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UNIVERSITY OF CALIFORNIA,
IRVINE

Muslim Mass Shooters are Seen as Less Mentally Ill and More Motivated by Religion

THESIS

submitted in partial satisfaction of the requirements
for the degree of

MASTER OF ARTS

in Social Ecology

by

Brett Gregory Mercier

Thesis Committee:
Professor Peter H. Ditto, Chair
Associate Professor Azim F. Shariff
Assistant Professor Paul K. Piff

2019

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I would like to thank the Social Sciences and Humanities Research Council of Canada for their generous financial support in the form of a graduate fellowship.

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ABSTRACT OF THE THESIS

Muslim Mass Shooters are Seen as Less Mentally Ill and More Motivated by Religion

By

Brett Gregory Mercier

Master of Arts in Social Ecology

University of California, Irvine, 2019

Professor Peter H. Ditto, Chair

Objective: We test whether prejudice can influence lay attributions of mental illness to perpetrators of violence. Specifically, we examine whether people with negative attitudes towards Muslims perceive Muslim mass shooters as less mentally ill than non-Muslim shooters. **Method:** Study 1 compares attributions of mental illness to Muslim and non-Muslim perpetrators of recent mass shootings. Studies 2 and 3 experimentally test whether a mass shooter described in a news article is seen as less mentally ill when described as being a Muslim, compared to when described as a Christian (Study 2) and to when religion is not mentioned (Study 3). Study 4 tests whether a Muslim shooter is seen as less mentally ill than a Christian shooter, even when both shooters have symptoms of mental illness. **Results:** In all studies, Muslim shooters were seen as less mentally ill than non-Muslim shooters, but only by those with negative views towards Muslims. **Conclusion:** Those with anti-Muslim prejudices perceive Muslim mass shooters as less mentally ill, likely to maintain culpability and fit narratives about terrorism. This may reinforce anti-Muslim attitudes by leading those with anti-Muslim prejudice to overestimate the amount of violence inspired by groups like ISIS relative to extremist groups from other ideologies.

INTRODUCTION

A relentless series of mass shootings in the United States has spawned often-heated discussions about the role of mental illness in these attacks. Many argue that public assumptions about the shooter in these discussions systematically depend on the shooter's demographic characteristics. Discussions about Muslim shooters are often framed in the context of religion and terrorism, while discussion of non-Muslim shooters—particularly white non-Muslims—are framed in the context of mental illness (Butler, 2015). For example, media coverage of the racially motivated shooting of an African American church in Charleston, South Carolina was criticized for failing to describe the shooting as terrorism, as might be the case with a Muslim shooter, and instead focusing on the shooter's mental health (Butler, 2015). Conversely, after the shooting of a military installation in Chattanooga, Tennessee, critics argued that because the shooter was Muslim, media coverage ignored his history of mental illness (Clark, 2015). Why might some people discount mental illness for Muslim mass shooters? One possibility is that the presence of mental illness exculpates transgressions, giving those who want to blame Islam for violence a motivation to ignore mental illness when a shooter is Muslim. Such motivated attributions of mental illness could exacerbate stigma against both Muslims (Clark, 2015) and those who suffer from mental illness (Metzl & MacLeish, 2015). This paper empirically tests whether motivated attributions of mental illness occur, focusing specifically on whether those prejudiced against Muslims discount mental illness for Muslim mass shooters.

In recent years, an expanding body of research has sought to explain the causes of mass shootings (e.g. Knoll, 2012). Yet, relatively little research has focused on lay beliefs

about the causes of mass shootings, and how individual prejudices shape these beliefs. Mass shootings are politically relevant events with ambiguous causes, leaving people likely to interpret them through the lens of their existing beliefs. Stereotypes about the shooter, for example, often provide people with a simple explanation for a mass shooting that is consistent with their current worldview. Thus, for those who endorse it, the stereotype that Muslims are likely to be religiously-inspired terrorists provides a superficial explanation for the actions of Muslim mass shooters which requires little mental effort to generate. Once people have generated an explanation which is consistent with the stereotypes they hold, they are unlikely to spend cognitive effort searching for further explanations (Sanbonmatsu, Akimoto, & Gibson, 1994), meaning those who attribute a mass shooting to religious extremism should be less likely to consider alternative or additional explanations.

One such explanation that laypeople might consider is mental illness. In contrast to research demonstrating that people with mental illness are less violent than the general population, many people believe mental illness causes violence (Angermeyer & Dietrich, 2006; Mulvey, 1994). For example, a 2013 survey found that 46% of Americans believe people with serious mental illness are “by far more dangerous than the general population” (Barry, McGinty, Vernick, & Webster, 2013, p. 1080). This stereotype may lead members of the public, in the absence of other explanations, to believe mass shootings result from mental illness. Consistent with this, 48% of Americans believe that a great deal of the blame for mass shootings lies in the failure of the mental health system to identify dangerous individuals (Gallup, 2013).

There are also motivational reasons why Muslim mass shooters might be perceived as less mentally ill. People try to maintain a sense of consistency between their feelings and

beliefs about the world (Clark, Chen, & Ditto, 2015). This desire for consistency can lead them to reason backwards, adjusting their beliefs about the world so they are consistent with their feelings. For example, because holding others responsible for immoral actions requires that those actions are freely chosen, a desire to punish others can lead people to increase their belief in free will (Clark et al., 2014). This type of reasoning may motivate those with negative attitudes towards Muslims to perceive Muslim shooters as less mentally ill. Mental illness is considered an exculpatory factor in moral judgements, and individuals with mental illness are often not held legally responsible for crimes (Finkel & Slobogin, 1995; Slobogin, 2000). Additionally, persons with mental illness are often stereotyped as deviant and atypical, meaning their actions are less likely to be attributed to the characteristics of the groups they belong to (Angermeyer & Dietrich, 2006). Thus, those with negative attitudes towards Muslims may perceive Muslim mass shooters as less mentally ill out of a desire to believe Muslim shooters are inspired by Islamic beliefs, thereby justifying a negative view of Muslims.

In this paper, we examine lay perceptions of the mental health of Muslim and non-Muslim mass shooters. Our first hypothesis is that people with negative attitudes towards Muslims will see Muslim shooters as less mentally ill than non-Muslim shooters. We test this by measuring perceptions of past mass shootings (Study 1) and by experimentally manipulating the religion of a shooter in an ostensibly real news article (Studies 2 and 3) and in a vignette (Study 4). Our second hypothesis is that the predicted differences in perceptions of mental illness will influence punitiveness. Because mental illness is viewed as an exculpating factor in crimes, we predict that the decreased perception of mental illness will lead people to recommend Muslim shooters receive more severe punishment

than non-Muslim shooters. Finally, our third hypothesis is that when someone shares a group identity with a mass shooter, they will use attributions of mental illness to distance the shooter from their group. To examine this, in Study 3 we test whether Christian participants perceive a Christian mass shooter as more mentally ill than a non-Christian shooter.

STUDY 1

In Study 1, we examined perceptions of the mental health of recent mass shooters in the United States. We predicted that, compared to non-Muslim shooters, Muslim shooters would be seen as less mentally ill and more motivated by religion. Crucially, we expected these effects to be stronger for people with negative attitudes towards Muslims because these individuals have a greater motivation to hold Muslims responsible for mass shootings. Finally, we expected the decrease in perceived mental illness to result in recommendations that Muslim shooters receive harsher punishment than non-Muslim shooters.

Participants

Participants in all studies were recruited through Amazon's Mechanical Turk in exchange for a small monetary payment. We recruited 481 participants for Study 1 (238 male, 224 female, 2 other, 21 did not indicate gender; mean age = 37.56 years, $SD = 12.39$). Study 1 included the following attention check question: "Because you're paying attention to this survey, please select 'Tends to be true' for this question". We excluded 51 participants who did not correctly respond to this question, leaving 430 participants. In this study (and in all studies in this paper) no analyses were performed until data collection was finished.

Procedure and Materials

We randomly assigned participants to answer questions about one of eight mass shooters selected from the Mother Jones database of mass shootings (Follman, Aronsen, & Pan, 2017). We selected the four most recent Muslim and non-Muslim shooters who had killed at least four people. As a reminder of the details of the shooting, participants read a

brief description of the shooting, including the age of the shooter, location, and number of fatalities (see Supplemental Materials for descriptions). After reading the description, participants completed the following measures in the order they appear below. *Perceptions of the Perpetrator*. Participants were asked to estimate the extent to which the following factors played a role in the shooting: “Mental illness,” “Hatred of Victims,” “Desire to cause pain,” “Religious ideology,” “Political ideology,” and “Social factors”. These factors were developed by the authors to provide face valid measures of possible motivations for a mass shooting. Participants were asked to rank each possible option on a 7-point scale with the endpoints labeled 1 = “Very unlikely to have been a factor” and 7 = “Very likely to have been a factor”. *Desired Punishment*. To assess desire for punishment, participants were asked to imagine they were charged with deciding the length of the shooter’s prison sentence. Participants indicated their preferred sentence length on a sliding scale from 0 = “No imprisonment” to 100 = “100 years or more.” Participants were also asked whether or not they would recommend the death penalty for the shooter (“Yes” or “No”). Both of these measures were developed by the authors to provide a face valid measure of harshness of punishment. *Attitudes Towards Muslims*. Participants completed the “Attitudes towards Muslims” scale, a validated scale (Altareb, 1997) which contains 25 statements (e.g. “Muslims are friendly people”) rated on a 5-point Likert scale ranging from 1 = “Strongly Disagree” to 5 = “Strongly Agree”. Following Rowatt, Franklin and Cotton (2005) we interpreted this scale as a general measure of attitudes towards Muslims, with higher numbers indicating more negative attitudes ($\alpha = .96$; $M = 2.74$, $SD = 0.75$). Finally, participants completed several other exploratory measures (exploratory measures in this,

and all following studies are included the Supplemental Materials) and were presented with a debriefing page thanking them for their participation.

Results

Our primary hypothesis was that mental illness would be seen as less likely to have played a role in shootings with Muslim perpetrators. To test this, we used an ANCOVA to test the extent which participants perceived mental illness was a factor in each shooting as a function of shooter religion (Muslim vs non-Muslim), negative attitudes towards Muslims, and the interaction between these variables, with the number of victims per shooting as a covariate. Following the recommendations of Aguinis and Gottfredson (2010), in this and all future studies reported in this paper, all continuous predictor variables were mean-centered and standardized. As predicted, participants believed mental illness was less likely to be a factor in shootings with Muslim ($M = 5.17, SD = 1.81$) compared to non-Muslim perpetrators ($M = 5.82, SD = 1.39; F(1, 372) = 9.31, p = .002, \eta_p^2 = .024$), a finding qualified by a significant interaction between shooter religion and attitudes towards Muslims, $F(1, 372) = 7.74, p = .006, \eta_p^2 = .020$. Follow up analyses revealed that for those high in negative attitudes towards Muslims (above the median of the scale), mental illness was seen as less likely to be a factor for Muslim, compared to non-Muslim shooters, $F(1, 183) = 12.19, p < .001, \eta_p^2 = .062$ (see Figure 1). For those low in negative attitudes towards Muslims (below the median) this was not the case, $F(1, 177) = 0.416, p = .520, \eta_p^2 = .002$.

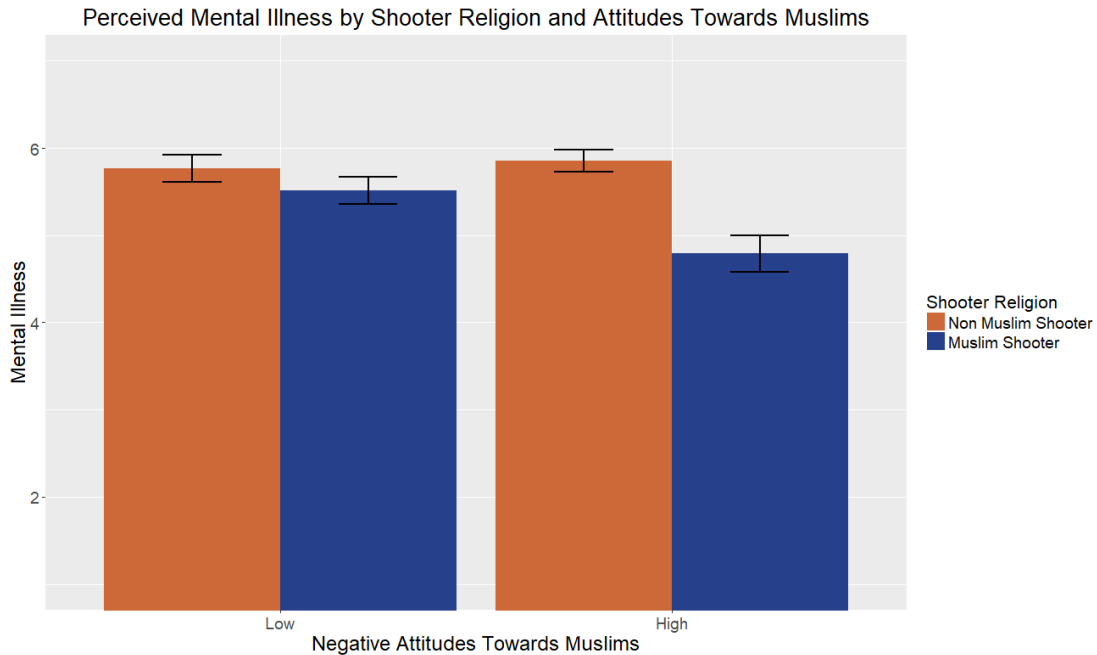


Figure 1.1 Perceived mental illness by shooter religion and attitudes towards Muslims (Study 1). Error bars indicate one standard error above and below the mean in each group

An ANCOVA on the perceived role of religious ideology revealed that participants believed religion was more likely to be a factor for Muslim ($M = 5.39, SD = 1.62$) compared to non-Muslim shooters ($M = 3.66, SD = 1.73$), $F(1, 372) = 95.25, p < .001, \eta_p^2 = .204$. Again, this finding was qualified by the presence of a significant interaction between shooter religion and attitudes towards Muslims, $F(1, 372) = 24.33, p < .001, \eta_p^2 = .061$. Follow up analyses revealed this to be a spreading interaction; religion was seen as more of a factor for Muslim shooters by both those low in negative attitudes towards Muslims ($F(1, 177) = 15.10, p < .001, \eta_p^2 = .079$) and those high in negative attitudes towards Muslims ($F(1, 183) = 94.89, p < .001, \eta_p^2 = .341$), but the effect was larger for the latter group (see Figure 2).

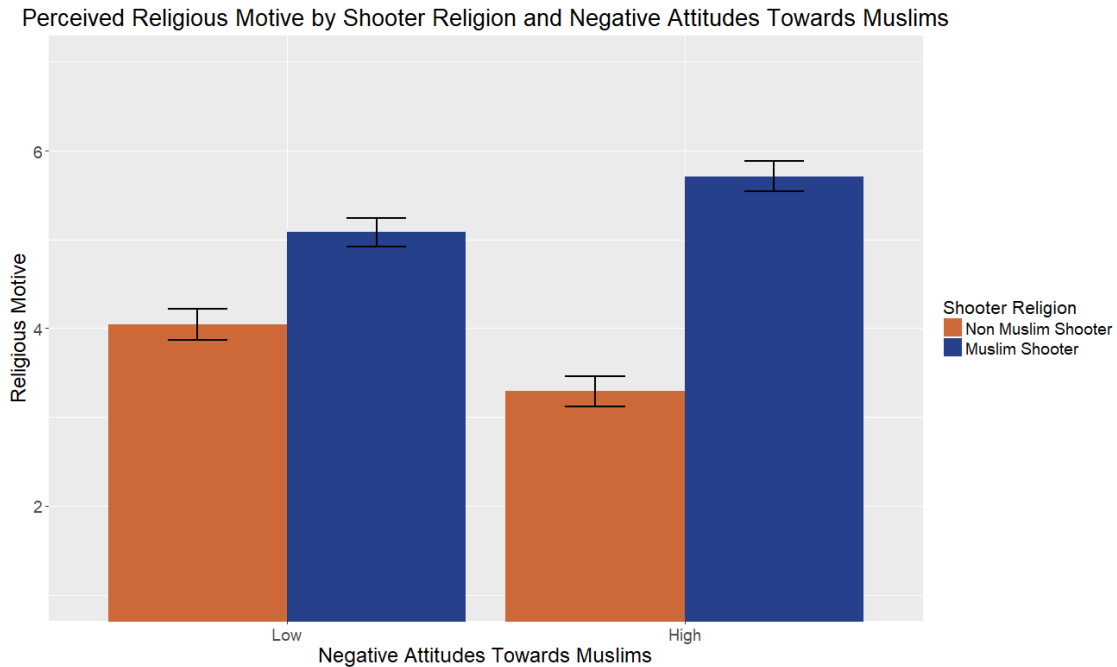


Figure 1.2 Perceived religious motive by shooter religion and attitudes towards Muslims (Study 1). Error bars indicate one standard error above and below the mean in each group.

Turning to punishment, the distribution of recommended sentences was highly negatively skewed, with 60% of respondents choosing the strongest possible option (“100 years or more”). Nonetheless, an ANCOVA revealed that although recommended years in prison was not significantly influenced by shooter religion ($F(1, 372) = 1.39, p = .239, \eta_p^2 = .004$) or attitudes towards Muslims ($F(1, 372) = 0.53, p = 0.467, \eta_p^2 = .001$), there was a significant interaction between these factors, $F(1, 372) = 4.91, p = .027, \eta_p^2 = .013$. Follow up analyses revealed that those high in negative attitudes towards Muslims recommended longer sentences for Muslim shooters ($F(1, 183) = 7.04, p = .009, \eta_p^2 = .037$), but those low in negative attitudes did not, $F(1, 177) = 1.10, p = .297, \eta_p^2 = .006$.

Next, we tested whether, among those high in negative attitudes towards Muslims, the effect of shooter religion on recommended sentence was mediated by perceptions of mental illness. This analysis (and all mediation models in this paper) were conducted in the

statistical software R (R Core Team, 2017) using the “mediation” package (Tingley, Yamamoto, Hirose, Keele, & Imai, 2014). We used this package to test mediation using the Baron and Kenny (1986) method, with 1000 Monte Carlo simulations to test for an indirect effect. The indirect path in this mediation model was not significant ($B = -0.40, p = .734$), meaning that we did not find evidence that the increased punishment for Muslims could be attributed to decreased perceptions of mental illness.

Finally, we used a logistic regression to test whether the likelihood of recommending the death penalty was influenced by shooter religion, negative attitudes towards Muslims, or the interaction between these variables, with number of victims per shooting as a covariate. This analysis revealed that the tendency to recommend the death penalty was associated with more negative attitudes towards Muslims ($B = -0.38, p = .011$), but not was not affected by perpetrator religion ($B = -0.25, p = .342$), or the interaction between these variables, $B = -0.33, p = .159$. Thus, we did not find evidence that those with negative attitudes towards Muslims are more likely to recommend the death penalty for Muslim shooters.

Discussion

Study 1 demonstrated that when people with negative attitudes towards Muslims recall past mass shootings, they recall mental illness as less likely to have been a factor in shootings by Muslims, and religion as more likely to have been a factor. Study 1 found mixed support for the prediction that this decreased perception of mental illness would result in harsher punishment for Muslims: those with negative attitudes towards Muslims recommended longer sentences for Muslim shooters, but were not more likely to recommend that Muslim shooters receive the death penalty. Furthermore, the effect of

shooter religion on sentence length was not mediated by decreased perceptions of mental illness, suggesting that this effect may have been due to a general dislike of Muslims.

Though Study 1 probed participants' attributions of real mass shootings, a limitation of this approach is that the circumstances of the shootings, the shooters, and media reporting may have all differed between Muslim and non-Muslim shootings. This prevents us from determining whether the shooters' religion—specifically—was the cause of the different attributions. Thus, Study 2 used a controlled experimental design, enabling us to isolate the effect of a shooter's religion.

STUDY 2

Participants

We recruited 240 participants for Study 2 (89 male, 112 female, 2 other, 37 did not indicate gender; mean age = 37.61 years, $SD = 12.39$). Study 2 included three attention check questions similar to the question used in Study 1. We excluded 72 participants who failed at least one of the three attention check questions, leaving 168 participants.

Procedure and Materials

Participants were randomly assigned to view one of two news articles ostensibly from the CNN website describing a recent mass shooting in France. The articles were identical save for the following description of the perpetrator in the Muslim [Christian] Shooter conditions: *Police have identified the suspect as a 32-year-old male, Muhammed Ebrahim [Adrian Blanc], with the help of the suspect's neighbor, Abel Moreau, who described Ebrahim [Blanc] as a devout Muslim [Christian]* (articles included in the Supplemental Materials). After reading the article, participants completed the punishment measures from Study 1 and the measures below in random order. *Perception of Mental Illness*. Participants responded to three Likert type questions about the shooters mental health (e.g. “The perpetrator likely has some form of mental illness”) on a 7-point scale ranging from 1 = “Strongly disagree” to 7 = “Strongly Agree” ($\alpha = .91$; $M = 3.49$, $SD = 1.09$). This scale was developed by the authors to provide a face valid measure of perceived mental illness. *Perception of Religious Motive*. Participants indicated how motivated they thought the perpetrator was by his beliefs about religion on a 5-point scale ranging from 1 = “Not at all” to 5 = “A great deal” ($M = 2.77$, $SD = 1.43$). This item was developed by the authors to provide a face valid measure of perceived religious motivation. Finally, participants

completed the Attitudes Towards Muslims scale, several exploratory measures, and the demographics questions from Study 1.

Results

We performed an ANOVA testing whether perceived mental illness was affected by shooter religion (Muslim vs Christian), negative attitudes towards Muslims, and the interaction between these variables. This analysis revealed that the Muslim shooter ($M = 3.28$, $SD = 1.11$) was seen as less mentally ill than the Christian shooter ($M = 3.74$, $SD = 1.00$), $F(1, 164) = 8.29$, $p = .004$, $\eta_p^2 = .048$. This finding was qualified by a significant interaction between shooter religion and negative attitudes towards Muslims, $F(1, 164) = 5.00$, $p = .027$, $\eta_p^2 = .030$. Follow up analyses revealed that the Muslim shooter was seen as less mentally ill than the Christian shooter by participants high in negative attitudes towards Muslims ($F(1, 80) = 6.28$, $p = .014$, $\eta_p^2 = .073$), but not by those low in negative attitudes towards Muslims, $F(1, 80) = 2.19$, $p = .143$, $\eta_p^2 = .027$).

An ANOVA on perceived religious motivation revealed that participants believed the Muslim shooter ($M = 3.20$, $SD = 1.40$) was more motivated by religion than the Christian shooter ($M = 2.21$, $SD = 1.27$; $F(1, 164) = 26.17$, $p < .001$, $\eta_p^2 = .138$), a finding qualified by a significant interaction between shooter religion and attitudes towards Muslims, $F(1, 164) = 23.93$, $p < .001$, $\eta_p^2 = .127$. Follow up analyses revealed that those high in negative attitudes towards Muslims believed the Muslim shooter was more motivated by religion than the Christian shooter, $F(1, 80) = 30.26$, $p < .001$, $\eta_p^2 = .274$. For those low in negative attitudes towards Muslims, this was not the case, $F(1, 80) = 1.14$, $p = .290$, $\eta_p^2 = .014$.

Turning to punishment, as in Study 1, the distribution of recommended sentences was highly negatively skewed, with 61% of respondents choosing the strongest possible

option (“100 years or more”). An ANOVA revealed that participants did not recommend longer sentences for the Muslim shooter ($M = 82.68, SD = 27.87$) compared to the Christian shooter ($M = 79.38, SD = 28.76$), $F(1, 164) = 0.58, p = .449, \eta_p^2 = .004$. Those with more negative attitudes towards Muslims did not recommend longer sentences ($F(1, 164) = 1.00, p = .317, \eta_p^2 = .006$), a finding which did not interact with shooter religion, $F(1, 164) = 0.71, p = .400, \eta_p^2 = .004$.

A logistic regression revealed that participants were more likely to recommend the death penalty for Muslim shooters compared to Christian shooters, $B = 0.91, p = .011$, and those with more negative attitudes towards Muslims were more likely to recommend the death penalty, $B = 1.22, p < .001$. These effects did not interact, $B = -0.26, p = .555$. A mediation analysis revealed that the greater likelihood of recommending the death penalty for the Muslim shooter was mediated by decreased perceptions of mental illness, $B = .04, p = .020$.

Discussion

Study 2 demonstrated that, if people with negative attitudes towards Muslims are told that a shooter is Muslim, they see this shooter as less mentally ill and more motivated by religion than if they are told the shooter is Christian. This supports the hypothesis that people discount mental illness for members of disliked groups who commit violent acts. However, an alternative, or at least additional, explanation is that people use motivated attributions of mental illness to exonerate favored groups when one of their members commits an act of violence. Because Study 2 compares a Muslim shooter to a Christian shooter, and Christians are generally viewed positively in the United States, it is possible that the relative decrease in mental illness for the Muslim shooter in Study 2 is actually

caused by an increased perception of mental illness for the Christian shooter. To rule out this possibility, Study 3 added a condition where the shooter's religion was not mentioned. Comparing this condition to the Christian shooter allowed us to test whether participants who identify as Christian are motivated to increase attributions of mental illness for Christian shooters.

As in Study 1, Study 2 found mixed support for the prediction that perceptions of less mental illness would result in harsher punishment for the Muslim shooter. Participants in Study 2 were more likely to recommend the death penalty for the Muslim shooter, but did not recommend that the Muslim shooter receive a longer prison sentence. However, responses to the question about recommended prison sentence were highly skewed, suggesting that the failure to observe an effect on this measure may have been due to a ceiling effect. To investigate this, Study 3 included punishment questions worded as strongly as possible. Study 3 also tested whether a shooter's religion would influence beliefs about how shootings can be prevented. To test this, we asked participants whether the shooting they read about could have been prevented by more effective mental health policy and whether punishing the shooter would deter future shootings. Finally, because people commonly assume that Muslims are Arabs, it is possible the effects in Study 2 occurred because of racial bias against Arabs rather than a bias against Muslims. To rule this out, the articles in Study 3 included a picture of a white shooter.

STUDY 3

Participants

We recruited 521 participants for Study 3 (224 male, 284 female, 4 other, 9 did not indicate gender; mean age = 39.74 years, $SD = 11.77$). We excluded 14 participants who failed to correctly answer the attention check question used in Study 1, leaving 507 participants.

Procedure and Materials

Participants were randomly assigned to view one of three news articles ostensibly from the CNN website describing a recent mass shooting in France. The article described the shooter as either Muhammad Ebrahim, a devout Muslim (*Muslim Condition*), Connor Martin, a devout Christian (*Christian Condition*), or Adrian Blanc, a member of the local community (*Neutral Condition*). To increase the salience of the shooters religion, the “story highlights” section of the article mentioned the shooter’s religion (see Supplemental Materials for articles). The beginning of the article included a picture of a white man, which a caption indicated was the shooter. After reading the article, participants completed the measure of perceived mental illness from Study 2, and the following measures in random order. All measures were developed by the authors to be face valid measures of the constructs they were intended to measure (except the Christian Identity measure, which was developed based on past research). *Effectiveness of Mental Health Policies*. Participants were presented with several different mental health policies and policy improvements (e.g. “Increasing the availability of support services for mentally ill individuals”). Participants indicated the probability each policy could have prevented the shooting on a 7-point scale ranging from 1 = “very unlikely to have prevented the shooting”, 7 = “very likely to have

prevented the shooting" ($\alpha = .96$; $M = 4.40$, $SD = 1.52$). *Punishment*: Participants responded to four statements about the degree of punishment the shooter should receive (e.g. "The shooter should receive the most severe punishment possible") on a 7-point scale ranging from 1 = "Strongly disagree" to 7 = "Strongly Agree" ($\alpha = .77$; $M = 4.72$, $SD = 1.35$).

Punishment as a Deterrent. Participants responded to four statements about the extent to which punishing the shooter would deter future shootings (e.g. "The best way to prevent future shootings is to ensure that the shooter is severely punished") on the same 7-point scale as the other punishment questions ($\alpha = .88$; $M = 4.69$, $SD = 1.53$). *Christian Identity*. We modified a validated measure of identity from Verkuyten and Yildiz (2007) to specifically measure the extent which someone identifies as a Christian. Participants responded to five Likert-type items (e.g. "I identify strongly as a Christian") on a 5-point scale ranging from 1 = "not at all true of me" to 5 = "totally true of me" ($\alpha = .99$; $M = 2.63$, $SD = 1.57$). Finally, participants completed the Attitudes Towards Muslims scale, the question from Study 2 about the religious motivation of the shooter, and demographic measures.

Results

For each of our dependent variables, we conducted planned contrasts in two ANOVA models. First, in an ANOVA with condition, Christian identity and the interaction between these variables as predictors, we compared the Christian shooter to the neutral shooter, and tested whether the comparison between the Christian shooter and neutral shooter interacted with Christian identity. Next, in an ANOVA with condition, negative attitudes towards Muslims, and the interaction between these variables as predictors, we compared the Muslim shooter to the neutral shooter, and tested whether the comparison between the Muslim and neutral shooter interacted with negative attitudes towards Muslims.

Mental Illness. The Christian shooter ($M = 3.86, SD = 0.85$) was not seen as more mentally ill than the neutral shooter ($M = 3.76, SD = 0.80$), $F(1, 500) = 1.42, p = .234, \eta_p^2 = .003$. This finding did not significantly interact with Christian identity, meaning we did not find evidence that stronger identification as a Christian leads to increased attributions of mental illness for Christian shooters, $F(1, 500) = 0.09, p = .769, \eta_p^2 < .001$. In contrast, the Muslim shooter was seen as significantly less mentally ill ($M = 3.55, SD = 1.01$) than the neutral shooter, $F(1, 500) = 3.91, p = .049, \eta_p^2 = .008$. The interaction between this comparison and negative attitudes towards Muslims was close to, but did not reach, the traditional threshold for statistical significance, $F(1, 500) = 2.73, p = .099, \eta_p^2 = .058$. However, because both Studies 1 and 2 found that only participants high in negative attitudes towards Muslims discounted mental illness for Muslim shooters, we continued with follow up analyses similar to those conducted in Studies 1 and 2. As in earlier studies, these analyses revealed that among those high in negative attitudes towards Muslims, the Muslim shooter was seen as less mentally ill than the neutral shooter, $F(1, 244) = 5.31, p = .022, \eta_p^2 = .024$. Among those low in negative attitudes, this was not the case, $F(1, 244) = 0.19, p = .661, \eta_p^2 = .001$ (see Figure 3).

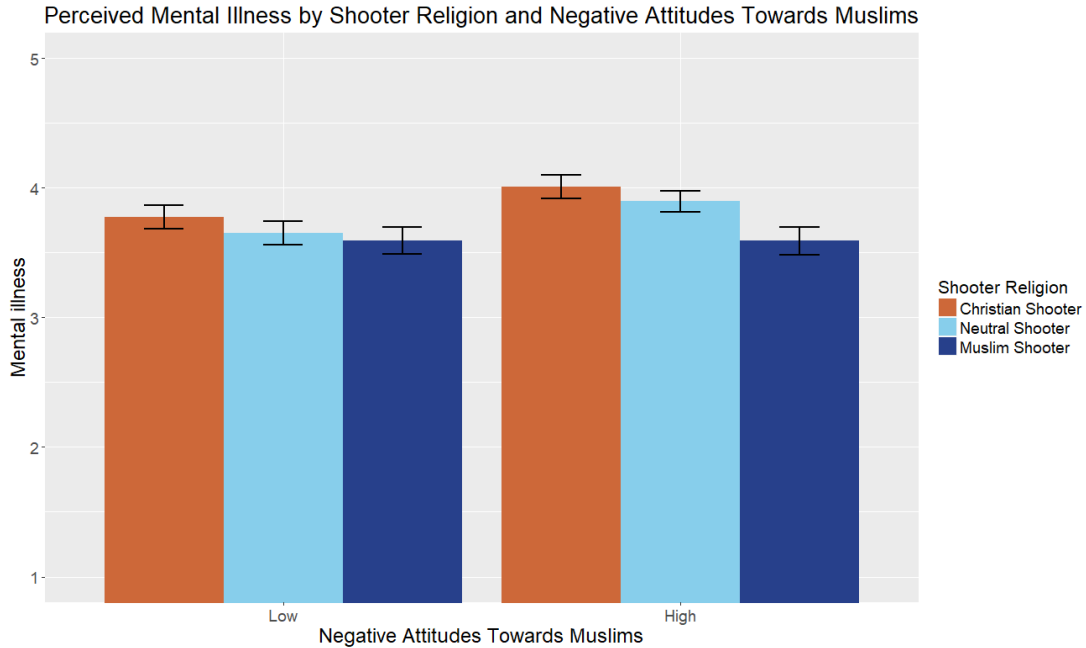


Figure 3.1 Perceived mental illness by shooter religion and attitudes towards Muslims (Study 3). Error bars indicate one standard error above and below the mean in each group.

Religious Motive. The Christian shooter ($M = 1.99$, $SD = 1.11$) was not seen as less motivated by religion than the neutral shooter ($M = 2.12$, $SD = 1.20$), $F(1, 498) = 0.86$, $\eta_p^2 = .001$. This finding did not significantly interact with Christian identity, meaning we did not find evidence that stronger identification as a Christian leads to stronger discounting of religious motives for Christian shooters, $F(1, 498) = 0.24$, $p = .492$, $\eta_p^2 < .001$. In contrast, the Muslim shooter ($M = 3.24$, $SD = 1.27$) was seen as significantly more motivated by religion than the neutral shooter $F(1, 500) = 67.35$, $p < .001$, $\eta_p^2 = .104$. As with perceived mental illness, the interaction between this comparison and negative attitudes towards Muslims was close to the traditional threshold for statistical significance, $F(1, 500) = 3.40$, $p = .066$, $\eta_p^2 = .006$. Follow-up analyses revealed that both those high ($F(1, 243) = 53.55$, $p < .001$, $\eta_p^2 = .155$) and low ($F(1, 243) = 16.83$, $p < .001$, $\eta_p^2 = .060$) in negative attitudes

towards Muslims assumed the Muslim shooter was more motivated by religion than the Christian shooter.

Punishment. Participants did not recommend that the Christian shooter ($M = 4.58$, $SD = 1.29$) receive a less severe punishment than the neutral shooter ($M = 4.68$, $SD = 1.37$; $F(1, 500) = 0.22$, $p = .638$, $\eta_p^2 < .001$), regardless of Christian identity, $F(1, 500) = 1.45$, $p = .229$, $\eta_p^2 = .002$. Similarly, participants did not recommended that the Muslim shooter ($M = 4.89$, $SD = 1.37$) receive a harsher punishment than the neutral shooter ($F(1, 500) = 0.389$, $p = .533$, $\eta_p^2 < .001$) regardless of negative attitudes towards Muslims, $F(1, 500) = 0.97$, $p = .325$, $\eta_p^2 = .002$.

Punishment as a Deterrent. The perceived effectiveness of punishment as a deterrent for future shootings did not differ for the Christian shooter ($M = 4.52$, $SD = 1.45$) relative to the neutral shooter ($M = 4.84$, $SD = 1.50$; $F(1, 500) = 2.19$, $p = .140$, $\eta_p^2 = .003$) regardless of level of Christian identity, $F(1, 500) = 0.07$, $p = .790$, $\eta_p^2 < .001$. Likewise, the perceived effectiveness of punishment as a deterrent did not differ for the Muslim shooter ($M = 4.71$, $SD = 1.61$) relative to the neutral shooter ($F(1, 500) = 2.01$, $p = .157$, $\eta_p^2 = .003$), regardless of level of negative attitudes towards Muslims, $F(1, 500) = 1.40$, $p = .237$, $\eta_p^2 = .002$.

Mental Health Policy. Participants did not believe that mental health policy would have been more likely to prevent the Christian shooter ($M = 4.55$, $SD = 1.41$) compared to the neutral shooter ($M = 4.53$, $SD = 1.43$; $F(1, 500) = 0.03$, $p = .871$, $\eta_p^2 < .001$), regardless of Christian identity, $F(1, 500) = 1.87$, $p = .172$, $\eta_p^2 = .002$. Similarly, participants did not believe that mental health policy would have been less likely to prevent the Muslim shooter ($M = 4.14$, $SD = 1.67$) compared to the neutral shooter ($F(1, 500) = 3.82$, $p = .051$, $\eta_p^2 =$

.005), regardless of negative attitudes towards Muslims, $F(1, 500) = 1.91, p = .168, \eta_p^2 = .003$.

Discussion

Study 3 found that a mass shooter described as a Muslim was seen as less mentally ill and more motivated by religion than a shooter whose religion was not mentioned. As in previous studies, the Muslim shooter was only seen as less mentally ill by those high in negative attitudes towards Muslims. Study 3 did not find evidence that these decreased perceptions of mental illness influenced beliefs about policy, as participants did not believe that improving mental health policy would be a less effective way to prevent the shooting with the Muslim perpetrator. Notably, Study 3 did not find that participants who identified strongly as Christian perceived the Christian shooter as more mentally ill, meaning we did not find evidence for motivated increases in mental illness attributions. Furthermore, those who identified strongly as Christian did not see the Christian shooter as less motivated by religion and did not recommend the Christian shooter receive less punishment.

Studies 1-3 show that Muslim shooters are perceived as less mentally ill than other shooters. However, without knowing the true rates of mental illness among different types of mass shooters, it is unclear whether or not these perceptions are inaccurate. If Muslim shooters actually are less mentally ill, then perceiving them as such could just reflect a rational extrapolation from real trends. To test whether this is the case, Study 4 compares perceptions of mental health when both Muslim and Christian shooters have clear symptoms of mental illness. Although it might be the case that Muslim shooters tend to be less mentally ill than Christian shooters, it should not be the case that Muslim shooters with mental illness are less mentally ill than Christian shooters with mental illness. That is, even

if it is rational to discount mental illness for Muslim shooters, it is much less rational—and much more indicative of bias—to discount mental illness for Muslim shooters when they have clear symptoms of mental illness.

STUDY 4

Participants

We recruited 1578 participants for Study 4 (740 male, 820 female, 6 other, 12 did not indicate gender; mean age = 37.54 years, $SD = 12.08$). We excluded 40 participants who failed to correctly answer the attention check question used in Study 1, leaving 1538 participants.

Procedure and Materials

Participants were randomly assigned to read one of two vignettes describing a mass shooting. Participants were informed that the vignette was hypothetical, but “was created based on the details of several real shootings which actually occurred in the United States”. To clearly indicate that the shooter suffered from mental illness, the vignette indicated that the shooter “had a history of psychological problems and had seen a therapist in the past year”. To manipulate shooter religion, the vignette described a mass shooting committed by either Mohammad Abdelrahman, a devout Muslim, or Jeff Williams, a devout Christian (see Supplemental Materials for vignettes). After reading the vignette, participants completed (in random order) the measures of mental illness, religious motive, punishment, and mental health policy from Study 3.

Results

We performed an ANOVA testing whether perceived mental illness was affected by shooter religion (Muslim vs Christian), negative attitudes towards Muslims, and the interaction between these variables. This analysis revealed that the Muslim shooter ($M = 4.10$, $SD = 0.79$) was seen as significantly less mentally ill than the Christian shooter ($M = 4.18$, $SD = 0.72$), $F(1, 1523) = 4.40$, $p = .036$, $\eta_p^2 = .003$. This finding was qualified by a

significant interaction between shooter religion and negative attitudes towards Muslims, $F(1, 1523) = 4.61, p = .032, \eta_p^2 = .003$. Follow up analyses revealed that the Muslim shooter was seen as less mentally ill than the Christian shooter by participants high in negative attitudes towards Muslims ($F(1, 727) = 5.44, p = .020, \eta_p^2 = .008$), but not by those low in negative attitudes towards Muslims, $F(1, 796) = 0.55, p = .457, \eta_p^2 < .001$.

Religious Motive. The Muslim shooter ($M = 2.40, SD = 1.31$) was seen as more motivated by religion than the Christian shooter ($M = 1.83, SD = 1.09; F(1, 1523) = 109.48, p < .001, \eta_p^2 = .067$), an effect which interacted with negative attitudes towards Muslims, $F(1, 1523) = 126.47, p < .001, \eta_p^2 = .077$. Follow up analyses revealed that the Muslim shooter was seen as more motivated by religion by those high in negative attitude towards Muslims ($F(1, 727) = 158.75, p < .001, \eta_p^2 = .179$), but not by those low in negative attitudes towards Muslims, $F(1, 796) = 2.456, p = .117, \eta_p^2 = .003$.

Punishment. Participants did not recommend that the Muslim shooter ($M = 4.46, SD = 1.34$) receive a harsher punishment than the Christian shooter ($M = 4.45, SD = 1.27; F(1, 1523) = 0.917, p = .338, \eta_p^2 = .001$), a finding qualified by an interaction with negative attitudes towards Muslims, $F(1, 1523) = 13.79, p < .001, \eta_p^2 = .009$. Follow up analyses revealed that those high on negative attitudes recommended harsher punishment for the Muslim shooter ($F(1, 727) = 4.27, p = .039, \eta_p^2 = .006$), but those low on negative attitudes towards Muslims did not, $F(1, 796) = 0.79, p = .375, \eta_p^2 = .001$. Next, we tested whether, among those high in negative attitudes towards Muslims, the effect of shooter religion on punishment was mediated by perceptions of mental illness. This was not the case, $B = 0.02, p = .070$.

Mental Health Policy. Participants did not believe that mental health policy would have been more likely to prevent the Christian shooter ($M = 5.24, SD = 1.29$) compared to the Muslim shooter ($M = 5.23, SD = 1.29; F(1, 1523) = 0.04, p = .843, \eta_p^2 < .001$), a finding qualified by a significant interaction with negative attitudes towards Muslims, $F(1, 1523) = 6.59, p = .010, .004$. Follow up analyses revealed that the effect of policy was not significant for either those high in negative attitudes towards Muslims ($F(1, 727) = 0.997, p = .318, \eta_p^2 = .001$), or those low in negative attitudes towards Muslims, $F(1, 796) = 0.688, p = .407, \eta_p^2 = .001$.

GENERAL DISCUSSION

Supporting our main hypothesis, we find that people with negative attitudes towards Muslims believe Muslim mass shooters are less mentally ill than non-Muslim shooters. This finding occurred when we asked people about historical mass shootings (Study 1) and when we experimentally manipulated the religion of a mass shooter (Studies 2 - 3). Furthermore, Muslim shooters were seen as less mentally ill even when the description of the shooter contained clear symptoms of mental illness, indicating that the effect is unlikely to be driven by a rational interpretation of real trends in the world (Study 4). People also believed Muslim shooters were more likely to be motivated by religion than non-Muslim shooters, an effect which was generally stronger for those with negative attitudes towards Muslims.

Our second hypothesis was that the decreased perceptions of mental illness for Muslim shooters would result in recommendations for harsher punishment. We did not find evidence to support this hypothesis. Although three of four studies found that participants high in negative attitudes towards Muslims recommended harsher punishment for Muslim shooters, only one study found evidence that this effect was mediated by decreased perceptions of mental illness. Thus, these findings suggest that those with negative attitudes towards Muslims have a general bias towards punishing Muslim shooters, regardless of perceived mental illness.

Finally, our third hypothesis was that people would use attributions of mental illness to exonerate violent perpetrators belonging to favored groups. We do not find evidence in support of this. In Study 3, participants who strongly identified as Christians did not attribute greater mental illness to a Christian shooter. Additionally, none of the

studies in this paper found that those low in negative attitudes towards Muslims (the half of our participants with relatively more positive attitudes towards Muslims) attributed greater mental illness to Muslim shooters. That is, we did not find evidence that people with sympathetic views of Muslims were motivated to see Muslim shooters as more influenced by mental illness, relative to non-Muslim shooters.

Limitations

This paper focuses on psychological mechanisms leading certain individuals to see Muslim mass shooters as less mentally ill. In addition to psychological mechanisms, other factors may contribute to this phenomenon. For example, if Muslim mass shooters actually are less mentally ill than non-Muslim shooters, discounting mental illness for Muslim shooters could be an extrapolation from trends existing in reality. However, we believe this is unlikely. Although we are unaware of research specifically comparing Muslim and non-Muslim mass shooters, research has shown that mass shooters with an ideological motivation for a shooting have rates of mental illness similar to other mass shooters (Capellan, 2015). Thus, it is possible that Muslim mass shooters are more likely than other shooters to be ideologically motivated, but this is not evidence that they have lower rates of mental illness.

Another, more likely possibility is that people are extrapolating from trends which exist in media coverage of mass shootings. As discussed in the introduction, critics argue that media coverage tends to ignore mental illness for Muslim shooters (e.g. Butler, 2017; Clark, 2015). If this is a trend prevalent in the media, it is likely to contribute to the bias we demonstrate. Additionally, more subtle forms of media bias may also play a role. Past research has demonstrated that the media presents a distorted view of terrorism by giving

disproportionate coverage to certain types of incidents (Chermak & Gruenewald, 2006), such attacks perpetrated by Muslims (Kearns, Betus & Lemieux, 2017). Even if the content of media coverage is unbiased, the media could still present a distorted view of mass shootings through disproportionate coverage: covering Muslim shootings more when they are consistent with existing narratives about terrorism, and less when they are inconsistent (such as when a Muslim shooter is mentally ill). Furthermore, people seek out information which confirms their existing beliefs and are more likely to share this information—and have it shared—within their social networks (Bakshy, Messing, & Adamic, 2015). Thus, any bias in media content or exposure is likely amplified for news consumers who already hold negative beliefs about Muslims.

Though a full treatment and empirical test of a media bias is beyond the scope of the current paper, it is an important topic for future research. Nevertheless, the current results show that the tendency to perceive Muslim shooters as less mentally ill is unlikely to be entirely driven by a rational interpretation of real or perceived trends. Even with equal coverage—when a Muslim and Christian shooter were both clearly described as having symptoms of mental illness—those with negative attitudes towards Muslims saw the Muslim shooter as less mentally ill. In other words, even in a situation where there was clear evidence of mental illness, people still systematically discounted mental illness for Muslim shooters.

Research Implications

In addition to examining the role of media, future research may choose to expand our understanding of how psychological motivations influence perceptions of mental illness. For example, immoral actions are more likely to be attributed to free will than

non-moral actions (Clark et al., 2014). Does committing an immoral action also lead someone to be seen as less mentally ill? Such a finding would have important implications for how mental illness and culpability are treated in the justice system.

Future research may also choose to examine motivated increases in mental illness attributions. Although the Christian participants in Study 3 did not attribute greater mental illness to Christian mass shooters, Christians in the United States are a religious majority unlikely to be held responsible for violence committed by Christian perpetrators. Increased attributions of mental illness may be more likely to occur in situations where the motivation to do so is stronger, such as when members of a group fear retribution for the actions of one of their members.

Clinical and Policy Implications

Although past research has found that lone actor perpetrators of mass attacks frequently suffer from mental illness (Gruenewald, Chermak & Freilich, 2013), it is critical to note that the vast majority of people with mental illness are non-violent (Mulvey, 1994) and that those suffering from severe psychiatric disabilities are significantly more likely to be victims, rather than perpetrators, of violence (Hiday, 2006). Thus, the link between violence and mental illness is complex. The motivated use and avoidance of mental illness attributions, rooted in prejudice, will only distort our understanding of this already complicated relationship. Such distortions threaten to lead astray our attempts to both treat mental illness and prevent violence.

Selectively discounting the role of mental illness for members of some ideologies but not others may create inaccurate estimations of the degree and frequency in which those ideologies inspire violence. We do not claim that groups like ISIS or al-Qaeda never

play a role in inspiring mass shootings (they do) or that violence from these groups and their local acolytes is not a threat (it is). However, if violence committed by Muslims is reflexively viewed as ideologically-motivated terrorism, while violence committed by members of other groups is attributed to mental illness, people risk having an imbalanced view of these threats—overestimating the threat posed by extremists who are Muslim relative to the threat posed by extremists from other ideologies.

This overestimation might in turn serve to reinforce antipathy towards Muslims (and those often mistaken to be Muslim, such as turbaned Sikhs), as exposure to terrorism committed by Muslims has been shown to increase negative attitudes towards Muslims. For example, anti-Muslim prejudice increased following the 9-11 terrorist attacks (Poynting & Mason, 2007) and experimental studies have found that viewing footage of 9-11 creates anxiety about future terrorism, which then increases negative views of Muslims (Choma, Charlesford, Dalling, & Smith, 2015). Similarly, exposure to news media, which frequently portrays Muslims as perpetrators of terrorism, is associated with feelings of anger towards Muslims (Shaver, Sibley, Osborne, & Bulbulia, 2017). Thus, discounting mental illness for Muslim mass shooters may lead those with negative attitudes towards Muslims to overestimate the link between Islam and violence, thereby providing confirming evidence that further reinforces negative beliefs about Muslims.

Although they constitute only a small fraction of all gun homicides, mass shootings are a significant source of concern for many Americans (Gallup, 2017). Terrorism and mental illness are serious factors to consider in attempts to reduce mass shootings, as are gun laws, domestic violence, white nationalist violence, and many other factors. To optimally tackle these potential causes at the law enforcement and policy level, and to

accurately calibrate to the risks of violence people face at the individual level, it is critical that we correctly categorize who is committing violence and why. Ferreting out the prejudices that bias our perception and interpretation of criminal violence can only improve these efforts.

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