



Exogenous events and media reporting of mass shootings

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ABSTRACT

A growing literature has revealed that not all mass shootings are covered equally by the media. Thus far, endogenous and contextual characteristics of mass shootings have been causally associated with heightened print and online news coverage such as offender identity, weapon usage, motivations, shooting location and fatality count. This study utilizes univariate logistic regression to investigate whether the occurrence of exogenous events can offset coverage of mass shootings as measured through article counts drawn from the New York Times counts on 68 different cases. Results reveal that the odds of a given mass shooting being newsworthy are 12 times higher in absence of an exogenous event the day prior, the day of, or day after the shooting. These findings also support previously identified statistical trends. Cases featuring Middle-Eastern offenders have 28 times greater odds of being highly newsworthy. Large fatality counts also tend to attract news attention with each additional fatality in a shooting increasing the odds of it being highly newsworthy by one.

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Introduction

Mass shootings are a moderately rare, but reoccurring type of homicide. In the heterogeneous social milieu found in the United States, mass shootings have been carried out by perpetrators in different communities, socio-economic contexts, and in different geo-spatial locations. Perpetrators of these crimes have been of different races, ages, and have been driven by varying motives. One commonality inherent to mass shootings is that they are necessarily public and are reported on by media in law-like fashion. Media comprise the principal sources civilians obtain news information from and extensively shape public knowledge of mass shootings (Schildkraut & Elsass, 2016).

While audiences consume video and audio content about these crimes, scientific research on this topic is still relatively underdeveloped – only a few studies have assessed the important nexus between mass shootings and media coverage (Silva & Capellan, 2019, p. 1). This entails that not only are scholars unaware of the underlying dynamics of how media cover mass shootings, but much of the public remain uninformed. Nearly two decades ago, Duwe (2000, 2004) analyzed 493 incidents of mass murder that took place over the span of 1976–1996 and discovered that shootings which either involve assault weapons, result in large numbers of fatalities/wounded victims, or those that were carried out by strangers in public locations were likeliest to lead to national news coverage.

Duwe argued that the overemphasizing of certain types of crime by media is due to its nature of seeking to maximize audience sizes, and in turn, profit. News media seem to cater to the public's fascination with crime and highly sensationalist acts of violence (Lawrence & Mueller, 2003).

In recent years, several studies have revealed that different types of mass shootings receive imbalanced amounts of media coverage (Duwe, 2000; Schildkraut, 2016; Schildkraut & Muschert, 2014; Schildkraut, Elsass, & Meredith, 2018; Silva & Capellan, 2019). Although the 'average' mass shooting tends to not result in a high fatality count, is carried out by a white perpetrator (60% of the time), and is not ideologically motivated, certain characteristics have been discovered to be correlated with high degrees of media coverage (Silva & Capellan, 2019, p. 19). For instance, in comparison to 193 white perpetrators, shootings carried out by 12 Middle-Eastern perpetrators received much greater coverage and this particular offender background was found to be one of the 'most salient predictors of newsworthiness' across more than half a century of mass shootings (Silva & Capellan, 2019, p. 16). Due to media heavily reporting on characteristics of mass shootings that are relatively uncommon Silva and Capellan (2019) argue that media distort public knowledge and the reality of mass shootings. Others have pointed out that media coverage not only rewards mass shooters with prospective to gain fame but creates conditions that incentivize future offenders to carry out violence (Lankford & Madfis, 2018, p. 262).

This present study adds to the literature on mass shootings and media coverage. It addresses the puzzle of why some mass shootings receive more coverage than others through giving attention to previously under-theorized dynamics. While statistical research has identified significant correlations, to date, all analyses have focused on the endogenous characteristics of mass shootings such as the shooting itself, the offender, its location, fatality counts, among other endogenous factors. The potential impact of exogenous factors on media coverage of mass shootings has yet to be assessed. The present study fills these gaps by testing previously identified correlations and introducing new measures. It accounts for exogenous external events which are defined as occurrences of crises, unexpected developments, and unforeseen calamities that can be political, social, cultural, or economic in nature. Exogenous events are hypothesized to take media attention away from a mass shooting. This article statistically assesses both the presence and absence of such events across a diverse set of cases of mass shootings and attempted mass shootings.

Mass shootings and media coverage

Mass shootings have been notoriously difficult to define for the scholarly community, security enforcement organizations, non-profits, and media organizations. In this study, the same definition as Silva and Capellan (2019) is adopted who label these acts as *mass public shootings*,¹

a mass public shooting is an incident of targeted violence where an offender has killed or attempted to kill four or more victims on a public stage.

More specifically,

(1) the act can involve more than one offender and take place at multiple related locations within a 24-hour time period; (2) the main weapon has to be a firearm; and (3) the shooting

is not related to state-sponsored or profit-driven criminal activity (e.g. drug trafficking or gang shootings). (Silva & Capellan, 2019)

In the United States, mass shootings are major topics of debate that intersect between political, psychiatric, economic, and cultural boundaries. Media organizations give extensive coverage to homicide, crime, and other illegal actions to publics locally, regionally and nationally. This empirical feedback process features an occurrence of a given shooting event, the subsequent interpretation of this event by the public and various media organizations, followed by media articulation and extended coverage of the event. It is important to keep in mind that public shootings that bring about mass casualties do not only arise in the United States, but are now a growing problem that can be observed on a global level. Mass shootings have been carried out in a variety of different countries (Lankford, 2016).

In the United States, certain characteristics of mass shootings have been discovered to be more likely to spur great amounts of print and online media coverage. To date, the literature on this topic has been focused on how the *New York Times* reports mass shootings through gauging article publication frequencies. It has been discovered that mass shootings that result in high death tolls and injury counts are bound to receive more coverage (Duwe, 2000; Maguire, Weatherby, & Mathers, 2002; Silva & Capellan, 2019). This is likely why the front pages of newspapers have been observed to feature more total photos of civilian fatalities than of perpetrators. Nonetheless, when perpetrator photos do get published, they tend to be much larger than photos of their victims (Dahmen, 2018). Media reporting of offenders includes the publication of mug shots and personal and child photographs. Stories featuring imagery have grown to be so prevalent that potential offenders know that their actions will lead to attention from major print and online media such as the *New York Times*, NBC News, the Washington Post, ABC News, among others. Due to these trends along with fame-seeking behavior (offenders strategically planning attacks analogous to high profile incidents of the past), some scholars have recommended that news organizations do not publish the names and photographs of perpetrators in order to deter future violence (Lankford & Madfis, 2018).

Among the most comprehensive quantitative studies on media coverage of mass shootings was recently published by Schildkraut et al. (2018). Here an analysis of news articles on 90 different mass shootings covered by The *New York Times* was presented. Schildkraut et al. (2018) discovered several insightful tendencies about what characteristics lead this media organization to cover a given mass shooting event more than other events of similar type. The first dynamic features the race/ethnicity of perpetrators. Shootings carried out by perpetrators of Asian descent were likelier to get more coverage than those carried out by white offenders. The same dynamic was found to be prevalent in offenders that were categorized as belonging to the 'other' category (Middle Eastern, Indian, Native American, or biracial/multiracial) (Schildkraut et al., 2018, p. 238). In contrast, shootings carried out by women were not found to be significantly correlated with newsworthiness. Along similar lines, in a recent study on media portrayals of racial characteristics of mass shooters, Duxbury, Frizzell, and Lindsay (2018) discovered that there is variance in trends to how mass media report on perpetrator characteristics. Mass shootings carried out by whites and Latinos were more likely to be described in reports with reference to mental illness in comparison to Blacks. In contrast, white offenders were

also found to be portrayed as being more sympathetic individuals when compared to constructions of ‘perpetually violent’ Latinos and Blacks.

In confirmation of earlier mentioned findings stemming to Duwe (2000), Schildkraut et al. (2018) discovered that shootings which resulted in high victim fatality and injury counts also were covered more. Silva and Capellan (2019) additionally verified this claim. In terms of shooting location, whereas Duwe (2000) found that national media coverage tended to be geared towards shootings that took place in public areas (especially workplaces), a recent study found similar tendencies in shootings that occurred in school settings (Schildkraut & Muschert, 2014). Part of the divergence in results here is likely due to the sample of cases that were investigated. Since 2000, a substantial number of shootings in educational settings have taken place. Some of these incidents have resulted in extreme death tolls (e.g. Virginia tech) and in extreme newsworthiness (e.g. Sandy Hook). Scholars have pointed out that mass shootings which take place in school settings spur greater attention from publics who have a high degree of interest in the incident and frequently wonder about the implications that the shooting has on the qualitative social settings it took place in (Burns & Crawford, 1999). Silva and Capellan (2019) found that school shootings were 255% likelier to be newsworthy than shootings which occurred in business settings (Silva & Capellan, 2019, p. 14). Anisin (2019) voiced similar claims with reference to shootings that occur in culturally symbolic locations and especially those indicative of practices stemming to ‘American pastimes’ such as movie theatres, malls, among other relevant locations.

In their investigation of 301 shootings, Silva and Capellan (2019) assessed media coverage on the largest sample of cases to date spanning 1965–2016. Nearly 72% of all shootings in their sample of cases received some degree of coverage in the *New York Times*. In their research design, articles were separated by two categories – ‘general stories’ about gun politics, regulations, and mass shootings as well as ‘specific articles’ which comprised details about the incident, offender, and victims (Silva & Capellan, 2019, p. 10). Results verified findings from previous literature as it was discovered that incidents that received the greatest media coverage were carried out by younger offenders, resulted in high fatality counts, and were ideologically motivated. The authors also found that shootings carried out by offenders of Middle-Eastern origin were expected to receive more coverage than others.

The most-reported mass shootings

Table 1 contains information on the most reported shootings – drawn from two distinguished studies on the topic – Schildkraut et al. (2018) and Silva and Capellan (2019). In the latter, the top 15 most news producing shootings from 1960 to 2016 are highlighted. In the former, the top 10 most news producing shootings are displayed. It is evident that there are divergences between the two studies and the number of *New York Times* articles they assigned to each particular shooting. This has to do with data collection methods that were utilized in both studies. Schildkraut et al. (2018) relied on LexisNexis to search for articles encompassing their cases. Here stories were selected stemming from the day of the shooting to the next 30 days (Schildkraut et al., 2018, p. 231), whereas Silva and Capellan (2019) drew on articles stemming from the day of a given shooting to 2016 (all time until 2016).

Table 1. History's most-reported mass shootings.

Top 15 reported shootings (Silva & Capellan, 2019)	Total All-Time NYT articles	Top 10 reported shootings post- Columbine (Schildkraut et al., 2018)	Total NYT articles, 30 days post-shooting
1999 Columbine High School	503	2012 Sandy Hook Elementary	130
2012 Sandy Hook Elementary	248	2011 Tucson	89
2012 Colorado Movie Theater	212	2009 Fort Hood	36
2011 Tucson Shooting	207	2007 Virginia Tech	36
2015 San Bernardino	206	2012 Colorado Theater	31
2007 Virginia Tech	198	2005 Red Lake High School (MN)	19
2016 Orlando Nightclub	175	2001 Santana High School (CA)	17
2015 Charleston Church	161	2010 University of Alabama-Huntsville	12
2009 Fort Hood	159	2008 Northern Illinois University	12
1993 Long Island Rail Road	106	2009 Binghamton immigration center	11
1998 Westside Middle School	77	n/a	
1993 CIA Headquarters	46	n/a	
1994 Brooklyn Bridge	40	n/a	
2013 Washington Navy Yard	35	n/a	
1966 University Austin, Texas	32	n/a	

The present study will utilize the results shown in Table 1 to assess these cases in relation to a variety of other shootings which did not turn out to be as newsworthy as measured through New York Time Articles. In total, there are 18 cases that are considered the most newsworthy. These cases will be compared and statistically assessed in relation to cases that were not as newsworthy. Before delving into the analytical approach that will be utilized, several theoretical premises will be put forward in order to differentiate exogenous factors from endogenous factors that have been causally associated with heightened media coverage of the above-noted mass shootings.

Theoretical framework

Various individual, spatial, and physical characteristics of mass shootings such as the identity of the perpetrator, the total death count the shooting brings about, and the location of the shooting have been correlated with the high degrees of media coverage. Although these correlations raise important implications, yet they also present an incomplete picture about the nature of media coverage of mass shootings. This study contends that the causal phenomenon under attention [mass shooting – extended media coverage] is multifaceted in its nature because the processes that empirically underpin media organizations casting attention on a mass shooting are not only reliant on the endogenous characteristics belonging to a given shooting. By this logic, this study implies that potential causal mechanisms likely cannot be traced or identified through simple correlations that involve only endogenous forces – even if those correlations are statistically significant.

Every study to date has considered the connecting relationship between mass shootings and subsequent media coverage to be driven by endogenous factors and characteristics. The occurrence of shooting, its location, perpetrator characteristics, fatality and injury counts, among other factors are all endogenous to the incident and context of the act. As noted by Schildkraut et al. (2018),

Similar to researchers studying the newsworthiness of homicide (e.g., Buckler and Travis 2005; Chermak 1995, 1998; Gruenewald, Pizarro, and Chermak 2009; Johnstone, Hawkins,

and Michener 1994; Paulsen 2003; Schildkraut and Donley 2012; Sorenson, Manz, and Berk 1998; Wilbanks 1984), the present study aims to examine the newsworthiness by identifying characteristics of the shootings themselves that influence their selection (whether or not the event receives coverage) and prominence (how much coverage it does receive). (p. 228)

An approach of this sort is entirely endogenous, or put differently, reliant on observations that are fundamentally internal to shooting events. This is a theoretical limitation if we consider the potential of there being exogenous forces that also empirically influence how media cover mass shootings. The present study contends that there are indeed causal mechanisms that contribute to bringing about the phenomenon of heightened media coverage of some mass shootings when compared to others (those that receive relatively little comparable coverage). However, these mechanisms are not likely to be identified without sufficient theorization pertaining to causal forces that are indicative of both endogenous and exogenous factors.

Exogeneity can be observed through analysis of exogenous events that arise in the time leading up to, during, and after a mass shooting. If there is a major occurrence of crises or a crisis that is political, social, cultural, or economic in nature – media organization reporting and attention of a mass shooting may indeed lessen. Specifically, if the days before a shooting are absent of an unexpected and unforeseen exogenous political, social, or economic calamity, a given mass shooting is likelier to be newsworthy. For example, during October of 2014, the Marysville Pilchuck High School shooting (5 fatalities) was carried out by a non-white 15-year-old offender (Jaylen Fryberg, Native American descent). According to previous research, this type of case should provide a recipe for newsworthiness due to the presence of a non-white perpetrator as well as the location of the shooting (public school), however, on the day prior (23 October), stories about how the Ebola virus could potentially become domestically contagious were rampant. On the 23rd, a physician in NYC tested positive for the virus after having come back from treating patients in Guinea (Santora, 2014). Not only was coverage of Ebola widely circulated in US newspapers, but survey evidence has since revealed that ‘a substantial portion of the American public was concerned about being infected’ (Basch, Basch, & Redlener, 2014). What’s more, on the same day, a militant Islamic-inspired attack was carried out towards police in the Jamaica Queens neighborhood in New York City. The self-radicalized suspect had used a hatchet and the attack was classified as an act of terrorism (Kearney, 2014).

In a qualitatively different case, a mass shooting that occurred during July of 2003 also turned out to not receive significant media coverage due to the offsetting effect of an exogenous event. Douglas Williams (a 48-year-old, employee of Lockheed Martin) killed six of his coworkers and wounded eight. During this time however, there was a plot that got unfolded in New Jersey featuring several teenagers who had prepared to carry out a ‘Columbine style’ mass killing that was driven by their own interpretation of the film, the Matrix. The teenagers were armed with rifles, handguns, knives, and swords (Associated Press, 2003). Another salient case can be observed in a house party shooting that occurred near the University of Washington on 30 July, 2016. Here a young man used a Ruger AR-556 semi-automatic rifle to kill three people. His actions were driven by an adverse personal relationship with one of the women attending the party (CBS NEWS, 2016). In the day prior, news stories about servers from the Democratic National Committee being hacked by a foreign adversary (Russia) started becoming prominent. This

particular story turned out to dominate headlines for the next months and the entire presidential election cycle. There are a significant number of other cases that featured causally relevant characteristics but did not turn out to be among the most covered mass shootings. Due to space constraints, not all cases featuring exogenous events can be described in this section.

Case selection and operationalization

A total of 68 total mass shootings and attempted mass shootings have been selected for analysis.² This sample of cases contains an assortment of incidents that are variant in characteristics such as different fatality counts, different offender characteristics, geo-spatial locations, among other applicable factors.³ These cases were chosen on the basis of incorporating the greatest possible amount of empirical diversity into analysis – making this a partially random chosen sample of cases (18 most newsworthy cases drawn from Table 1; 50 included on basis of diversity and randomness). Diversity is especially important to consider with relation to theoretical boundaries set by the researcher. Cases that possess some similar characteristics to those of history's most newsworthy mass shootings (e.g. incidents with high fatality counts) that did not result in great media coverage are necessary to investigate rather than an exclusive large number of randomly selected incidents. By including under reported but theoretically relevant cases alongside those that did receive high degrees of coverage and randomly chosen incidents, a fruitful milieu for comparative analysis can be established.

Information on these cases was comprised through research on open-source data primarily through LexisNexis databases as well as global event timelines drawn from encyclopedic historical sources (Britannica Encyclopedia Online), along with the *New York Times*, the *New York Post* and the *Los Angeles Times*. To ascertain whether there was a relevant exogenous event(s) around the time of a given shooting, the multiple news outlets described above were investigated – with specific emphasis being placed on the *New York Times*. Analysis of all these outlets turned out to be extremely helpful for coding the exogenous event variable. For example, the *Los Angeles Times* has a database featuring comprehensive information of its contents for each day since 1980. This strategy of research is commonly used in mass shootings literature (Anisin, 2019; Lankford, 2015; Silva & Capellan, 2019). Where information on a given non-nationally reported shooting incident was absent, local news agencies were drawn on. For example, in a 1975 Post Office shooting that occurred on 22 March in Gadsden, Alabama, exogenous events that did or did not arise around this time were researched through national-level newspapers as well as regional and local sources. On the day prior (21 March), a coup took place in Ethiopia which does not qualify as a relevant exogenous event. Information on the coup was accessible through the *Los Angeles Times*. On the day of the shooting, a fire broke out in a power plant in Alabama and 16 people were killed in an Air Force plane crash in Olympic mountains in the state of Washington (The Gadsden Times, 1975), whereas 23 March was absent of any relevant events, both on the national and sub-national level.

The following variables were traced and coded across all 68 cases. Among these variables is the factor of an exogenous event(s) which will subsequently be investigated to ascertain whether it had an effect in contributing to newsworthiness of the 18 most covered mass shootings in US history.

Male

This is a binary condition that captures whether the perpetrator of a mass shooting was a male (1 – yes; 0 – no).

Female

This is a binary condition that captures whether the perpetrator of a mass shooting was a female (1 – yes; 0 – no).

Perpetrator of Middle-Eastern origin

This is a binary condition that captures whether the perpetrator of a mass shooting was of Middle-Eastern origin (1 – yes; 0 – no). The latter is defined in the following way: if the offender was directly from any country in the Middle East (born there), or if his/her parents were first-generation immigrants that came to the US from this region.

Non-white and non-Middle-Eastern perpetrator

This condition captures whether the perpetrator of a given shooting was not white or Middle Eastern. This condition is coded as (1) not white or not Mid-Eastern, (1) white for all others.

Fatality count

This is a continuous variable capturing the total fatality count (including perpetrator).

Proximity to New York/East Coast

The farther away from New York a given mass shooting takes place, the less likely it is to be covered by the *New York Times*. Here, this condition was coded as (0) for all shootings that did not take place on the East Coast (in states not on Eastern Time). All shootings that did occur on the East Coast were coded as (1).

Multiple/high powered guns

The total number of guns used by a shooter has also been correlated with the newsworthiness of mass shootings. If the offender used three handguns/pistols or more (regardless of their type) this variable was coded as (1). The same (1) coding was made for cases in which the offender used a handgun along with either a rifle or shotgun.

Absence of occurrence of a major event

If there is an ongoing domestic or international event or crisis during the day before, the day of, or the day after the shooting this can directly impact the extent of media coverage of mass shootings. The occurrence of a major event that is exogenous to the actual shooting was measured along political, social, cultural, and economic boundaries. The absence of an

event occurrence is coded as (1) and the presence of it is coded as (0). Indeed, there is a degree of subjectivity inherent to this variable due to the heterogeneous nature of what constitutes an external event. However, the empirical manifestation of major events such as the earlier noted Ebola panic is historically salient post-facto – as some periods of history are clearly marked and dominated by such events when compared to those that are absent of any unexpected occurrences. Throughout the research process, an assessment of 68 cases and their relation to external events, revealed that significant events are not always commonplace across the last decades of US history – and there are some periods where such events fail to occur for weeks on end.

Offender history mental disturbance

This variable captures whether an offender experienced adverse mental occurrences in his/her life. The coding procedure was drawn from a recent study by Capellan and Anisin (2018), in which it was argued that accurately observing mental illness is very difficult, hence, it was contended that mental *disturbance* history is a more reliable measure to observe whether a shooter had undergone adverse psychological processes before carrying out an act of violence. Anisin (2018) also made similar classifications. Open-source documents were reviewed for characterizations by family members and close friends of the offender in regard to mental health status. Reported history of mental disturbance is coded as a binary variable with '1' indicating a formal diagnosis or a suggested history of mental disturbance based on the following ailments: schizophrenia, persistent bouts of depression, anxiety disorders, addictive behavior, bipolar disorder, obsessive compulsive disorder, and post-traumatic stress disorder (Capellan & Anisin, 2018, p. 10). Table 2 illustrates descriptive statistics of the variables introduced in this section.

As this study seeks to address the question of whether exogenous events can influence media coverage of mass shootings, the following hypothesis will be tested:

(H1) In absence of the occurrence of exogenous events, coverage of mass shootings will increase.

Statistical analysis

Univariate logistic regression was carried out in order to examine whether the hypothesized factor of event absence was positively associated with heightened coverage of mass shootings. The dependent variable, once again, was whether a mass shooting became newsworthy as gauged through NYT article counts. This dependent variable was coded (1) across the noted 18 cases and all other cases which did not turn into highly covered shootings were coded as (0). This methodological strategy is viable to test the hypothesis as this study seeks to isolate endogenous factors from exogenous.

The logistic regression results (Table 3) provide direct evidence for the hypothesis while at the same time, they also provide confirmation for some previously identified significant variables in the literature. Odds ratios indicate either an increase or decrease in the likelihood of a shooting getting covered by media. If the odds ratio for a specific variable is more than one this indicates an increase, whereas a value lower than one indicates a

Table 2. Descriptive statistics ($n = 68$).

	Male	Female	Mid-East	Non-White	Fatality Count	East Coast	No. of guns used	Absence of event	Mental disturbance
Mean	.97	.03	.11	.21	7.38	.40	.42	.50	.50
Std. Dev	.170	.170	.306	.407	8.16	.492	.500	.503	.503
Min	0	0	0	0	0	0	0	0	0
Max	1	1	1	1	49	1	1	1	1

negative relationship. Moreover, holding all other factors constant, the absence of an exogenous event in the day prior, the day of, or the day after a shooting is significantly correlated with high degrees of media coverage. Hence, the null hypothesis can be rejected as the coefficient is significantly different from 0.

As expected, characteristics of offender identity (Middle-Eastern origin) are also significantly associated with heightened media coverage. Silva and Capellan (2019) also identified such a result. The same holds true for fatality counts – the more fatalities a given shooting brings about, the likelier it is to be newsworthy. The variable capturing location (shootings that occurred in locations on the Eastern time zone) is not statistically significant. This is likely due to the fact that a substantial number of shootings in the sample of cases under attention occurred in this part of the country, but did not turn out to be significantly newsworthy. Contrary to previous research, the factor of firearms (in the total number used by an offender) was not found to be statistically significant.

As three different variables are significantly correlated with the outcome, interpreting their odds ratios is as follows (Table 4). Acts carried out by perpetrators of Middle-Eastern origin have 28 times greater odds of receiving heightened news coverage. This may imply that news organizations equate certain features to mass shootings that are carried out by offenders of Middle-Eastern origin with terrorist ideologies and frames of terrorism. More on this point will be said in the subsequent discussion section of this study. The odds ratio for fatality count tells us that with this particular factor (continuous variable) for each additional fatality in a given shooting, news coverage increases by one. Most importantly, the principal result of this study tells us that shootings which occur at a time that is marked by the absence of an exogenous event have nearly 12 greater odds of receiving heightened coverage. Whereas previous research has emphasized variables that are endogenous to the occurrence of a mass shooting, the present study has discovered that exogenous forces also play a role in shaping media coverage of mass shootings.

Table 3. Logistic regression results.

Predictors	Logistic coefficients (B)	Std. Error
Male Perpetrator	−3.231	1.81
Mid-East	3.337*	1.51
Non-white	.7911	1.09
Fatality Count	.1517*	.069
East Coast	.7866	.833
Number of Guns Used	.5252	.911
Absence of Event	2.481**	.990
Mental Disturbance	.4011	.975
(Constant)	−2.20	1.61
R ²	0.43	
Chi-square	34.11	
N	68	

* $p < .05$, ** $p < .01$, *** $p < .001$.

Table 4. Odds ratios.

Mid-East	Fatality Count	Absence of Event
28.14	1.163	11.95

Endogenous factors likely interact with exogenous factors in the empirical world to bring about the outcome of interest.

Discussion

The results produced in this study have immediate implications for our understanding of how one of the most widely read print and online news organizations in the United States covers mass shootings. Previous research established that a small number of all mass shootings have brought about large-scale newsworthiness. This study has discovered that the relationship between mass shootings and media coverage is more dynamic than previously imagined. Heightened *New York Times* coverage of mass shootings is driven by factors that are not limited to what we can directly observe at the scene of a crime. Exogenous factors influence the frequency of news stories of mass shootings.

In terms of shootings that were carried out by Middle-Eastern offenders, it may well be the case that other external forces shape the frequency of media reporting on mass shootings that are carried out by perpetrators of this background. Altheide (2006, 2009) argues that a shift in national discourse occurred around two decades ago. In detail, a discourse of fear arose due to the Columbine massacre combined with the September 11, 2001 terrorist attacks. As Altheide puts it, ‘the discourse relates to the sense that danger, dread and fear are pervasive and just around the corner’ (Altheide, 2007). The dramatic increase in media organizations linking terrorism to fear was visible through media coverage in the 2000s and continued into the subsequent decade. These linkages were significantly pronounced when compared to the common reporting tactics of media organizations before 9/11, most of which were based on common manifestations of crime and fear. After 2001 an ongoing stigmatization of Middle-Eastern civilians arose in the US which has since been exacerbated whenever certain types of mass shootings are carried out. Theoretically, it is plausible to assume that discourses of fear are not only politically driven, but are also exogenous to a given shooting incident. Nearly all mass shootings that took place after Columbine and 9/11 dominate the most reported lists thus far produced by researchers.

On the other hand, this study found the variable of mental disturbance history to be insignificant. This may come as a surprise to some, however, media organizations might not report mental illness due to the problematic nature that comes with defining it as well as a lack of being able to establish a formal psychiatric diagnoses. Similarly, it is much easier for media organizations to observe demographic characteristics (e.g. age, ethnicity, religion) of a given offender in comparison to problems that may exist beneath the surface such as mental disturbance and illness. With these insights in mind, the present study is not without limitations. It relied on previous tallies found in scholarly research that measured newsworthiness through searching *New York Times* article databases. Other media outlets were not assessed with regard to total newsworthiness across the entire US. Such an endeavor is recommended in the future inquiry on this topic. Inquiry aimed at identifying any potential variance in news media coverage of mass shootings

are also suggested to be carried out in times ahead. For example, does the Washington Post cover mass shootings in the same way as the NYT? Are there regional biases between outlets such as the *Los Angeles Times* in comparison to the NYT? A final shortcoming of this study is that it was not able to make any distinction between editorial and journalist-based deliberation and decision making processes. What occurs inside editorial premises and newsrooms is unclear from this analysis because it could only obtain data on the end product – in the form of total news articles. It would indeed be fruitful to carry out qualitative interviews with former and current journalists covering these topics.

Conclusion

This study has carried out a statistical analysis of mass shootings. The sample of cases analyzed contained the most covered mass shootings in US history along with a diverse collection of other mass shootings which turned out to not be as newsworthy. Endogenous characteristics of shootings were tested on the outcome of *New York Times* coverage (total article counts) along with one newly theorized exogenous characteristic. It was discovered that several (but not all) previously noted factors were correlated with the dependent variable. These were fatality count and the ethnic identity of the perpetrator (Middle Eastern). Support was found for the hypothesis that mass shootings are likelier to be reported in large-scale form if there was an absence of an exogenous event prior, the day of, or shortly after its occurrence. This tells us that when other noteworthy event(s) arise around the time of a given mass shooting, media coverage is offset when compared to time periods that are marked by the non-occurrence of exogenous events.

A future inquiry on mass shootings and media coverage is recommended in order to ascertain whether specific types of exogenous events offset coverage. It could indeed be the case that politically motivated exogenous events are more salient than others in dictating media coverage of mass shootings. To obtain greater understanding of these dynamics, subsequent research can pursue two routes that may be fruitful to take – the first being a total comprehensive analysis of all cases throughout history in all major US media print and online news outlets. A second route could potentially feature researchers measuring then testing both exogenous and endogenous variables in temporally limited periods such as a decade or even a year. This could then lead to more quantitative research and comparisons, and new discoveries on the temporal variation behind mass shootings coverage across different decades of US history.

Notes

1. Considering this specified definition, throughout this study, mass public shootings will be referred to simply as mass shootings.
2. Attempted mass shootings can also be high-profiled incidents, especially those that arise in school settings.
3. The following link contains an appendix which is anonymously accessible: <https://www.dropbox.com/s/v3teoenb9arah36/Appendix%20highly%20covered%20mass%20shootings.docx?dl=0>.

Disclosure statement

No potential conflict of interest was reported by the author.

Notes on contributor

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