



FIRE: THE FIRST-YEAR INNOVATION & RESEARCH EXPERIENCE

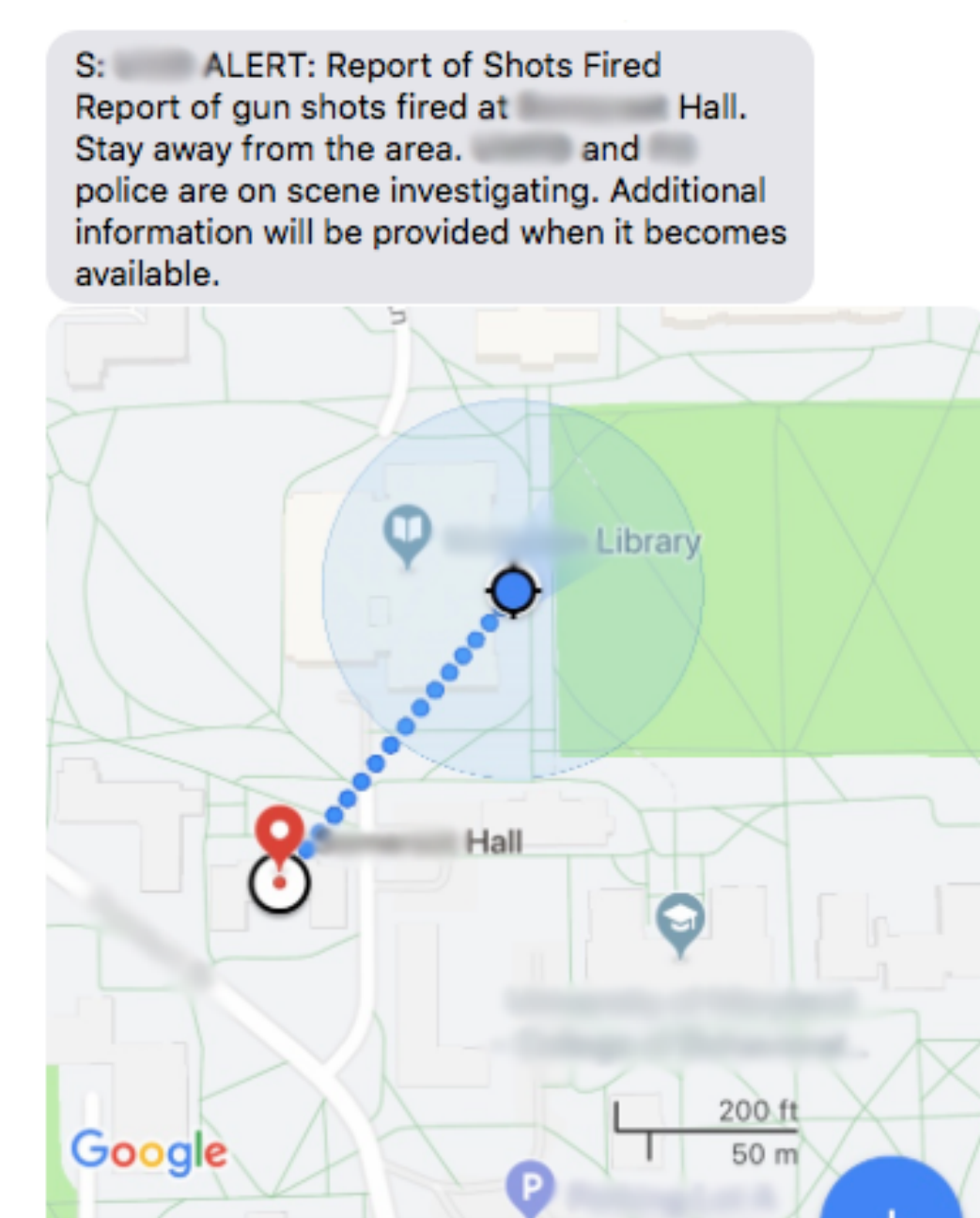
RISK COMMUNICATION & RESILIENCE

Background

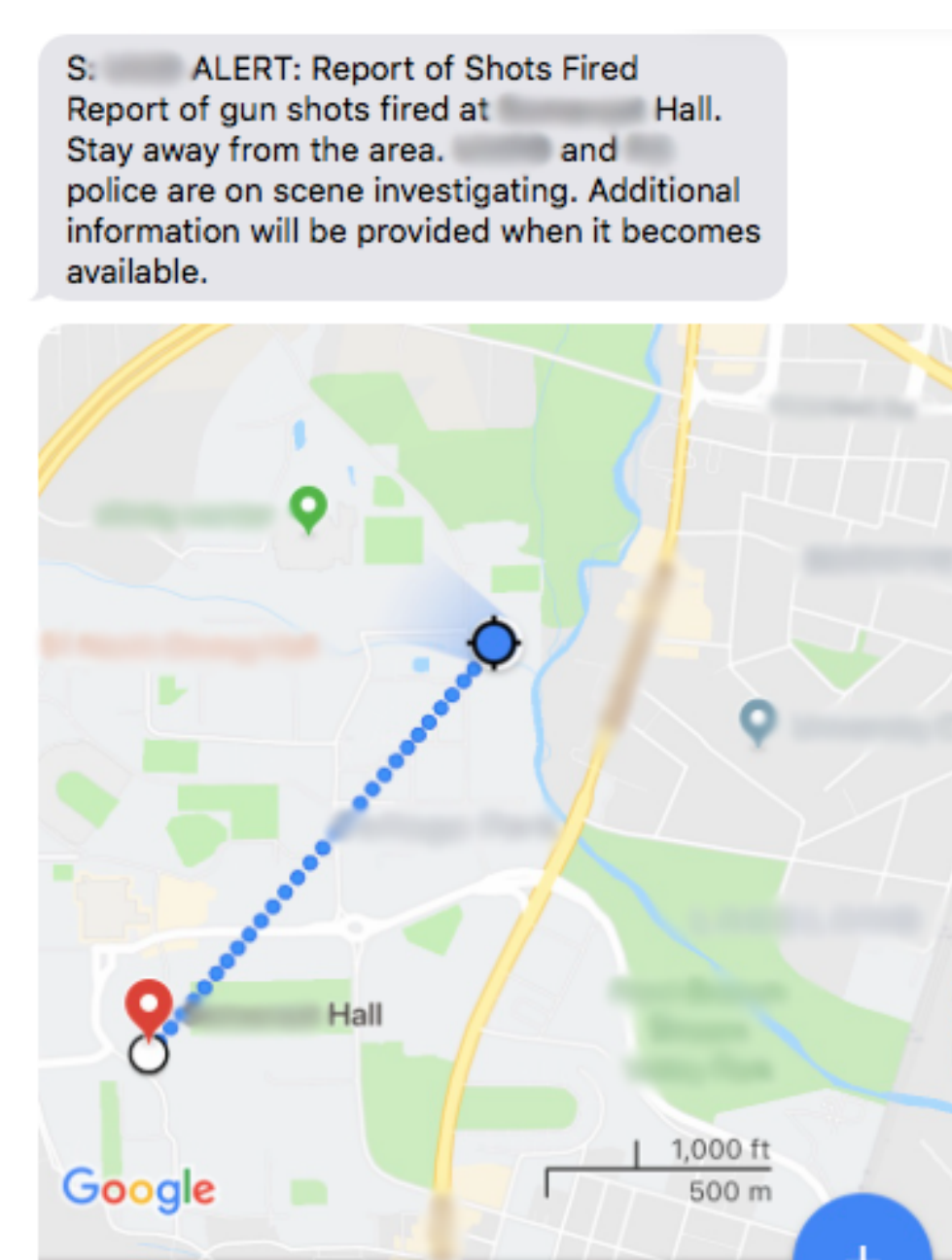
- Maps are useful in illustrating the magnitude and significance of a communicated risk and may be more time-efficient than a detailed written alert in a rapid-onset emergency (Dransch, Rotzoll, & Poser, 2010; Bean et al., 2015; NASEM, 2018).
- Maps have been found to increase recipient proximity awareness (Severtson & Burt, 2012) and comprehension (Liu et al., 2017; NASEM 2018; Madden, 2015).
- Researchers have yet to come to a unanimous conclusion regarding the impact maps have on public response (NASEM, 2018).
- Campus alert systems remain understudied.
- The target demographic, such as a student population, must be considered when introducing a new communication method (Schneider, 2010).

Methods

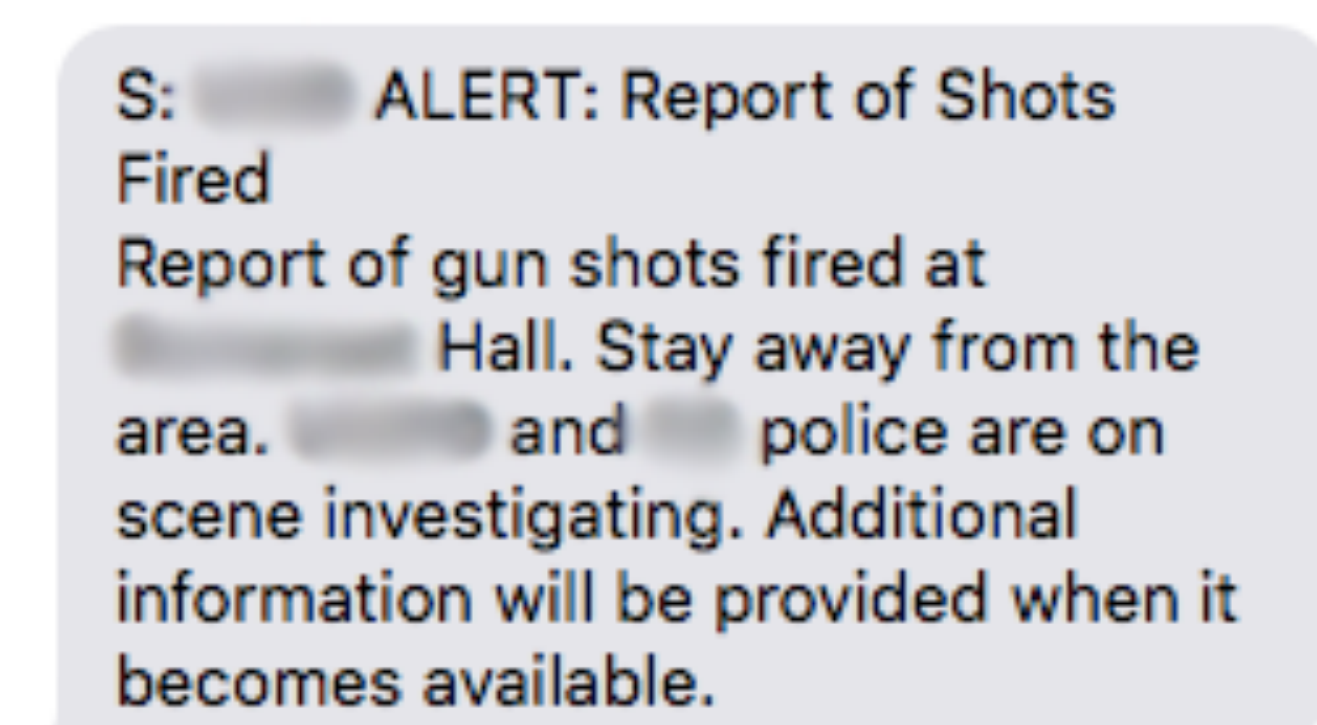
- 2 (topic: armed robbery, shots fired) x 3 (map: no map, short distance map, long distance map) full-factorial study design
- Participants (N=169) randomly assigned to one of six conditions
- Analysis of covariance
 - Independent variables: message topic, type of map
 - Covariates: age, race (white v. non-white), gender, year in college
 - Dependent variables (measured on a Likert-type scale, 1-7): risk severity (1 item), risk susceptibility (2 items) message understanding (8 items), trust in source (8 items), behavioral intention (7 items)



Condition 1: shots fired, short distance map



Condition 2: shots fired, long distance map



Condition 3: shots fired, no map

“You are here”: Assessing the inclusion of maps in a campus emergency alert system

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Findings

Preliminary Results

Variable	Topic	Map	Mean	Confidence Interval (95%)
Risk severity	Robbery	None	4.425	[3.880, 4.970]
		Short distance	4.213	[3.679, 4.748]
		Long distance	4.033	[3.479, 4.587]
	Shooting	None	4.967	[4.430, 5.504]
		Short distance	5.288	[4.731, 5.844]
		Long distance	4.859	[4.301, 5.417]
Risk susceptibility	Robbery	None	3.451	[2.950, 3.952]
		Short distance	3.692	[3.201, 4.184]
		Long distance	3.316	[2.806, 3.825]
	Shooting	None	4.059	[3.566, 4.552]
		Short distance	4.371	[3.860, 4.883]
		Long distance	3.712	[3.199, 4.225]
Behavioral intention	Robbery	None	4.524	[4.106, 4.942]
		Short distance	4.637	[4.227, 5.047]
		Long distance	4.311	[3.885, 4.736]
	Shooting	None	5.223	[4.811, 5.634]
		Short distance	5.192	[4.765, 5.619]
		Long distance	4.871	[4.443, 5.299]
Message understanding	Robbery	None	4.972	[4.529, 5.415]
		Short distance	4.539	[4.104, 4.973]
		Long distance	4.821	[4.370, 5.271]
	Shooting	None	4.849	[4.413, 5.285]
		Short distance	4.726	[4.274, 5.179]
		Long distance	4.670	[4.217, 5.124]
Trust in source	Robbery	None	5.376	[4.926, 5.826]
		Short distance	4.768	[4.326, 5.210]
		Long distance	5.437	[4.980, 5.895]
	Shooting	None	5.432	[4.989, 5.875]
		Short distance	5.600	[5.141, 6.060]
		Long distance	5.355	[4.895, 5.816]

Variable	Topic	Mean	Confidence Interval (95%)
Risk severity	Robbery	4.22	[3.91; 4.54]
	Shooting	5.04	[4.72; 5.35]
Risk susceptibility	Robbery	3.39	[3.20; 3.77]
	Shooting	4.05	[3.76; 4.34]
Behavioral intention	Robbery	3.49	[4.24; 4.73]
	Shooting	5.10	[4.85; 5.34]
Message understanding	No significant effect		
Trust in source	No significant effect		

Descriptive Statistics

	Minimum	Maximum	Mean	Std. Deviation
Age	18	43	19.72	2.39
Years in college	1	8	2.25	1.27

	Response	Frequency	Percent
Gender	Woman	120	71.0
	Man	48	28.4
	Gender fluid	1	0.6
Race/Ethnicity	African American/Black	24	14.2
	Latino/Hispanic	17	10.1
	White/Caucasian	91	53.8
	Asian/Pacific Islander	31	18.3
	Unknown/Other	6	3.6
Subscribed to text alerts	Subscribed	78	46.2
	Not subscribed	89	52.7
	Unsure	2	1.2

Implications

- Students react differently to emergency alerts based on the topic of the alert. Responses were higher across all variables in which there was a significant effect when exposed to the shooting topic.
- When exposed to an alert with a short distance map, participants perceived higher risk severity and risk susceptibility for the robbery and shooting topics, indicating that visualization of a proximate threat resulted in a heightened response.
- Not having a visualization of the threat location appears to lead to a heightened response that could stimulate fear and confusion even more than an alert that displays the recipient’s close proximity to an imminent threat.
- Including a map demonstrating the recipient’s proximity to a communicated threat could decrease fear for threats that are unlikely to impact their area and rightfully produce a heightened response for more proximate threats.