidents, although examinations of active shootings also include completed and failed outcomes (FBI, 2021; O'Neill et al., 2016). We suggest researchers use the term "attempted" mass shooting instead of active shooting or active shooter incident to avoid confusion. In other words, the perpetrator attempted to kill four or more individuals (and was able to incur at least one gunshot casualty) but did not reach the completed fatality threshold. For example, in 2019, a 19-year-old opened fire at a synagogue after bringing a semi-automatic rifle and a tactical vest containing five magazines with ten rounds each (Paul & Mettler, 2019). The shooting incurred one fatality and three injuries before his rifle malfunctioned. Given the amount of ammunition he brought to the scene, his predatory crime scene behavior (roaming and searching out new victims), his attempt to livestream the shooting, as well as his pre-incident actions (posting a manifesto online prior to the shooting), we would classify this case as an attempted mass shooting.

A *failed mass shooting* is an incident involving zero victim casualties, but the perpetrator arrived at their intended target with their firearm, and they tried to carry out their attack on that day. This type of mass shooting progresses beyond the preparation stage (meaning it was not pre-operationally foiled) and the shooter successfully arrived at and opened fire (or tried to open fire) on their intended target. However, during the event, they did not incur any gunshot casualties. For example, in 2019, a 22-year-old man opened fire fear near a courthouse before making his way to the glass door of the building and opening fire inside (Hutchinson, 2019). The perpetrator was armed with a semi-automatic rifle, he had 150 rounds of ammunition, and he was wearing body armor. However, there were officers on the scene who immediately returned fire and killed the shooter. This case would qualify as a failed mass shooting since the perpetrator had arrived at the scene with ample ammunition to harm many victims and opened fire, but external circumstances caused the shooting to fail without any victim casualties.

A *foiled mass shooting* is an incident involving zero victim casualties that did not progress past the planning and preparation stage into actualized initiation. While the incident was set into motion, it was stopped before the offender could arrive at or enter their target location with their firearm. In other words, the offender's plan did not fail during the incident, as they were thwarted before they could try and shoot victims at their intended target. For example, in 2019, a 13-year-old boy leaked information to fellow students suggesting he was planning a mass shooting targeting his middle school (Ellis et al., 2019). During a search of the boy's home, law enforcement seized an AR-15 rifle, 100 rounds of ammunition, a hand-drawn map of the school, and a list of students and staff members. However, this incident was thwarted before the student could finalize his plans and arrive at the target location, and it would thus be considered a foiled mass shooting.

Ultimately, this proposed definition incorporates the predatory active shooter component of the FBI's definition, allowing for attempted public mass shootings. It also aligns with the common academic definitions of public mass shootings and active shootings by excluding certain types of mass gun violence (felony and family). Further, it expands upon the FBI's active shooter concept by including intended public mass shootings that were foiled before initiation. Understood together, this proposed definition allows for a more robust sample/population size, while still providing a targeted and unambiguous assessment of a specific gun

violence phenomenon. We acknowledge the inherent challenge of measuring intent and provide guidelines and suggestions for measuring the level of mass intent associated with the shooting. By refocusing on the perpetrator's behavioral indicators of intent, rather than the completed-ness of the shooting, we feel our definition has the potential to expand understanding of public mass shootings through the inclusion of diverse incidents that are linked by a common theme of intent, rather than by outcome.

Importance of No-Minimum Casualty Count

A no-minimum casualty count definition of public mass shootings has value for both scholarly advancements and policy implications. It improves overall understanding of the phenomenon by including all mass shooting outcomes and therefore offers crucial insights for harm mitigation, intervention, and prevention. Additionally, this definition provides an opportunity for individual analysis of each outcome type, as well as comparative analyses among different outcome types, which can help explain why some mass shooters complete the attack while others are thwarted. Below, we highlight some empirical benefits of our proposed definition that we consider to be particularly critical.

Mass shooting studies are often limited by a small sample/population size. Public mass shootings remain one of the rarest forms of gun violence (Duwe, 2020). This broader definition will allow for more robust and advanced analyses of the phenomenon despite the low incidence baseline. The FBI's (2021) active shooter report has already demonstrated how lower minimum victim criterion can advance sample size. For instance, The Violence Project Database (Peterson & Densley, 2019) lists 94 incidents from 2000 to 2020, but the FBI active shooter reports document 373. The major difference between the incidents in The Violence Project Database and those in the FBI report is whether the shooting was completed, which we argue is situationally dependent. Furthermore, a no-minimum victim definition can be easily filtered by casualties should researchers want to examine only completed cases or only those cases with fatalities and injuries. Researchers and data-users have the option of modifying the data to accommodate a minimum casualty criterion, which is impossible to do with datasets that only collect cases meeting a certain fatality threshold.

Relatedly, the proposed definition allows researchers to perform important comparisons of attempted versus completed public mass shootings that are not possible with a single incident outcome of fatalities. Some studies use expanded datasets that include attempted public mass shootings to determine common mass shooter characteristics and factors influencing rates of victim casualties (Blair et al., 2021 Blau et al., 2016), but these continuous measures of casualties are still limited because they do not determine what makes attempted shootings unique from completed shootings. These comparisons have enormous potential to provide policy-relevant insights for harm mitigation during a public mass shooting event. Capturing these attempted public mass shootings also fills a gap in previous completed public mass shooting research by including incidents involving fewer than four deaths, which nevertheless involve more than four victims shot.[3] For example, the 2014 Fort Hood shooter "only" incurred three deaths (Department of the Army, 2015), and as such, this incident would not fit the four-death cutoff used in many completed public mass shooting studies. However, during this incident, an additional 12 victims were also injured via gunshot. We argue that the purposeful public shooting of 15 people should be considered a mass shooting regardless of the number of fatalities. To this end, our suggested inclusion of attempted mass shootings captures incidents where four or more people were shot, but systematic and situational factors such as police and EMT responses, victim or witness defense, and to some degree, luck, prevented the deaths of four or more victims.

While some scholarly databases have endeavored to include and measure attempted mass shootings, many expanded datasets often overlook failed mass shooting outcomes involving no fatalities or injuries. Failed incidents represent the ideal outcome of a mass shooting that reaches the intended target (i.e., no gunshot victims). Examinations and comparisons of failed mass shootings also provide valuable implications for harm mitigation and situational crime prevention during incidents that reach the intended target (Freilich et al., 2020).

Our initial research finds that situational crime prevention techniques, such as target hardening and access control, may help prevent bloodshed when individuals without legitimate access plan and initiate a public mass shooting (Greene-Colozzi, 2022; Silva & Greene-Colozzi, 2022a, 2022b). Additionally, internal measures, including lockdowns, place managers, and armed security, can also help prevent victimization in open access or semi-protected locations—even if the perpetrator successfully enters the building (Greene-Colozzi, 2022; Silva & Greene-Colozzi, 2022a, 2022b). Nonetheless, there is still much to be learned about failed mass shootings, and it is surprising how little attention has been directed at this outcome considering failed mass shootings should be the primary goal when prediction and prevention strategies are inadequate.

Finally, foiled incidents present the ideal outcome of a public mass shooting because there are no gunshot casualties, and there are no individuals psychologically victimized or traumatized by a failed mass shooting experience. We suggest that foiled shootings – not solely completed or attempted shootings – should be a primary focus for researchers aiming to prevent public mass shootings. These types of incidents have been largely overlooked and expanding the public mass shooting definition to include foiled cases can offer crucial insight for threat assessment techniques and public safety professionals. While examinations of foiled outcomes may not be appropriate in all public mass shooting studies, like those focused on situational crime prevention, that does not mean they should be excluded from studies entirely.

Ultimately, we believe that the systematic exclusion of attempted, failed, and foiled cases may result in biased conclusions pertaining to perpetrator psychosocial and emotional characteristics, planning and preparatory behaviors, and important pre-operational actions, such as leakage and gun obtainment. Nevertheless, there are challenges in defining and determining the intent to commit a public mass shooting when the outcome is ambiguous (i.e., zero casualties).

Considerations for Case Criteria and Database Compilation

Despite its value, the proposed definition does require special consideration when deciding what makes a public shooting a mass attack, if not the number of fatalities. Public mass shooters seek out random and targeted victims (Fox & Levin, 2022), but should their attacks result in a non-completed fatality outcome, it becomes difficult to assess the intent of the attack. Suicide is a common comorbidity with public mass shooting attacks (Lankford, 2015; Newman et al., 2004; Peterson & Densley, 2019), and in the absence of expressed intent, suicide notes, or legacy tokens, the motive and intention of a suicidal attack can be frustratingly abstruse to law enforcement and researchers. Nonetheless, we believe the benefits outweigh the costs, and we propose considerations when curating data collection, as well as strategies for addressing these potential limitations.

First, scholars should consider when to begin their examinations of public mass shootings. Many scholars use the 1966 University of Texas shooting as a starting point because it introduced the second wave of mass shootings (i.e., public mass shootings) into the public consciousness (Duwe, 2004; Peterson & Densley, 2019; Schildkraut & Elsass, 2016). However, given the reliance on open-source media coverage for building datasets, time period effects (i.e., older incidents receiving less coverage) are likely to influence these examinations (Silva & Greene-Colozzi, 2019). A consequence of these longer time periods is a decreasing likelihood of finding and coding cases from earlier years using open sources (Chermak & Gruenewald, 2006; Chermak et al., 2012). And, when broadening the definition to include attempted, failed, and foiled attacks, the risk of selection bias becomes even more pronounced. Thus, depending on the outcomes included in the research, scholars may choose to begin in 1999: the year of the Columbine shooting, which instigated a media frenzy and introduced the concept of a "mass shooter" into the modern American cultural lexicon. Regardless of what direction a researcher chooses to take with timeline range, clarity and transparency are key (for further insight, see Greene-Colozzi et al., 2021; Silva & Greene-Colozzi, 2019).

Second, including foiled plots requires scholars to determine threat credibility and assess whether plots were serious versus fantasies, police overreactions, or media hyperbole (Larkin, 2009). According to O'Toole (2000), some threats should be classified as more serious than others, yet studies are often vague in their definitions of threatened and thwarted violence. For example, Langman and Straub's (2019) study includes any averted school violence attack that is "planned... and prevented before any loss of life occurred", but they provide a limited indication of what this "planning" entails. This ambiguity surrounding what constitutes a planned attack may unintentionally populate the database with "false positives", or cases identified as a threat that were not likely to occur. However, studies of unsuccessful terrorist plots provide some guidance to address this issue, with scholars suggesting incidents must include a target or target type explicitly identified, and at least one overt step (e.g., collecting weapons, reconnoitering the target, etc.) made toward carrying out the plot (Dahl, 2011; Klein et al., 2017). In the mass shooting arena, Sarteschi (2016) offers similar guidelines for determining "high" level mass homicide threat credibility, defining high credibility "actionable" cases as those where the threatener possessed the means to carry out the threat (i.e., bombs, guns, etc.), or had plans or materials (i.e., manifesto, etc.) for securing the necessary means to carry out the attack (p. 89). While all threats should be taken seriously, the general goal for empirical data collection should be to avoid including false positives.

Finally, given the ambiguity that can occur with a lower or zero casualty definition, scholars should aim to narrowly focus on public mass shootings perpetrated to kill mass random (but intentional) victims. For example, consider the comparison of two hypothetical incidents occurring in a crowded mall. In the first incident, the perpetrator had a previous altercation with an acquaintance and upon seeing that acquaintance in the mall, opens fire with a single handgun in response to that specific altercation. However, due to poor aim and/or high emotion, this shooter kills several innocent bystanders. In the second incident, the perpetrator is an employee of the mall who was recently terminated and has returned with a gun and several hundred rounds of ammunition. This perpetrator targets former co-workers while also aiming and firing at random shoppers in the mall and manages to wound one victim before mall security intervenes. While both these incidents are seemingly public mass shootings, the perpetrator in the second case displayed a motivation to commit continuous random mass violence. The perpetrator in the first case unintentionally committed random mass violence by hitting collateral victims in pursuit of a single, specific target. We argue for exclusion of the first case because it lacked mass intent, and inclusion of the second case (despite the low casualty count) because the perpetrator displayed predatory behavior suggestive of mass intent.

An Empirical Strategy for Measuring Mass Intent

Currently, little public mass shooting research directly addresses the issue of mass intent outside of victim casualties. We propose a novel coding strategy that addresses the challenge of determining mass intent with varied incident outcomes. Specifically, we encourage readers to use observable behavioral indicators before the public mass shooting and during the incident to assign an intent rating score to each individual incident. Prior research has documented a wide variety of discrete public mass shooter behaviors and characteristics relevant to planning, preparation, and perpetration (Clemmow et al., 2022; Cowan & Cole, 2022; Fox & Levin, 1994; Newman et al., 2004; O'Toole, 2000), including bringing spare guns and ammunition, leakage, wearing a costume to invoke fear or mimic violent role models, aiming and firing at victims and witnesses, having a targeted or symbolic grievance against the location, stockpiling guns and ammunition, or training to shoot. Importantly, these indicators are readily observable to guardians and handlers (Felson, 1995) surrounding the perpetrator and to witnesses and survivors at the crime scene. By incorporating these objective indicators of intent, we become less reliant on the completed outcome of the shooting as confirmation of mass intent, which, as discussed above, is likely to be dependent on factors outside of the perpetrator's control.

We suggest coding thirteen behavioral indicators of mass intent during incidents that reach the intended target: public location, populated location, perpetrator aiming at victims, perpetrator aiming at others, verbal intent or

leakage, written intent or leakage, hunting behavior, costuming, displaying a known grievance against the location, having a hit list of targeted victims, obtaining a gun for the shooting,[4] training with firearms before the shooting, and bringing spare ammunition and/or firearms to the crime scene. Each of these indicators is reviewed briefly in Table 1, except for public and populated locations since these are inherent in the definition of a public mass shooting.

Table 1

Suggested Indicators of Mass Intent in Attempted and Failed Public Mass Shootings

Mass Intent Indicators	Rationale
Public	Inherent in the definition.
Populated	Inherent in the definition.
Aimed at victims	Evidence that the perpetrator aimed the gun and fired at victims indicates that at least some victims were purposefully shot, rather than accidentally shot due to poor aim.
Aimed at others	Aiming the gun and either misfiring or missing other people in the space (e.g., non-victims) could be taken as an indicator of mass intent. The action of pointing the gun and attempting to shoot, regardless of whether the projectile was fired or met its intended target, is suggestive of mass intent.
Verbal intent	Any form of pre-operational expressed intent, such as spoken leakage implying preoccupation with guns, previous mass shootings, killing and death, hatred towards potential victims, desire to hurt others, as well as explicit threats.
Written intent	Suicide notes, Internet posts, or manifestos expressing intent or the leakage described above, could serve as additional objective indicators of intent.
Hunted	Evidence that the perpetrator roamed throughout the targeted space in search of more victims to harm. This behavior might include trying to access locked doors, specifically searching out potential hiding places, and returning to locations multiple times.
Costume	Costuming may demonstrate fame-seeking behavior (i.e., imitating the apparel of previous shooters) or may be an attempt to strike fear into potential victims (i.e., dressing in militaristic clothing and gear).
Grievance against location	A location grievance may result in the perpetrator taking revenge against the physical location by targeting symbolic victims in addition to any targeted victims.
Known targeted victims	Having pre-incident "hit lists" of multiple victims objectively indicates intent similar to leakage and threats.
Gun obtainment	Specifically seeking out firearms or ammunition near the shooting (less than 2-3 months in advance) may demonstrate mass intent. At the very least, this indicates preparation and planning, and depending on the number of firearms obtained, could be a strong indicator of mass intent.
Train	Like gun obtainment, engaging in firearm training at a gun range or informally may suggest a perpetrator attempting to improve his/her aim in an effort to shoot more victims.
Extra ammo	A perpetrator intending to kill many victims, as opposed to a few specific, targeted victims, is likely to be more heavily armed and bring backup ammunition, magazines, and/or weapons.

As each of these indicators can be coded simply for presence (1=Yes) or absence (0=No), they can be easily summed into an aggregated scale of intent associated with each case or each crime scene. While some indicators are likely to be unreported or missing from media coverage, others are often mentioned in news coverage: whether the perpetrator was known to the location and victims (i.e., grievance and hitlist), if the perpetrator wore a costume, whether the perpetrator roamed and hunted during the course of the shooting, and finally, whether the perpetrator took care to aim individually at victims and witnesses. Even a partially complete scale of intent indicators can be useful for gaining insight into the perpetrator's motivation to commit a predatory public shooting. As a holistic measure, this scale can help quantify the unempirical concept of intent to kill.

Greene-Colozzi (2022) offers preliminary insight for the utility of this strategy - using this intent-focused data collection strategy to investigate situational crime prevention as a harm mitigation technique in the event of public mass shooting incidents. Public mass shootings included completed, attempted, and failed attacks,[5] with no-minimum victim criterion. The resulting dataset consisted of 494 public mass shooting incidents between 1966 and 2019. Every scene was coded for 13 indicators of intent described in Table 1. Table 2 displays the proportion of cases with each indicator, and Table 3 displays the prevalence of indicators across cases.

As shown in Table 2, a large majority of scenes were public and populated, and in most scenes, the perpetrator aimed at the victim. Many perpetrators also aimed at additional people in the space but missed or misfired, and brought spare ammunition to the crime scene in preparation for mass victims. Hunting behavior was also common, with well over half of perpetrators roaming and searching within the space for more victims. Written and verbal intent and training were less frequently observed, although these low percentages may be partially due to media effects and missing data rather than a true lack of incidence.

Table 2

The Proportion of Cases with Each Indicator

Mass Intent Indicators	Percent	N
Public	98.8	488
Populated	99.4	491
Aimed at victims	87.0	430
Aimed at others	54.5	274
Verbal intent	29.5	146
Written intent	19.2	95
Hunted	60.2	297
Costume	23.1	114
Grievance against location	44.6	250
Known targeted victims	39.2	193
Gun obtainment	33.2	164
Train	15.4	76
Extra ammo	68.2	336
N	494	

It is also important to consider the indicators as a scale rather than discrete variables (Table 3). When aggregated into a scale, the intent scores ranged from 2 to 13 indicators of intent. There were no cases with fewer than 2 indicators of intent since the dataset was developed to only include public and populated locations. Overall, the average intent score was 6.7 indicators out of a potential 13. Most incidents (70.7%) involved 6 or more indicators of intent and nearly all cases (99.2%) were characterized by at least three indicators of intent. Very few cases ($n = 4$) had only the public and populated indicators of intent. Thus, while not all cases were characterized by all intent indicators, most had three or more indicators, typically including the public and populated criteria and one or more additional behavioral indicators. As shown in Table 2, the more common behavioral indicators were aiming at victims, hunting, and bringing spare ammunition.

Table 3

The Prevalence of Indicators Across Cases

# Indicators	Frequency	Percent	Cumulative
2	4	0.81	0.81
3	23	4.66	5.47
4	46	9.31	14.78
5	70	14.57	29.35
6	88	17.81	47.17
7	85	17.21	64.37
8	74	14.98	79.35
9	48	9.72	89.07
10	35	7.09	96.15
11	14	2.83	98.99
12	3	0.61	99.60
13	2	0.40	100.00
Total	494	100.00	

An example case further emphasizes the importance of the no-minimum casualty criterion and the utility of an intent scale. In this case, the perpetrator made several verbal threats against his targeted location and bought hundreds of rounds of ammunition one hour before the shooting (Associated Press, 1993a; 1993b). He crashed his truck into the building and began shooting at potential victims from the car window at random, as people scattered and attempted to escape. This perpetrator fired at least 12 rounds from his gun in a relatively small office space, in addition to driving a large truck through the office, and did not willingly stop firing; he was shot by a responding security guard and rendered unconscious. Yet, this shooting resulted in zero injuries and zero fatalities. Based on the common public mass shooting definition prevalent in academia, this case would be excluded because the perpetrator did not kill or injure any victims. However, the intent score associated with this case was eight, indicating relatively high intent: the perpetrator made verbal threats, had a known grievance against the location, brought spare ammunition, targeted a public and populated location, aimed the gun at individuals in the space, hunted for victims, and obtained firearm supplies shortly before the incident. The incomplete nature of the shooting was due to the perpetrator's poor aim and a rapid response from a security guard. Exclusion of this case would limit studies assessing intervention and harm mitigation: his attack was one of the few in the database that was successfully stopped by an armed place manager. Furthermore, this perpetrator displayed observable warning signs before the incident that indicate he was at

risk of committing a shooting. These important warning signs would be notably absent in databases that implement a minimum victim criterion and aim to assess prediction and prevention, since this particular case would not be included.

Although the strategy outlined here has only been applied to failed, attempted, and completed public mass shootings, it is relevant for foiled incidents as well. In particular, we can modify the intent indicators in Table 1 to quantify intent displayed by foiled perpetrators. As discussed above, there are distinctions between "serious" mass homicide threats and unsubstantiated threats (O'Toole, 2000; Rocque et al., 2022; Sarteschi, 2016). Drawing from this literature and our own work (Silva, 2021, 2022c), we present Table 4 as a possible scale of intent for foiled public mass shootings. Unlike actualized shootings, this scale does not incorporate predatory crime scene behaviors, like hunting for victims or aiming at victims, but rather focuses on the planning and preparatory behaviors and warning signs exhibited by thwarted attackers. Since this scale has not been empirically validated with data, it is only an exploratory template of what scholars could use to determine intent for foiled cases. Given the renewed academic attention to the prevention and prediction of public mass shootings, there is much room for further development and empirical testing.

Table 4
Suggested Indicators of Intent in Foiled Public Mass Shootings

Mass Intent Indicators	Rationale
Verbal intent	Statements expressing intent, such as spoken leakage, threats, and/or internet videos.
Written intent	Written disclosure of intent or art forms that suggest leakage of violent intent, such as prepared manifestos, online or social media posts, prepared suicide notes, stories specifying targets and victims, journal entries, cartoons, or drawings depicting a mass shooting.
Grievance behavior	Documented grievance against the physical location, such as complaints, direct threats, or known altercations with individuals at the targeted location.
Target selection	The perpetrator explicitly identifies a target that they plan to attack. This could also include having pre-incident "hit lists" of multiple victims.
Gun obtainment	In combination with other indicators, the perpetrator either already has a gun, attempts to access a gun, or identifies how they plan to access a gun for the attack. Specifically seeking out firearms or ammunition near the shooting (less than 2-3 months in advance) may demonstrate mass intent.
Train	Like gun obtainment, engaging in firearm training at a gun range or informally may suggest a perpetrator attempting to improve his/her aim in an effort to shoot more victims.
Extra ammo	A perpetrator intending to kill many victims, as opposed to a few specific, targeted victims, is likely to stockpile backup ammunitions, magazines, and/or weapons.
Planning / preparation	This may include Internet searches related to previous mass shootings, researching police response time, obtaining or drawing maps and floorplans, obtaining costuming materials (e.g., body armor), surveilling the targeted location, breaching (i.e., conducting a dry run of the plan or testing security at the location), and building or acquiring other weapon materials (e.g., IEDs).

Conclusion

Our research has made progress towards advancing the insights that can be drawn from a broader (no-minimum) casualty count definition (see Author, 2022; Author, 2022a, 2022b; Author, 2021, 2022c). However, this definitional approach has not been widely adopted in academia, despite its growing prevalence in official sources (i.e., FBI and NYPD). Below, we present three suggestions for future researchers examining the public mass shooting phenomenon.

First, researchers should expand their victim count inclusion criterion to gain valuable insight for public mass shooting prevention, intervention, and harm mitigation. The proposed definition of public mass shootings highlights mass intent instead of the completion of the shooting. Datasets with minimum victim counts are only including cases that occurred in the absence of mitigating situational factors, like fast intervention or strong situational crime prevention. There is always the potential for the environment and the situation to influence the incident outcome, and open-source scholars implementing a minimum casualty criterion might be systematically excluding cases characterized by mass intent and protective environments. Not only does this affect comparisons of environmental and mitigation factors, but it is an especially problematic source of selection bias for scholars aiming to understand the warning signs, behaviors, and psychosocial profiles of public mass shooting perpetrators.

Second, we advocate for scholars to use the current public mass shooting definition and completed, attempted, failed, and foiled outcome terminology. Critics may argue that our proposed definition more so aligns with an active shooter incident than a public mass shooting. However, we believe that it is beneficial to combine these two types of public gun violence involving random/symbolic victims into a single public mass shooting concept differentiated by outcomes. This will not only strengthen the rigor of empirical research, but also reduce public confusion. Currently, the mass media and general public are familiar with the phrases "public mass shooting" and "active shooting", and understand both to be incidents of public, predatory gun violence committed by a highly motivated offender. We believe our definition, with its careful distinction between foiled, failed, attempted, and completed outcomes, could address some of the "mass confusion" (Fox & Levin, 2022) regarding public mass shootings.

Critics may argue that our proposal for an intent-focused, no minimum casualty count definition could contribute to journalistic abuse and further public confusion or concern. For comparison, after high-profile public mass shootings, media outlets often cite the number of mass shootings in America using the Gun Violence Archive and Mass Shooting Tracker data – which includes all mass shootings (i.e., felony and family), not just public mass shootings (Silva & Greene-Colozzi, 2019). The media thereby conflates all mass shootings with public mass shootings in the public consciousness. We do not want a consequence of this proposed public mass shooting definition to be the media's inflation of the problem, given the increased number of incidents included in future research and datasets using this definition. To this end, we stress the importance of researchers using the *completed public mass shooting* terminology when referencing traditionally considered incidents - involving four or more fatalities – in research and during media interviews. In other words, like the usage of *public* mass shootings - which has recently become more popular in media usage - we are attempting to also incorporate *completed* public mass shootings into popular consciousness, to address public confusion and concerns.

Finally, to address the challenges involved in measuring public mass shooting intent, we suggest a mass intent rating system that uses objective behavioral criteria before and during the shooting. This scale of intent can be used as a methodological check for database development, or as a substantive predictor or outcome in inferential models. As with victim count, the intent scale can be filtered to examine cases with higher or lower intent scores, thereby creating greater opportunity for individual assessment of unique categories of perpetrators as well as comparative assessments of the different intent typologies. We encourage our

colleagues to consider these guidelines and strategic suggestions in their unique database development, and to extend these intent criteria with future contributions. It is our hope that these strategies may nudge scholars and practitioners towards a more unified definition of the phenomenon and accelerate advancements aimed at identifying causes, correlates, and interventions for public mass shootings.

NOTES

1. To date, no completed public mass shootings (with four or more fatalities) in the United States have involved more than two offenders, and they overwhelmingly involved one offender. Thus, the one or two offenders' criterion offers a valuable baseline for measuring the phenomenon. Nonetheless, studies have identified a few foiled mass shootings (often targeting schools) involving more than two offenders (see Agnich, 2015; Larkin, 2009), and researchers may consider including these cases.
2. If examining public mass shootings outside of the United States, researchers should also exclude incidents involving state-sponsored violence, battles over sovereignty, and/or organized terrorism, especially when making comparisons with the United States (see Lankford, 2020; Silva, 2022b). These types of incidents are not really an issue in the United States and including them in global comparisons would be comparing "apples to oranges." However, public mass shooting definitions/studies should include ideologically motivated shooters without a direct connection to organized terrorist groups – such as the Charleston church (2015), Pulse nightclub (2016), and Buffalo supermarket (2022) shootings.
3. Like the Gun Violence Archive, which examines all mass shootings involving four or more gunshot casualties.
4. While we suggest obtaining a gun 2-3 months before the shooting may illustrate mass intent, it is important to note that some shooters acquire their firearms much further in advance. Additionally, simply obtaining a firearm 2-3 months in advance does not necessarily determine mass shooting intent. To this end, we suggest that this indicator be used only as further evidence alongside other (stronger) indicators.
5. This database does not include foiled attacks.

DISCLOSURE STATEMENT
No potential conflicts of interest were reported by the authors.

REFERENCES

Agnich, L. E. (2015). A comparative analysis of attempted and completed school-based mass murder attacks. *American Journal of Criminal Justice*, *40*(1), 1-22. https://doi.org/10.1007/s12103-014-9239-5

Associated Press. (1993a, July 11). Sex, SIIS frustrate Las Vegas gunman. *The Reno-Gazette-Journal,* p.15.

Associated Press. (1993b, July 13). Security beefed up at office. *Elko Daily Free Press,* p. 25.

Berkowitz, B., & Alcantara, C. (2021). The terrible numbers that grow with each mass shooting. *Washington Post*. https://www.washingtonpost.com/graphics/2018/national/mass-shootings-in-america/

Blair, J. P., Sandel, W. L., & Martaindale, M. H. (2021). Correlates of the number shot and killed in active shooter events. *Homicide Studies*, *25*(4), 335-360. https://doi.org/10.1177/1088767920976727

Blau, B. M., Gorry, D. H., & Wade, C. (2016). Guns, laws and public shootings in the United States. *Applied Economics*, *48*(49), 4732-4746. https://doi.org/10.1080/00036846.2016.1164821

Chermak, S. M. & Gruenewald, F. (2006). The media's coverage of domestic terrorism. *Justice Quarterly*, *23*(4), 428-461. https://doi.org/10.1080/07418820600985305

Chermak, S. M., Freilich, J. D., Parkin, W. S., & Lynch, J. P. (2012). American terrorism and extremist crime data sources and selectivity bias: An investigation focusing on homicide events committed by far-right extremists. *Journal of Quantitative Criminology*, *28*(1), 191-218. https://doi.org/10.1007/s10940-011-9156-4

Clemmow, C., Gill, P., Bouhana, N., Silver, J. & Horgan, J. (2022) Disaggregating lone-actor grievance-fueled violence: Comparing lone-actor terrorists and mass murderers. *Terrorism and Political Violence*, *34*(3), 558-584. https://doi.org/10.1080/09546553.2020.1718661

Cowan, R. G., & Cole, R. (2022). The pathway to violence and public mass shooters in mental health treatment before attacks. *Safer Communities*, *21*(1), 31-44. https://doi.org/10.1108/SC-05-2021-0020

Dahl, E. J. (2011). The plots that failed: Intelligence lessons learned from unsuccessful terrorist attacks against the United States. *Studies in Conflict & Terrorism*, *34*(8), 621-648. https://doi.org/10.1080/1057610X.2011.582628

Department of the Army. (2015 Jan. 23). *Report of investigation into the 2 April 2014 shooting incident at Fort Hood*. United States Department of Defense. https://www.hsdl.org/?abstract&did=761564

Duwe, G. (2004). The patterns and prevalence of mass murder in twentieth-century America. *Justice Quarterly*, *21*(4), 729-761. https://doi.org/10.1080/07418820400095971

Duwe, G. (2020). Patterns and prevalence of lethal mass violence. *Criminology & Public Policy*, *19*(1), 17-35. https://doi.org/10.1111/1745-9133.12478

Ellis, R., Moon, S., & Mossburg, C. (2019, November 22). 13-year-old arrested for allegedly threatening school shooting in Los Angeles. *CNN*. https://www.cnn.com/2019/11/22/us/school-shooting-plot-thwarted-in-los-angeles/index.html

Federal Bureau of Investigation. (2021). *Active shooter incidents 20-year review, 2000-2019*. https://www.fbi.gov/file-repository/active-shooter-incidents-20-year-review-2000-2019-060121.pdf/view

Felson, M. (1995). Those who discourage crime. In J. E. Eck and D. Weisburd (Eds.) *Crime and Place. Vol. 4, Crime Prevention Studies* (pp. 53-66). Criminal Justice Press.

Fox, J. A., & Levin, J. (1994). Firing back: The growing threat of workplace homicide. *The ANNALS of the American Academy of Political and Social Science*, *536*(1), 16-30. https://www.jstor.org/stable/1048005

Fox, J. A. & Levin, J. (2022). Mass murder in America: Trends, characteristics, explanations, and policy response. *Homicide Studies*, *26*(1), 27-46. https://doi.org/10.1177/10887679211043803

Freilich, J. D., Chermak, S. M., & Klein, B. R. (2020). Investigating the applicability of situational crime prevention to the public mass violence context. *Criminology & Public Policy*, *19*(1), 271-293. https://doi.org/10.1111/1745-9133.12480

Greene-Colozzi, E. A. (2022). *Mitigating the harm of public mass shooting incidents through situational crime prevention*. [Doctoral dissertation, John Jay College / Graduate Center, CUNY]. ProQuest Dissertations. https://academicworks.cuny.edu/cgi/viewcontent.cgi?article=6035&context=gc_etds

Greene-Colozzi, E. A., Freilich, J. D., & Chermak, S. M. (2021). Developing open-source databases from online sources. In T. J. Holt & A. Lavorgna. (Eds.) *Researching cybercrimes, methodologies, ethics, and critical approaches*. Palgrave MacMillan.

Gun Violence Archive. (2021). *Gun Violence Archive*. https://www.gunviolencearchive.org

Huff-Corzine, L., & Corzine, J. (2020). The devil's in the details: Measuring mass violence. *Criminology & Public Policy*, *19*(1), 317-333. https://doi.org/10.1111/1745-9133.12482

Hutchinson, B. (2019, June 17). Alleged Dallas gunman BIC opens fire outside federal courthouse, dies in gunbattle. *ABC News*. https://abcnews.go.com/US/gunman-opens-fire-dallas-federal-courthouse-police/story?id=63761439

Klein, B. R., Gruenewald, J., & Smith, B. L. (2017). Opportunity, group structure, temporal patterns, and successful outcomes of far-right terrorism incidents in the United States. *Crime & Delinquency*, *63*(10), 1224-1249. https://doi.org/10.1177/0011128716654925

Krouse, W. J., & Richardson, D. J. (2015). *Mass murder with firearms: Incidents and victims, 1999–2013*. Congressional Research Service. https://sgp.fas.org/crs/misc/R44126.pdf

Langman, P., & Straub, F. (2019). *A comparison of averted and completed school attacks from the Police Foundation Averted School Violence Database*. Office of Community Oriented Policing. https://www.avertedschoolviolence.org/wp-content/uploads/2019/04/ASV-A-Comparison-of-Averted-and-Completed-School-Attacks_Final-Report-2019.pdf

Lankford, A. (2015). Mass shooters in the USA, 1966-2010: Differences between attackers who live and die. *Justice Quarterly*, *32*(2), 360-379. https://doi.org/10.1080/07418825.2013.806675

Lankford, A. (2020). The importance of analyzing public mass shooters separately from other attackers when estimating the prevalence of their behavior worldwide. *Econ Journal Watch*, *17*(1), 40-55. https://econjwatch.org/File+download/1145/LankfordMar2020.pdf?mimetype=pdf

Larkin, R. W. (2009). The Columbine legacy: Rampage shootings as political acts. *American Behavioral Scientist, 52*(9), 1309-1326. https://doi.org/10.1177/0002764209332548

Mass Shooting Tracker. (2021). *Mass Shooting Tracker*. https://massshootingtracker.org/

Newman, K. S., Fox, C., Harding, D. J., Mehta, J., & Roth, W. (2004). *Rampage: The social roots of school shootings*. Basic Books.

O'Neill, J. P., Miller, J. J., & Waters, J. R. (2016). *Active shooter: Recommendations and analysis for risk mitigation*. New York City Police Department. https://www1.nyc.gov/assets/nypd/downloads/pdf/counterterrorism/active-shooter-analysis2016.pdf

O'Toole, M.E. (2000). *The school shooters: A threat assessment perspective*. Critical Incident Response Group, National Center for the Analysis of Violent Crime. https://www.fbi.gov/file-repository/stats-services-publications-school-shooter-school-shooter/view

Paul, D., & Mettler, K. (2019, April 28). Authorities identify suspect in 'hate crime' synagogue shooting that left 1 dead, 3 injured. *Washington Post*. https://www.washingtonpost.com/nation/2019/04/27/california-synagogue-shooting-multiple-injuries/

Peterson, J. K., & Densley, J. A. (2019). *The Violence Project Database of Mass Shootings in the United States, 1966–2019*. The Violence Project.

Rocque, M. Gerdesn, M., Fox, J. A., Duwe, G., & Clark, M. (2022). Averting tragedy: An exploration of thwarted mass public shootings relative to completed attacks. *Criminal Justice Review*. https://doi.org/10.1177/07340168221117107

Sarteschi, C. M. (2016). An examination of thwarted mass homicide plots and threateners. *Aggression and Violent Behavior*, *30*(5), 88-93. https://doi.org/10.1016/j.avb.2016.06.010

Schildkraut, J., & Elsass, H. J. (2016). *Mass shootings: Media, myths, and realities*. ABC-CLIO.

Schildkraut, J., & Turanovic, J. J. (2022). A new wave of mass shootings? Exploring the potential impact of COVID-19. *Homicide Studies*. https://doi.org/10.1177/10887679221101605

Silva, J. R. (2021). A comparative analysis of foiled and completed mass shootings. *American Journal of Criminal Justice*, *46*(2), 187-208. https://doi.org/10.1007/s12103-020-09552-2

Silva, J. R. (2022a). A comprehensive study of public, family, and felony mass shootings in the United States, 2006-2020. *Violence and Victims*, *37*(6).

Silva, J. R. (2022b). Global mass shootings: Comparing the United States against developed and developing countries. *International Journal of Comparative and Applied Criminal Justice*. https://doi.org/10.1080/01924036.2022.2052126

Silva, J. R. (2022c). Mass shooting outcomes: A comparison of completed, attempted, failed, and foiled incidents in America. *Deviant Behavior*. https://doi.org/10.1080/01639625.2021.1991248

Silva, J. R., & Capellan, J. A. (2019). The media's coverage of mass public shootings in America: Fifty years of newsworthiness. *International Journal of Comparative and Applied Criminal Justice*, *43*(1), 77-97. https://doi.org/10.1080/01924036.2018.1437458

Silva, J. R., & Greene-Colozzi, E. A. (2019). Deconstructing an epidemic: Determining the frequency of mass gun violence. In S. Daly (Ed.), *Assessing and Averting the Prevalence of Mass Violence* (pp. 39-67). IGI Global.

Silva, J. R., & Greene-Colozzi, E. A. (2021). Mass shootings and routine activities theory: The impact of motivation, target suitability, and capable guardianship on fatalities and injuries. *Victims and Offenders*, *16*(4), 565-586. https://doi.org/10.1080/15564886.2020.1823919

Silva, J. R., & Greene-Colozzi, E. A. (2022a). An exploratory study of failed mass shootings in America. *Security Journal*, *35*(2), 367-399. https://doi.org/10.1057/s41284-020-00281-z

Silva, J. R., & Greene-Colozzi, E. A. (2022b). *What we know about foiled and failed mass school shootings*. Regional Gun Violence Research Consortium, Rockefeller Institute of Government. https://rockinst.org/wp-content/uploads/2022/08/Failed-Foiled-School-Shootings.pdf

USA Today. (2018). *U.S. mass killings since 2006*. http://www.gannett-cdn.com/GDContent/mass-killings/index.html#explore

ABOUT THE AUTHORS

Emily Ann Greene-Colozzi is an Assistant Professor in the University of Massachusetts Lowell School of Criminology and Justice Studies. Her research focuses on causes and prevention of mass gun violence and school violence, and has been published in *Journal of School Violence*, *Justice Quarterly*, and *Aggression and Violent Behavior*.

Jason R. Silva is an Assistant Professor in the Department of Sociology and Criminal Justice at William Paterson University. His research examines mass shootings, terrorism, school violence, and mass media. Silva's recent publications have appeared in *Homicide Studies*, *Journal of Interpersonal Violence*, *Justice Quarterly*, and *Violence & Victims*. His work has also been featured in *The New York Times*, *CNN*, *New York Magazine*, *NPR*, *Oxygen*, and *The Conversation*.