Warning: Notifications About Crime on Campus
May Have Unwanted Effects

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The 1990 Jeanne Clery Act mandates that U.S. colleges and universities issue reports about certain crimes and notifications about immediate threats. While the intent of these policies is to increase safety, researchers have raised concerns about the effectiveness of mobile notifications, the lack of context and detail in these short messages, and the variety in recipients' interpretations. In this mixed-methods study, we are interested in the relationship between respondents' worry about crime and their perceptions of and reactions to notifications about crime incidents on campus. We use a media studies approach, employing quantitative and qualitative survey questions as well as in-depth interviews with three campus officials to understand the production and reception of notification messages about crime. We find that some respondents seem inattentive to notifications, whereas others appear to overreact, which suggests that the Clery Act might actually decrease safety on college campuses.

Keywords: emergency notifications, Clery Act, crime, fear

　　　　People who work or study on college campuses in the U.S. typically receive at least a few emails and text messages about crimes and emergencies every semester. Some of these messages are sent because of the 1990 Jeanne Clery Act, which is intended to promote transparency about crime and to increase safety. The Clery Act handbook explains that policies about Timely Warnings and Emergency Notifications are intended to help keep "students and employees informed about threats to their safety and health in a manner that allows them to protect themselves" (U.S. Department of Education, 2016, p. 6 [-1]). Compliance with the Clery Act is enforced through fines of more than $50,000 per violation. As a result, U.S. college campuses disseminate more information about crimes and emergencies to their constituents than most other institutions, districts, or public spaces. For example, cities are not required to alert their

residents about crime incidents, and shopping malls are not compelled to notify patrons about emergencies (Farris & McCreight, 2014).

Clery requires colleges and universities that receive federal funding to inform students, staff, and faculty members about crime by maintaining a daily crime log, issuing Timely Warnings and Emergency Notifications, and distributing annual reports that describe their safety practices and statistics about reported crimes. Timely Warnings, which are often sent only via email, are required when any crime from a list of seven categories is committed within the defined "Clery Geography" and poses a serious or continuing threat to the campus community; the intent is to prevent similar crimes from recurring. In 2008, the Emergency Notification policy was added in response to the Virginia Tech shooting. This requires campuses to notify all members of the campus community about any "significant emergency or dangerous situation occurring on the campus that involves an immediate threat to the health or safety of students or employees" (U.S. Department of Education, 2016, p. 6[-2]) and includes a range of incidents such as fires, natural disasters, civil unrest, bomb threats, and armed intruders.

Students, staff, and faculty members typically receive a range of urgent messages from their campuses via email, text message, or other media. Some of these notifications may have been sent to comply with the Clery Act's Timely Warning policy, its Emergency Notification policy, or for some other reason. Because recipients are rarely aware of these distinctions, in our analysis, we use the umbrella terms *messages* and *notifications* (lowercase) to refer to any urgent message.[2]

Emergency messages can be important and effective if they persuade people to take protective action (such as evacuating a flood zone), and the crisis communication literature offers important insights about the construction and interpretation of such messages. However, the field's theoretical frameworks typically do not invite questions about how receiving a variety of emergency notifications over time or in a particular location might influence people's perceptions of risk and safety. This is especially relevant for notifications about crime on campus, given that Clery policies can compel emergency managers to send messages more frequently and about a larger range of incidents than they otherwise would.

Only a few studies consider the broader, long-term social costs and benefits of emergency messages. For example, Griffin and Wiecko (2015) raise concerns about AMBER alerts, including "the possibility of alerts causing unnecessary public fear"; because the system draws particular attention to sensational and rare stranger-danger incidents, it may distort "the public discourse regarding the nature of threats to children and their likely remedies" (p. 158). Further, in a review of work on mobile warning messages, researchers caution that the use of wireless emergency alerts "has outpaced investigation of their benefits, limitations, and actual and potential consequences" (Bean et al., 2015, p. 61). Building on this research, we examine possible unwanted effects of the Clery Act by investigating the relationships among receiving messages about crime, general perceptions of crime, and campus participation.

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[2] When referring to specific policies, we capitalize the terms *Timely Warning* and *Emergency Notification*.

Fear of Crime

Fear of crime is in and of itself a social problem. Research clearly establishes that "people generally respond to the fear of crime by adopting protective or avoidance behaviours" (Doran & Burgess, 2012, p. 9), but these behaviors can have significant personal and social costs. Fear of crime fosters distrust among neighbors, promotes social isolation, limits people's freedom of movement, and makes communities less safe by removing people from public spaces such as streets and parks (Doran & Burgess, 2012). Fear of crime has been theorized as a form of social control that disproportionately affects women by restricting their use of public spaces (Pain, 1997; Stanko, 1996; Valentine, 1989).

Researchers have also criticized the use of fear as a violence prevention strategy, especially for women. Rape-prevention efforts, for example, usually overemphasize potential victims' responsibilities to vigilantly avoid risk (Hall, 2004). One study describes a fundamental dilemma for rape-prevention programming: "There is no ideal level of fear that we should recommend to women" (Hickman & Muehlenhard, 1997, p. 544). This is because although taking too many precautions is unfairly restrictive, a total lack of risk avoidance may put people in danger (Warr, 2000). In this study, we are interested in the possible personal and social costs of our respondents' fear of crime. Stress and fear about crime may have a negative impact on learning outcomes (Barrett, Jennings, & Lynch, 2012), and for some respondents, fears may even limit their participation in particular courses and activities. As such, we ask:

RQ1:   Is fear of crime associated with respondents' campus participation?

Media and Fear of Crime

News, social media such as Nextdoor, and word-of-mouth are all sources of information about local crime. For many members of college campuses in the U.S., Clery-mandated text messages and emails are another source of information about local crime. The relationship between media consumption and fear of crime is complex because it depends on individual factors and the type of crime depiction (e.g., Ditton, Chadee, Farrall, Gilchrist, & Bannister, 2004; Heath & Gilbert, 1996). For example, media depictions and suspect descriptions (Walker, 2003) may foster racial stereotypes; one study raises particular concerns about the use of racial categories to describe suspects in notifications about crime on campus (Pelfrey, Keener, & Perkins, 2018).

Particular kinds of representations of crime are especially likely to increase fear. Heath and Gilbert (1996) argue that these qualities include nonfiction depictions, random crimes perpetrated by strangers, crimes that occurred in close proximity to audience members, and depictions of crime that lack a resolution and sense of justice. Notifications about crime on campus are a unique genre of media that often fulfill each of those criteria. Following Clery policies, messages are issued shortly after an incident has been reported, typically describe crimes perpetrated by strangers,[3] and are usually limited to incidents in which a suspect is still at large and thought to be a danger to others. Furthermore, one study found that anxiety about crime notifications was

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[3] On this point, practice may sometimes differ from policy. One report notes, "One of the biggest misconceptions" among campus administrators about Timely Warnings is that they are not required for reports of nonstranger rape (Stafford & Debowes, 2015, p. 7).

higher when people received them on mobile phones as compared with laptop and desktop computers (Xie & Newhagen, 2014). The literature on the associations among particular kinds of media depictions of crime and fear of crime leads us to ask:

RQ2:   *Is paying attention to notifications about crime on campus associated with increased worry about crime?*

Message Interpretation

Recipients' interpretations of messages do not always align with senders' intentions. For example, though Clery annual crime reports are intended to help students and their parents make decisions about which college to attend, studies have found little effect on college choice, and widespread perceptions that these reports generally do not influence student behavior or campus safety (Gregory & Janosik, 2003, 2006; Janosik, 2004; Janosik & Gehring, 2003; Janosik & Gregory, 2009). One study of the annual reports concludes, "For the most part, the energy and emphasis devoted to the crime reporting requirements of the Act are ineffective and misplaced" (Janosik & Gregory, 2009, p. 224).

Studies of the Clery Act notification policies have also identified concerns about message construction and interpretation. Madden (2017) finds that campus emergency managers face a number of challenges, including interpreting the "timely" requirement of Timely Warnings, negotiating the urgency of sending a message against the need for accuracy, and competing with other sources of information such as social media. Some universities do not have templates for messages or sufficient oversight for their emergency notification policies (Hesson, 2015). A 2003 study of student and staff perceptions of Timely Warnings, which were then distributed primarily through email and bulletins posted on campus, suggests that respondents want to be notified, but cautions that too much graphic detail might cause unnecessary fear (Greenstein, 2003). Madden's (2015) focus-group research on campus emergency notifications finds that a lack of geographic specificity and incomplete or unnecessary follow-up messages pose problems for message interpretation.

Crisis communication research demonstrates that the interpretation of a warning message depends on recipients' perception of the risk, their feelings of self-efficacy, and their past experiences (e.g., Sellnow & Seeger, 2013). Recipients may under- or overreact to messages about risk based on the ways that they interpret and personalize the information (e.g., Mileti, 1995). Likewise, studies of how audiences respond to representations of crime—in news or popular culture, for example—also show that reactions are dependent on context and individual factors (e.g., Schlesinger, et al., 1998). Given the diversity in how audiences interpret messages, we ask:

RQ3:   *How do respondents differ from one another in their perceptions of crime, their stated safety precautions, and their reported reactions to notifications about crime on campus?*

Study Context

The 155-acre Auraria campus in downtown Denver (USA) serves nearly 50,000 students, faculty, and staff in three higher education institutions. The campus opened in 1976 after an urban renewal project displaced residents of a predominantly Hispanic low-income neighborhood. Six- and eight-lane roads surround the campus, and most of its western half is used for parking lots and garages that back on to railroad tracks and a tangle of highway overpasses. There is a low-income residential neighborhood south of the campus, a stadium and amusement park with large parking lots to the north, and downtown Denver to the east.

Like most college campuses, the crime rate is lower than or comparable with national averages (Auraria Higher Education Center, 2016; Federal Bureau of Investigation, 2016). The campus's security and surveillance measures include a police department with more than 50 members, 300 security cameras (mostly outdoors), and 65 outdoor emergency phones. In the two years before the survey administration period (April 12–May 11, 2016), members of the Auraria campus were sent 28 individual text messages about 17 distinct incidents. Of these 17 incidents, six (35% of incidents) concerned potential or actual crimes (see the Appendix), five were weather related, four were tests of the system, one was a fire, and two were false alarms that the campus was "under a security lockdown." The six crime-related incidents included two suspicious items, a stabbing, a report of shots fired, one attempted sexual assault, and one attempted robbery.

Method

Our data came from a survey administered to a convenience sample and interviews with three campus officials. Open-ended survey questions allowed us to examine the potential unwanted or unanticipated effects of notifications, and quantitative survey questions provided a general indication of respondents' views on crime, their level of fear, and their perceptions of notifications about crime. The interviews with campus officials allowed us to compare their perceptions with respondents' views and to better understand how officials' interpretations of Clery shape the content and frequency of notifications. Using this media studies approach allowed us to analyze various aspects of the production, distribution, content, and reception of notifications about crime on campus.

Survey

We surveyed a nonrepresentative convenience sample of 157 students, staff, and faculty at the Auraria campus about their perceptions of notifications and of crime and safety on campus. A link to the survey was distributed to the lead author's personal contacts to reach faculty and staff, posted on social media, and provided to students in four courses in different disciplines with the incentive of extra credit.

Quantitative Survey Data and Analysis

A number of variables captured respondents' reported perceptions of crime. We coded *worry about crime* on campus as 0 = *not worried at all*, 1 = *slightly worried*, 2 = *moderately worried*, 3 = *very worried*,

and 4 = *extremely worried*. We created four scales that represented the *perceived frequency* of crimes on campus: *theft*, *assault*, *sexual harassment*, and *sexual assault*. Responses for each of the four items in each scale ranged from 0 to 5: 0 = *never*, 1 = *once a year or less*, 2 = *a few times a year*, 3 = *once a month*, 4 = *once a week*, 5 = *daily*. We standardized each item and took their mean (*perceived frequency of theft,* α = 0.95; *assault,* α = 0.97; *sexual harassment,* α = 0.98; and *sexual assault,* α = 0.98).

We created a scale that captured how often individuals undertake *precautions* in response to safety concerns. The six items in the scale were being alert to surroundings when walking around campus; avoiding certain areas on campus; avoiding campus at particular times of day or night; avoiding walking alone on campus; carrying a weapon (firearm, pepper spray, etc.) on campus; and choosing or avoiding certain types of transport to and from campus. Each item was measured on a 5-point scale: 0 = *never*, 1 = *sometimes*, 2 = *about half the time*, 3 = *most of the time*, and 4 = *always*. We standardized each item and took their mean (α = 0.81).

We created a scale that captured *desire for notifications* about incidents on campus. We presented 12 incidents to respondents, including a fire in a parking garage, a tornado warning, a robbery, a report of gunshots, and a report of a suspicious item on campus; the content was mostly copied from actual text messages and emails sent to the campus in the previous two years. Respondents indicated if they would want a notification for each incident via any (or none) of the following media: text message, email, campus social media, and campus websites. We standardized each of the 48 items and took their mean (α = 0.95).

We included a dichotomous variable to indicate whether respondents *opted-in to receive text messages* about emergencies on campus. We created two scales to capture respondents' reported attention to emails or texts about campus safety. Four items that asked whether respondents read notifications about crime and safety incidents, want to receive a notification about every immediate threat on campus, receive too many notifications about reported crimes on campus (reversed), and consider notifications about crimes and safety on campus relevant comprise each scale. Each item ranged from 0 to 4: 0 = *strongly disagree*, 1 = *somewhat disagree*, 2 = *neither agree nor disagree*, 3 = *somewhat agree*, 4 = *strongly agree*. We standardized the four items for each of the two scales and took their means (*attention to emails*, α = 0.79; *attention to texts*, α = 0.79).

Finally, our demographic variables included age, gender, and student versus faculty or staff.[4] We coded age dichotomously as 18 through 24, or 25 and older. We coded gender dichotomously as female or male, dropping the one respondent who reported nonbinary gender from our analyses. We contrasted students with faculty and staff.

In addition to descriptive statistics, we used latent class analysis (LCA) to identify subgroups in the data with distinct patterns on the covariates, including worry about crime, precautions, notifications, perceived frequency of theft, perceived frequency of assault, perceived frequency of sexual harassment, perceived frequency of sexual assault, opt-in to receive text messages, attention to emails, and attention to texts. LCA is an inductive statistical technique that estimates the likelihood that individuals belong to a

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[4] Because of an error, demographic information about race or ethnicity was not collected.

"latent" (i.e., unobserved) class based on patterns among observed variables (Muthen & Muthen, 2015). LCA is a model-based method that assigns individuals to groups such that individuals are as similar as possible within each class, and as different from each other as possible among classes. Because the true number of classes in the data is unknown, we estimated models with 1 to 8 classes, and we used the Bayesian information criterion (BIC) and the Akaike information criterion (AIC) to identify the most parsimonious model that adequately represented the data.[5] The best fitting model included three classes.

Because our quantitative data come from a convenience sample, we focus on describing typical patterns within our data rather than trying to make inferences about a larger population. As a result, we do not present inferential statistics such as standard errors, tests of significance, or confidence intervals.

Qualitative Survey Data and Analysis

Our survey also included open-ended questions about crime, fear, and notifications. Respondents were asked about their perceptions of safety on campus with prompts to describe any locations on campus where they had safety concerns and whether safety concerns had ever discouraged them from participating in any on-campus activities. Respondents were also shown screenshots of two actual text messages that had been sent to the campus in the past two years and asked to report their reactions. For example, respondents were instructed, "Imagine you are on campus and you receive this alert" and asked to describe, "What would you think and what would you do?" The survey also provided space for respondents to write any further questions they would have about each message. For the second sample message, respondents were asked to describe what they would think or do in response if they received the message in a few different locations, ranging from directly adjacent to the incident to off-campus. The survey also asked respondents to reflect on whether these kinds of messages had an impact on their feelings of safety on campus and the precautions they take. Respondents were asked why (or why not) they opted in to the mobile notification system and, finally, prompted to share any additional thoughts about the topics of the survey.

Written survey responses to open-ended questions were typically one or two sentences each and were analyzed to identify recurring themes (Guest, MacQueen, & Namey, 2012). For each open-ended question, the lead author read all the responses, inductively developed a list of themes, and coded the data for these themes.[6] This author identified four to eight themes in the responses to each question that recurred in at least five (but often more than 20) individual responses.

Interviews With Campus Officials

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[5] We also considered the number of individuals in the smallest class—if the BIC and AIC preferred a model with more classes, but some of those classes were sparsely populated, then our model had likely identified patterns based on very uncommon patterns in the data rather than more common patterns.

[6] Given that our primary use for these data was to choose and discuss representative examples, only one coder analyzed the written responses.

The lead author conducted in-depth interviews with three campus officials about their perceptions of the relationship between fear and notifications about crime and about the regulations and procedures for disseminating these messages. The interviewees were identified through a snowball sample beginning with Chief of Police Michael Phibbs and included Blaine Nickeson, Chief of Safety and Communications and consultant for the Clery Center for Security on Campus, as well as one additional campus communications official who did not wish to be specifically named. The three interviewees are the only individuals on campus ordinarily responsible for writing messages, choosing whether and how to disseminate them, and complying with Clery policies. Each interview was between 60 and 80 minutes long and was recorded, transcribed, and analyzed inductively for themes (Guest et al., 2012).

Results

Differences Among Respondents

Our LCA demonstrates that survey respondents varied in their perceptions of crime and reactions to notifications about crime (RQ3), exhibiting three distinct response patterns. Based on the distribution of observed variables across the classes, we label class 1 as "fearful," class 2 as "carefree," and class 3 as "blasé." Table 1 shows the average levels of covariates by class membership assigned in the LCA models.

Table 1. Means and Percentages of Variables Across Latent Classes.

	Class 1 fearful	Class 2 carefree	Class 3 blasé
Perceptions and Behaviors			
Worry about crime	0.36	−0.11	−0.16
Take precautions	0.60	−0.21	−0.27
Perceived frequency of:			
Theft	0.82	−1.44	0.17
Assault	1.15	−1.31	−0.08
Sexual harassment	1.03	−1.33	−0.03
Sexual assault	1.02	−1.25	−0.05
Desire for notifications	0.42	−0.07	−0.19
Opt-in to receive text messages	78%	65%	81%
Attention to texts	0.37	−0.28	−0.09
Attention to emails	0.46	−0.09	−0.24
Demographic Variables			
Age 18 to 24	68%	84%	62%
Female	79%	61%	57%
Student	90%	97%	91%
Percent of sample	27%	20%	52%

Individuals in the fearful class (27% of all respondents) provided survey responses indicating that they have high levels of worry about crime, take more precautions to mitigate their risk, and are highly attentive to notifications. Respondents in the fearful class report a relatively high degree of anxiety about crime—58% of those respondents are moderately, very, or extremely worried about crime on campus, compared with around a third in the other two classes (detailed results not shown). These respondents also report the highest perceived rates of theft, assault, sexual harassment, and sexual assault on campus. Notably, while 65% of all respondents are female, 79% of respondents in the fearful class are female.

People in the other two classes (carefree: 20% of respondents, and blasé: 52% of respondents) chose responses indicating relatively low levels of fear, but perceive crime rates differently. Both classes are disproportionately male, express similarly low levels of worry about crime, take relatively few precautions to prevent crime, and are relatively inattentive to notifications. In short, people in both the carefree and blasé classes are largely unconcerned about crime. However, there is one main difference: their perceptions of crime rates. People in the blasé class report that they perceive crime rates as moderate, whereas those in the carefree class believe that crime rates are very low. We label the former class as "blasé" because they seem to believe that crime happens at moderate rates but are not particularly concerned about it, and we label the latter class as "carefree" because their relative lack of concern about crime may be the result of a perception that crime is rare.

Fear and Campus Participation

We find that fear of crime may have negative effects for some respondents (RQ1), particularly for those in the fearful class (RQ3). Our survey found that many members of this class have significant fears about safety on campus, particularly in reference to its downtown location, and that they take a range of precautions, including avoiding campus.

Fears About Downtown and Perceived Outsiders

In their written comments, nearly 1 in 5 respondents expressed a perception that the Auraria campus is unsafe because it is situated downtown. A similar sentiment also appears in the Auraria Police Department's messaging, including a safety video that cautions, "Being on an urban campus also means it's important to keep safety in mind at all times" (Auraria Higher Education Center, 2015). Indeed, while the campus crime rate is typically low, it is adjacent to downtown Denver, which has the highest crime rate per square mile in the city.[7] While some respondents—especially in the blasé class—thought the crime rate was high because of the downtown location but were unconcerned about it, others described fear and anxiety about crime from surrounding areas. One respondent explained that she assumed the campus was relatively unsafe because it is situated downtown: "I do not have a false perception of safety. I understand that crimes happen on college campuses, especially on a campus that is downtown." Likewise, another respondent

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[7] The central business district has a yearly average rate (2012–2015) of 3,270 property, violent, and drug and alcohol crimes per square mile, compared with Auraria's rate of 449 incidents (Denver Police Department, 2017).

wrote, "Our campus is located downtown in the center of Denver. Meaning, there are higher chances of crime around the campus."

In written responses to a variety of questions, around 1 in 12 respondents expressed fears about perceived outsiders on campus. Some explained that being downtown means that "anyone has access to our campus," and others noted that homeless people in the library or the student center made them feel unsafe. One respondent theorized that "non-students come to campus to perpetrate crimes [against] students." Another requested, "Get non-students of all kinds (religious, homeless, 'hanging out') off campus, there should be monitored entry to campus from [light rail] stations." A few respondents specifically suggested that homeless people should be "ushered away" or prevented from entering the campus. These common fears are not supported by data on crime: As compared with the general population, people experiencing homelessness are more likely to be victims and less likely to be perpetrators of violent crime (Fitzpatrick & Myrstol, 2011). A couple of respondents were also critical of the effect of racial descriptors in one of the sample messages, noting that the description is "too broad" and that "any black man with that type of outfit on could be mistaken as the criminal."

Safety Precautions on Campus

Replicating previous research, we find that our respondents' worry about crime is associated with the quantity and frequency of precautions taken. There is a positive correlation between worry about crime and precautions taken ($r = 0.52$), meaning that those who worry more about crime take more precautions, including being alert to their surroundings, avoiding campus at particular times of day or night, avoiding walking alone, or carrying weapons. The Auraria Police Department's official safety tips include being aware of the resources on campus, such as the emergency phones and the text-a-tip line, not leaving belongings unlocked or unattended, reporting suspicious behavior, and walking with a friend at night (Auraria Higher Education Center, 2015, 2017). Indeed, three quarters of fearful respondents reported that they have ever[8] avoided walking alone. The campus safety video also advises that because Auraria is an "open campus, it's crucial to be vigilant and aware of your surroundings at all times" (Auraria Higher Education Center, 2015 [video]). More than 90% of respondents reported that they are "alert to their surroundings" at least "sometimes." Those in the fearful class were more likely to be in a persistent state of vigilance—51% of those respondents said that they were "always" alert on campus, compared with less than 25% in the other two classes. Further, 42% of respondents in the fearful class said they had ever carried weapons on campus, including firearms[9] or pepper spray, compared with around 24% in the other two classes (Figure 1).

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[8] "Ever" refers to any of the five answers except "never," including from "sometimes" to "always."

[9] In Colorado, people who have permits are allowed to carry concealed firearms on public university campuses.
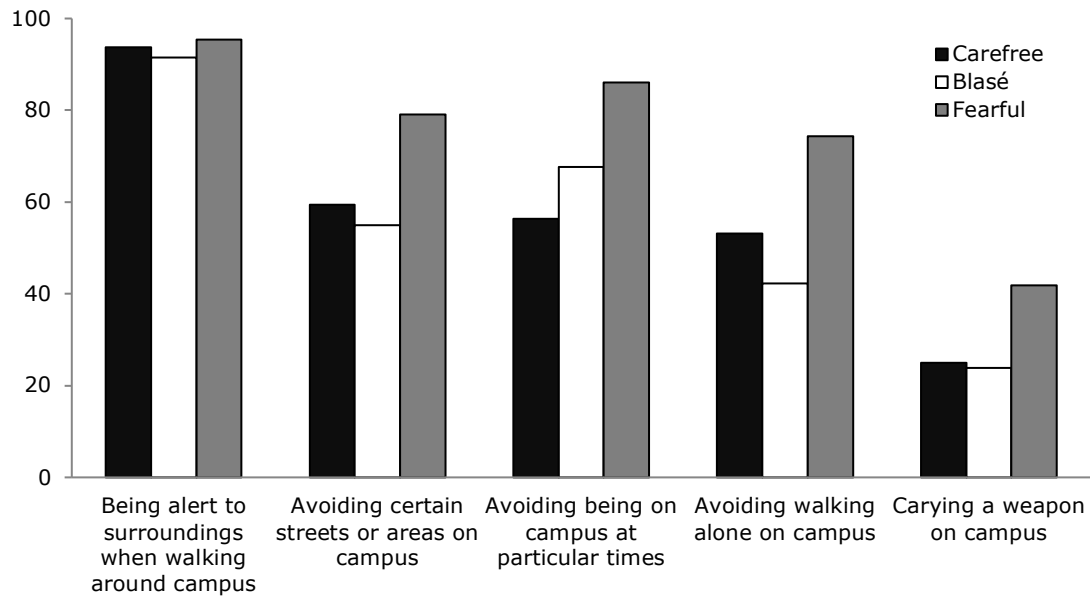
Figure 1. Percent of respondents who ever undertake precautions, by class.

Avoidance Behaviors

In our survey, the majority of all respondents, including around 80% of those in the fearful class, have ever avoided certain areas of campus or being on campus at particular times (Figure 1). However, campus police did not recommend this as a safety precaution. Instead, Police Chief Phibbs suggested that people use campus safety resources and contact police if they have specific concerns (personal communication, June 8, 2016).

Some respondents explained in their written answers that safety concerns had sometimes deterred their participation in campus events or courses, particularly those that ended after dark. For example, one respondent wrote, "I don't go downtown to campus after dark for any reason." Another answered a question about notifications by explaining, "I go to my classes and I get out of here, no hanging around and I don't live on campus, this type of stuff is one reason." It is possible that some students avoid participating in extracurricular activities and student groups as a result of their concerns about crime.

Some respondents said that concerns about being on campus after dark directly affected their enrollment and participation in courses. One person wrote, "Sometimes I will leave my night class early"; another reflected, "I have tried to avoid classes like labs that run until 9 p.m." Overall, in written answers to survey questions, 13% of female respondents (and none of the male respondents) noted that they avoided courses or study groups that ended after dark. These preliminary findings were supported by institutional data on more than half a million enrollments in courses on the CU Denver downtown campus that end after 5:00 p.m. Although approximately 50% of all undergraduates taking classes on campus are

female, women represented just 43% of students who enrolled in classes ending after 5:00 p.m.[10] While other factors may explain this discrepancy (such as family responsibilities, which inordinately fall to women), women may disproportionately avoid taking courses that end after dark because of concerns about safety.

Respondents' Reported Reactions to Notifications

We find that some respondents paid little attention to notifications, while others reported fearful reactions (RQ3).

Inattention to Messages

Some respondents, particularly those in the blasé and carefree classes, seemed to pay little attention to notifications, believed they were not very relevant, and were less likely to state that they wanted to receive these messages.

Many respondents reported that they do not read notifications: A total of 36% said they did not always read the text messages, and 63% said they did not always read the emails. Nickeson, Chief of Safety and Communications, explained, "Every institution struggles with making their audience desensitized," and he said that they usually only send Timely Warnings via email and use Rave, a contracted system,[11] to send Emergency Notifications via text message (personal communication, April 19, 2016). Nickeson explained the policies for sending text messages and emails:

> We only use that Rave system [to send text messages] when we need you to take action immediately for your own safety . . . Timely Warnings are a little different because it's more like information sharing; the whole purpose of a Timely Warning is to prevent similar crimes from happening. (personal communication, April 19, 2016)

This policy is consistent with our respondents' survey answers because they generally viewed the text messages as more relevant than the emails. However, while campus communications views text messages as alerts that are sent "when we need you to take action immediately for your own safety," only 50% of people in the carefree class said that they always read these messages. Even among those in the fearful class, only 74% said they always read the text messages (Figure 2). Though respondents may have been thinking of notifications they received when they were off campus when answering this question, these responses still raise concerns about their level of attention to potentially important messages.

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[10] We received data on 571,667 enrollments from fall 2010 to fall 2016 from the Office of Institutional Research and Effectiveness.

[11] According to the Rave Mobile Safety website, their system covers more than 40% of U.S. college students (Rave Mobile Safety, 2017).
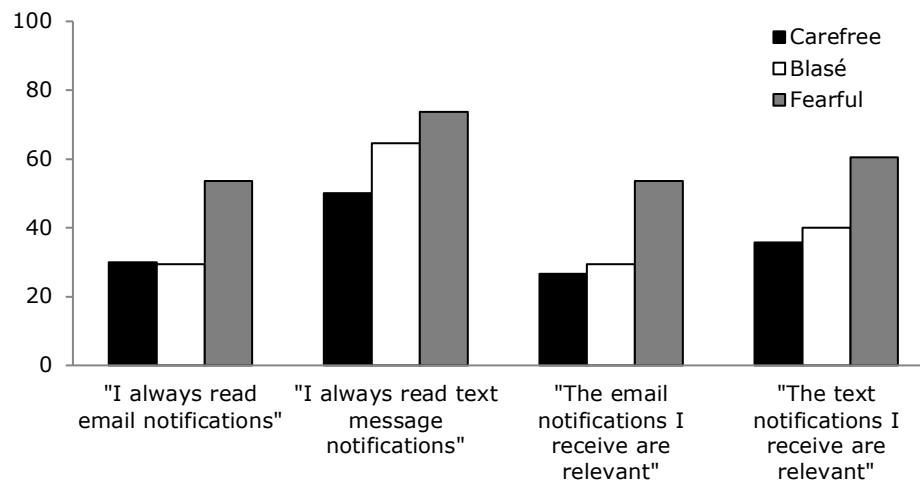
Figure 2. Percent of respondents who "strongly agree" with statements about crime and safety incidents.

Our results also show that perceptions of the relevance of messages were relatively low: Only around one third of respondents in the blasé and carefree classes agreed strongly that text messages and emails were relevant. Less than two thirds of respondents in the fearful class were convinced of the relevance of texts and emails (Figure 2). One factor that may contribute to low perceptions of relevance is that only two thirds of all incidents that resulted in text messages in the two years before the study were related to potential hazards. The rest were tests of the system (four incidents) or false alarms (two incidents). Another likely factor is that Auraria students are almost entirely commuters, and less than half of the text messages were sent during business hours in the fall and spring semesters.

In qualitative answers, nearly a quarter of respondents described indifferent reactions to a sample text message. For example, in response to a question about how they would react to receiving the sexual assault message if they were on campus, one respondent wrote, "I would not think much of it as it feels like I receive these kinds of alerts all the time." Another respondent implied that there were too many notifications about crime: "We're downtown. Stuff happens constantly. I don't need to have every little thing pointed out to me." Respondents pointed out that the sample message was "vague," and one questioned its relevance, because the time stamp visible in the screenshot indicated that the crime incident took place nearly an hour before the message was distributed: "[I'd think,] 'Wow, 45 minutes ago. Dude is long gone by now.' And back to whatever I was in the middle of." A number of respondents also wrote comments that were dismissive; one wrote, "Read it, delete it," and another reflected, "I would be amused that we are getting another one of these announcements, and I wouldn't do anything."

Respondents' reported desires to receive notifications about "immediate threats" were also associated with the medium (email or text message) and their class membership. Respondents in the blasé and carefree classes were particularly unlikely to say that they wanted emails or text messages about "every immediate threat on campus." Less than a third of the respondents in the carefree class strongly agreed

that they would want to receive text messages or emails about immediate threats, and among respondents in the fearful class, only half strongly agreed that they wanted an email, and almost three quarters said they wanted a text (Figure 3).
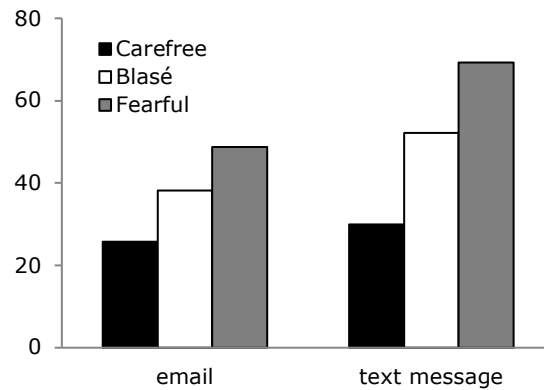

Figure 3. Percent of respondents who "strongly agree" that they want a notification about "every immediate threat on campus."

When asked whether and how they would like to be notified about a range of specific incidents, respondents agreed that they wanted to receive text messages more than other forms of communication. For six incidents that officials had actually notified the campus about via text messages, an average of 82% of fearful respondents (and around three quarters of carefree and blasé respondents) reported that they wanted these notifications. These responses ranged from a high of 91% of fearful respondents reporting that they wanted a text about a sexual assault with a suspect at large, to lows of just over 50% of blasé and carefree respondents reporting that they wanted a text about a robbery at a location adjacent to campus. Less than half of all respondents wanted emails about each of the incidents, and other modes of notification (campus social media and other campus websites) were even less popular.

Clery policies may contribute to our findings that many respondents do not want messages, perceive them as irrelevant, and do not pay attention to them. Campus police have the discretion to decide not to issue a notification if doing so might hinder efforts to investigate or respond to the emergency, but the need to avoid violations and fines constrains their decisions. Police Chief Phibbs explained,

> People hate it when they get stuff at three o'clock in the morning . . . I don't live on campus and not that many people do; why are you sending this out at three in the morning? The answer to that is that it's federal law and if we don't, we could get fined almost $56,000 for each institution, so for us, it's $168,000. (personal communication, November 2, 2017)

As a result, institutions may err on the side of sending messages that are not absolutely necessary for ensuring the safety of the campus. One campus communications official recalled a recent incident involving a conflict between two nonstudents and explained, "[Even if] we know that it's really not a situation

that is going to affect the campus . . . [based on Clery,] we had to send it out" (personal communication, March 31, 2016). It is possible that unnecessary messages such as these could partly explain our finding that many respondents say that they do not always read the notifications they receive, and even more say that the messages are not relevant.

Fearful Reactions to Notifications

At the same time, messages about crime may create considerable anxiety for respondents in the fearful class. Some reported that they felt less safe when they received messages about crime and that they would flee from campus after receiving a notification. Overall, there is a modest positive correlation between worry about crime and paying attention to text messages ($r = 0.20$) and email messages ($r = 0.31$) about crime and safety incidents on campus (RQ2).

In written answers to a question about how notifications about crime on campus influenced their feelings of safety, nearly half of those in the fearful class (and less than one third in the other two classes) said that receiving these messages made them feel less safe. For example, one respondent wrote, "Even though the texts are meant to protect students' safety, they are reminders of how unsafe campus is, which alarms me." In the two-year period before the study, campus members had received messages about six crime-related incidents, yet some respondents perceived a high and increasing frequency. For example, one respondent wrote, "I do feel that we have been getting more and more safety alerts recently so I am more worried about safety on campus." Another said, "The more I receive, the more I have a sense of a general lack of safety and security on campus." Some respondents also reported that notifications made them more vigilant, explaining, "It kind of forces you to be alert. You never know when this type of thing will happen to you." Another wrote, "It reminds me that we go to school on an open campus in the middle of the city so I need to be aware."

Our survey found extreme reactions among a few respondents who wrote that they would leave campus if they received sample text messages that described an attempted sexual assault. In written answers to a question about how respondents would react to this message, 14 respondents (9%) said that they would likely or definitely leave campus. They wrote comments such as, "I would be scared and would probably take a taxi home"; "I would start to feel panicked and would feel uncomfortable with the people surrounding me. I would probably head home TBH [to be honest]"; and "I would be scared and worried. I would then call my mom and have her pick me up." Likewise, one respondent recalled his reaction to a message from a few months prior: "The texts that went out about shots fired made me not go to campus that day for its entirety, even after the situation was all clear." In other words, some respondents reported that they interpret notifications about crime incidents as cause to flee from the campus.

Our results illustrate that for some people, avoiding areas of campus or leaving entirely may be an unintended and unwanted effect of notifications about crime. Police Chief Phibbs explained, "Unless we ask you to, [don't] evacuate campus. . . . If you don't know what you're fleeing to or from it doesn't help you. . . . You haven't increased your odds of safety in the least" (personal communication, June 8, 2016). He advised that instead of leaving campus or avoiding particular areas, people should plan ahead for an

emergency by knowing the safe areas on campus that are populated with other people and the options for seeking assistance from campus police if needed.

Finally, our interviews with campus officials further suggested that messages about crime could increase fear for some people. Police Chief Phibbs explained,

> The spirit of the law is good; transparency in police operations is good, . . . and we provide information that could make people safer if they take it seriously. But I also think there are times when it's just silly and we're worrying people for no reason. (personal communication, June 8, 2016)

Because messages are sometimes sent out only because of the Clery requirements, a campus communications official speculated that it "might give people the sense that the campus is more dangerous than it actually is" (personal communication, March 31, 2016).

Discussion

The modest correlation we find between worry about crime and paying attention to text or email messages (RQ2) does not establish a direction of causality. Still, our survey results, taken together with our interviews with campus officials, lead us to suggest that Clery notification policies might have the unwanted effects of fostering fear and overreaction for some recipients while leading others to disregard messages (RQ3). These findings are consistent with studies of over- and underreactions in the crisis communication literature and with studies of the differences in how viewers interpret mass media depictions. In the crisis communication literature, differences among individuals (such as their locus of control, for example) are typically examined as factors that might influence their response to a specific message. Media effects researchers who study depictions of crime often examine differences among individuals (such as past victimization) to isolate the effects of media exposure. Integrating aspects of both of these approaches, our LCA demonstrates important differences among individuals in their levels of fear, attention to notifications, and perceptions of crime rates.

Building on the research establishing that fear of crime is a social problem, our study confirms that fear is associated with reduced campus participation (RQ1) and documents a substantial level of worry in some respondents. Our results support Madden's (2015) finding that some students said they temporarily avoided particular areas in which crimes had been recently reported. Many people in the fearful class have serious concerns about being on campus after dark, the downtown location, and the presence of people experiencing homelessness on or near the campus. As the literature on gender and fear of crime explains, women are more fearful about crime and as a result may limit their use of public places. Particularly for the fearful class, the Clery Act might inadvertently hinder some students' education. Fear can create stress and have negative effects on learning, and it seems to lead some respondents, especially those in the disproportionately female fearful class, to be "always" alert to their surroundings, to carry weapons, and to avoid certain areas of campus and evening courses. Feeling safe on university campuses is an important educational equity issue, given that this feeling is a privilege that is often disproportionately available to men, White people, people who conform to gender norms, and able-bodied people.

Recommendations

Our results raise concerns that the Clery Act's policies might undermine the effectiveness of emergency notification systems. Given our evidence that some respondents overreact to notifications about crime, future research could investigate the prevalence of this problem in greater detail and how message construction could reduce unwanted effects. Also, more crisis communication researchers could consider the broader repercussions of disseminating notifications about crime, and more media studies researchers could apply their methods and theories to institutionally produced media such as mobile notifications.

To help mitigate both overreactions and desensitization, we suggest that Clery policies could be modified to allow campus officials more discretion in issuing notifications. Reducing the threat of fines by narrowing the requirements for Emergency Notifications could allow emergency managers to avoid sending unnecessary messages. For example, they might limit messages to incidents in which they can advise recipients to do something concrete and specific to increase their safety, such as temporarily avoiding a particular area. Timely Warning emails also typically do not ask recipients to take any immediate action,[12] operating instead on the assumption that being aware that a crime has occurred on campus is a an effective way to "aid in the prevention of similar crimes" (U.S. Department of Education, 2016, p. 6[-12]). Given that the majority of our respondents did not want or read email messages about crimes on campus, and that for some, such emails may have increased their overall fear of crime, we suggest that policy makers reconsider the Timely Warning policy.

Our findings also suggest that campus police and communications officials may want to allocate more resources to increasing perceptions of safety, including interventions that could mitigate fears about particular people on campus. For example, campuses could invest more resources in programs to strengthen the connections between their members and the surrounding communities.

The appealing premise behind the Clery Act's crime reporting and notification requirements is that providing members of a campus with more information about crime will help increase their safety, presumably by making potential victims more alert and cautious. This assumption relies on the simplistic idea that people interpret and respond to messages about crime in rational and predictable ways. Unfortunately, our results suggest that simply knowing about crime incidents does not necessarily make people safer. We find that Clery policies may inadvertently decrease safety by desensitizing some audiences while potentially reducing campus participation for those who are particularly fearful. If legislators genuinely want to increase safety on college campuses, we urge them to develop evidence-based policies.

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[12] Urgent information would ordinarily be sent as a text message Emergency Notification.

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Appendix

***All Crime-Related Text Messages (Not Including Follow-Up Messages) Sent
to Members of the Auraria Campus, April 2014–April 2016***

4/11/15 4:08 p.m.	AURARIA CAMPUS - Suspicious item at Campus Village (4th/Walnut St) - building evacuated. Avoid the area. Additional info provided as available
5/9/15 2:44 p.m.	AURARIA CAMPUS: Attempted sex assault occurred on campus around 2:00 P.M. Suspect is a black male, 40s, thin build, beard, wearing a black jacket and pants.
6/24/15 9:51 a.m.	AURARIA CAMPUS: Robbery S of Colfax on Mariposa. Suspect: Native American male, 6-2, 220lbs, clean cut, grey/blur striped shirt, jeans. ACPD 303-556-5000 or 911
8/4/15 2:05 p.m.	AURARIA CAMPUS: The Denver Police have reported a suspicious item at the RTD bus stop on the northeast corner of 9th & Auraria.
8/17/15 12:42 p.m.	AURARIA: Stabbing at Speer & Colfax. Susp is a tall thin Hispanic male wearing a red hat, blk shirt & has a skateboard. please call if you see him 303-556-5000
1/25/16 1:42 p.m.	AURARIA CAMPUS Report of shots fired near campus at Speer/Kalamath. Suspect described as light skin B male, driving W Cadillac 499-PVD, left southbound.