

## **Organizational Threat Appraisal by Publics: The Effects of Perceived Temporal Distance on Health Crisis Outcomes**

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The current study advances understanding of how organizational threat affects the way publics respond to a health crisis. To this end, we investigated the influence of perceived temporal distance from organizational threat on crisis outcomes (i.e., organizational reputation, crisis emotions, and supportive behavioral intention) and the role of perceived health threat in this relationship. The findings of an experimental study ( $N = 239$ ) indicate that perceived temporal distance from organizational threat is negatively associated with crisis emotions and positively related to supportive behavioral intention. In addition, mediation analysis revealed indirect effects of perceived temporal distance on supportive behavioral intention via crisis emotions. The indirect effects through crisis emotions and the direct effect of temporal distance on supportive behavioral intention are also contingent on perceived health threat. Theoretical and practical implications are discussed.

*Keywords: crisis communication, organizational threat, temporal distance, health crisis, contingency theory of strategic conflict management*

Scholars have attempted to identify the factors a crisis-stricken organization should consider in understanding different crisis situations and how publics respond to them (Cancel, Cameron, Sallot, & Mitrook, 1997). Organizational threat is a representative factor which directly relates to potential damages inflicted by a crisis (Cancel, Mitrook, & Cameron, 1999). To date, most studies in crisis communication have focused on the organizational perspective of threat (e.g., how public relations practitioners and their organizations appraise and respond to crises). However, understanding publics' perspectives (e.g., their perception of a crisis and responses to the organization in crisis) is important because their views determine the aftermath of an organizational crisis (Coombs, 2010b). In this sense, the attempts to incorporate publics' perspectives into understanding organizational threat are valuable because the level of organizational threat perceived by the organization involved is likely to differ from the one perceived by publics. Hence, this article explores how publics appraise crisis threats and how such appraisal affects their various responses to a health crisis.

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The idea of temporal distance extends the concept of threat in a new direction informed by construal level theory (Liberman & Trope, 1998). The perception of distance is addressed by construal that refers to “the processes that give rise to the representation of the event itself” (Trope & Liberman, 2010, p. 443). In terms of construal levels used for evaluating different psychological associations, psychologically distant objects are regarded as abstract, structured, and decontextualized (high-level construal; e.g., “John is aggressive”), whereas psychologically proximal objects are construed as concrete, unstructured, and contextualized (low-level construal; e.g., “John tried to push Shelly on the way to the cafeteria”; Trope & Liberman, 2003, p. 405; Trope, Liberman, & Wakslak, 2007). In addition, individuals have distinct psychological associations with events based on perceived temporal distance (Liberman & Trope, 1998). Studies have found that people tend to have a more positive view of a particular event that will occur in the distant future rather than the near future (Trope et al., 2007). This is likely consistent in organizational threat and its effects on crisis outcomes from publics’ perspective. How publics perceive temporal distance from a crisis threat is a key to understanding their crisis outcomes, which are related to their psychological associations with an event (Trope & Liberman, 2010). In this regard, this study examines how perceived temporal distance might extend our understanding of organizational threat and its effects on crisis outcomes.

A health crisis case was adopted as the research context for this study. During a health crisis, threat is perceived commonly by crisis-stricken organizations and publics. Threat is a factor to determine an organization’s actions for crisis management from its viewpoint (Cameron, Pang, & Jin, 2007). Publics may also perceive the crisis threat, but in a different way (Carpenter, 2010). A health crisis threat perceived by the organization immediately after a crisis happens may not be simultaneously perceived by publics as a direct threat to themselves. At what point an organizational crisis threat starts to exert its direct impact on publics and therefore becomes salient among affected publics may be different by situation. Thus, it would be essential to focus on the time when a crisis threat is perceived by publics. Time, as an understudied crisis factor, has recently been suggested as an important aspect of crisis communication (Coombs, 2019). Temporal distance, as a key element within the time domain overlooked in crisis communication research (Coombs, 2019), should be emphasized in understanding how publics perceive a crisis threat (Trope & Liberman, 2003) and the psychological effects of crisis distance appraisal on publics’ crisis responses.

Furthermore, this study integrated a risk communication perspective in the context of crisis. This approach, integrating crisis and risk communication in managing complex health crises that affect both organizations and publics, has recently been identified as an important direction. According to Seeger (2006), recent government health agencies’ efforts in managing emerging public health crises have been directed toward merging risk communication, which largely focuses on “a problem of getting the public and/or specific target audiences to attend to identifiable risks” (p. 234), and crisis communication into a more comprehensive approach called “crisis and emergency risk communication” (Reynolds, Hunter-Galdo, & Sokler, 2002). Echoing this call, we further explore the interaction effect of perceived temporal distance and perceived health threat on various crisis outcomes.

## Literature Review

### *Threat Dimensions*

Threat, which is defined as a “potentially negative situation involving publics” (Cancel et al., 1999, p. 184), was originally conceptualized in the contingency theory of strategic conflict management (Cancel et al., 1997). According to the theory, more than 80 contingency factors determine the stance that an organization takes toward its publics between pure advocacy and pure accommodation (Cancel et al., 1997, 1999). As one of the factors, levels of threat determine how accommodating an organization is to its publics, suggesting that threat can impact how an organization responds to a crisis (Cancel et al., 1999).

The threat appraisal model, developed to extend contingency theory, suggests a rigorous approach to understanding organizational threat in the context of crisis management, proposing three dimensions of threat: type (internal vs. external), duration (short term vs. long term), and level (high vs. low; Jin, Pang, & Cameron, 2005, 2012a). The threat dimensions are operationalized based on previous studies about threat perception (Carver, 1977; Lanzetta, Haefner, Langham, & Axelrod, 1954). For instance, marketing scholars have suggested three types of threat: physical/social, second/third party, and immediate/delayed (Strong, Anderson, & Dubas, 1993). With regard to physical/social type, public relations scholars have focused on social threats to develop threat dimensions (Jin et al., 2012a). The second-/third-party type also relates to whether the threat originates inside an organization or comes from an external source (threat type); the immediate/delayed type relates to whether a threat is short term or long term (threat duration) and how intense the threat is (threat level). Studies concerning the threat dimensions have examined how a threat impacts crisis perception and response from organizational perspectives. One experimental study showed that threat type (internal vs. external) and duration (short term vs. long term) significantly influences cognitive threat appraisal (i.e., situational demands and required resources), emotional arousal, and degree of accommodation among public relations practitioners (Jin & Cameron, 2007). Public relations managers in the external and long-term threat condition reported a greater perception of situational demands of the crisis (e.g., danger, uncertainty) and required organizational resources (e.g., knowledge, skill, and time), the most intense negativity, and more accommodating stances of an organization to its publics.

Although organizations are key players in crisis management, how publics perceive a crisis threat is crucial to understanding crisis effects and maximizing crisis management effectiveness. Given that a crisis inevitably poses a certain level of threat among publics and publics’ crisis responses depend on the nature of a given threat (Jin & Cameron, 2007; Rosenthal & Kouzmin, 1997), conceptualizing threat from the perspective of publics is necessary. Indeed, it is important to differentiate a threat as a stimulus and how publics react to that stimulus (Strong et al., 1993). To this end, Kim (2017) suggests time as an additional threat dimension, a plausible idea given the connection between threat and the actual occurrence of a crisis. Threat leads to crisis, but not all cases of threat reach that level of intensity (Jin et al., 2012a). Hence, understanding how a threat develops into crisis involves understanding multiple dimensions of threat. Kim (2017) proposes that temporal distance between the current time and temporal points of threat realization provides a more holistic view of threat appraisal, that is, the extent to which threat perception affects the way publics cognitively, affectively, and behaviorally respond to crisis situations.

### ***Temporal Distance of Crisis Threat***

Among the four dimensions in relation to construal of an event (i.e., temporal, spatial, social, and hypothetical distance), the temporal distance dimension, which is closely related to time, gives us a direction for extending threat-related concepts in public relations and the crisis communication domain (Liberman & Trope, 1998). That is because, by influencing how individuals react to future events, temporal distance changes how they evaluate objects. Construal level depends on perception of temporal distance: A temporally distant event is construed as more abstract, simple, and high level than a temporally proximal event (Trope & Liberman, 2003). Most notably, how people construe future events determines their judgments, attitudes, and behaviors (Eyal, Liberman, & Trope, 2008). When making decisions, individuals focus on essential and abstract features for construal of distant-future events, but incidental and concrete features for construal of proximal-future events (Liberman & Trope, 1998; Trope & Liberman, 2003). For example, individuals' reactions in such issues as pro-environmental behaviors (Carmi & Kimhi, 2015), consumption (Galak, Redden, Yang, & Kyung, 2014), and preventive behaviors (Chandran & Menon, 2004) vary according to differential temporal distance.

Kim (2017) proposes temporal distance as a threat dimension in the context of crisis communication, an approach that helps predict crisis-related outcomes from the perspective of publics. Threat is an inherently future-oriented concept; thus, it is perceived based on temporal construal of future events. Indeed, when publics perceive that a threat might become an actual crisis and/or begin to impose a negative impact on an organization (proximal future vs. distant future), society or publics can determine the intensity and direction of crisis outcomes (Kim, 2017). In the context of crisis, temporal distance determines perception of relevance (Chandran & Menon, 2004). For instance, people tend to consider proximal-future risk events more relevant than distant-future ones (Zwickle & Wilson, 2013). Spence, Poortinga, and Pidgeon (2012) demonstrated that survey participants in the United Kingdom reported more concern about climate change because they perceived it as a temporally proximal issue. These studies hint at the idea that temporal distance from a threat is a significant factor in predicting crisis outcomes. Indeed, involvement has been associated with the way publics respond to crisis (e.g., crisis emotions; Choi & Lin, 2009) and level of involvement is likely to depend on perception of temporal distance.

### ***Effects of Temporal Distance on Crisis Outcomes***

According to construal level theory, individuals tend to react more favorably to a high-level construal object than a low-level one (Trope et al., 2007). Due to future optimism, people likely evaluate distant-future events more favorably than proximal-future events (Trope & Liberman, 2003). One study found that the level of perceived risk was higher when the possibility of heart disease (i.e., a negative outcome) was presented in a day frame versus a year frame (Chandran & Menon, 2004). Other studies have shown that positive attributes of an object are associated with high-level construal used for temporally distant objects (e.g., Eyal, Liberman, Trope, & Walther, 2004). Pennington and Roese (2003) found that a high-level construal of a distant event was related to positive outcomes and a low-level construal of a proximal event was related to negative outcomes. In their experiment, participants expressed greater concern about positive outcomes (e.g., improving GPA) two weeks before an exam than on the day of the exam. In contrast, they reported the same level of concern about negative outcomes (e.g., damage to

academic transcript) at both points in time. In line with this finding, Eyal et al. (2004) found that participants generated more favorable arguments about a social plan to be implemented in the distant future than in the proximal future. Furthermore, when the value associated with high-level construal is more positive than the one associated with low-level construal, an object is perceived to be more attractive as temporal distance increases (Trope & Liberman, 2003, 2011). More specifically, distant-future events (high-level construal) are perceived to be more positive than proximal-future ones (low-level construal); thus, related outcomes are likely to be perceived as more favorable as temporal distance increases.

The pattern delineated above hints at the way publics appraise and respond to a future threat from a health crisis. A prior audience-centered theoretical approach suggests that different facets of crisis determine publics' crisis responses (e.g., organizational reputation, crisis emotions, and supportive behavioral intention). For instance, situational crisis communication theory posits that crisis responsibility attributed to an organization affects publics' cognitive, affective, and behavioral responses to a crisis and the organization (Coombs, 2007). This rationale should be applied to the way in which publics' perceived temporal distance from a crisis threat affects their crisis responses. To wit, temporal distance from a threat can be a key facet of a crisis in the eyes of publics, which contributes to the foundation for publics' crisis responses. Given that the psychological associations with an event are a cue to forming individuals' reactions (e.g., judgment, attitudes, and behaviors; Trope & Liberman, 2010), a crisis threat viewed by publics is likely a determining element in their cognitive, affective, and behavioral responses to the crisis event.

Based on the discussion above, this study explored various situational crisis communication theory-based outcomes as a consequence of a temporal construal of a health crisis threat, which have been found to be affected by publics' crisis perception (Coombs, 2007). First, organizational reputation, which is defined as "a collective assessment of a company's ability to provide valued outcomes to a representative group or stakeholders" (Fombrun, Gardberg, & Sever, 2000, p. 243), is a key cognitive outcome. By nature, a crisis tarnishes the organization's reputation, but the level of reputational damage varies by crisis responsibility attributed by publics (Coombs, 2010b; Dowling, 2002). Similarly, this study posited that how publics perceive the temporal distance from a crisis threat would be a determining factor for the organizational reputation. Second, in relation to affective outcomes, crisis responsibility, as viewed by publics as a facet of crisis, has been found to influence crisis emotions (Coombs, 2010b). Scholars have conceptualized and operationalized emotions that publics feel specifically in crisis situations (Jin, 2010; Jin, Liu, Anagondahalli, & Austin, 2014). Emotion, which refers to "organized cognitive-motivational-relational configurations whose status changes with changes in the person-environment relationship as this is perceived and evaluated (appraisal)" (Lazarus, 1991, p. 38), is formed as a mental state of readiness, reflecting the consequence of individuals' appraisal of the environments and their own thoughts. Considering that temporal distance from a crisis threat provides a cue to appraising the environment around individuals, in this study, we regarded crisis emotions as a possible reaction of publics. Third, situational crisis communication theory has also regarded supportive behavioral intention (e.g., positive word of mouth, purchase intention) as an ultimate crisis outcome formed as a result of publics' perception of a crisis (Coombs, 2010b). Behavioral intention, which is "people's readiness to perform a behavior" (Yzer, 2013, p. 124), serves as the most immediate predictor of individuals' behavior. This study therefore examined supportive behavioral intention as a potential crisis outcome elicited by publics' perceived temporal distance from a crisis threat.

In sum, we posited that different levels of temporal distance from a crisis threat from publics' perspective would reveal facets of the crisis and shape their crisis responses. We predicted that a threat in the distant future would likely elicit more favorable outcomes than a threat in the proximal future. However, because of a lack of empirical evidence from previous research examining temporal distance in a crisis context, the following research question was posed to examine whether crisis outcomes (i.e., organizational reputation, crisis emotions, and supportive behavioral intention) would be more positive when individuals perceive greater temporal distance from organizational threat:

*RQ1: How will perceived temporal distance from organizational threat influence (a) organizational reputation, (b) crisis emotions, and (c) supportive behavioral intention?*

Previous studies have also identified the mediating role of those factors in the context of crisis communication. Examining the cognitive processing model of crisis communication, Kim and Yang (2009) found that organizational reputation mediated the effects of the organization's crisis response and emotional response on supportive behavioral intention (i.e., word of mouth, purchasing, and complaining). In terms of the mediating role of crisis emotions, another study showed that anger mediated the effects of crisis responsibility on negative word of mouth and purchase intention (Coombs & Holladay, 2007). These studies suggest that negative crisis emotions negatively relate to supportive behavioral intention and that organizational reputation positively relates to supportive behavioral intention.

To understand the underlying mechanism of the potential effects of temporal construal of a crisis threat, we further examined the possible mediating effects of organizational reputation and crisis emotions on the relationship between publics' perceived temporal distance from organizational threat on their supportive behavioral intention. Considering that there is a dearth of empirical findings about the effects of temporal distance in crisis communication contexts, the following research question was asked:

*RQ2: Will (a) organizational reputation and (b) crisis emotions mediate the effects of perceived temporal distance from organizational threat on supportive behavioral intention?*

### **Perceived Health Threat**

Further exploring the role of threat from the publics' perspectives, we considered how risk communication fits into the health crisis context. Indeed, a reciprocal relationship exists between crisis management and risk management (Coombs, 2010a). The role of crisis management is to identify risks that can evolve into crises, and the role of risk assessment is to guide crisis preparation (Williams & Olaniran, 1998). Risk communication creates "a dialogue between organizations that create risks and the stakeholders that must bear the risk" (Coombs, 2010a, p. 57). Given the close relationship between crisis and risk management, the current study extends the scope of crisis communication research by accounting for risk perception (i.e., perceived health threat) elicited by a crisis situation (Tang & Wong, 2004). The intersection between crisis and risk communication focuses on how publics' perceived health threat interacts with their perceived temporal distance from the crisis threat.

In the field of risk communication, the key variables associated with perceived health threat are severity (i.e., beliefs about how serious a health threat and its consequence are) and susceptibility (i.e., beliefs about how vulnerable individuals are to a health threat; Austin, Ahmad, McNally, & Stewart, 2002). Health communication theories (e.g., health belief model) assume that these variables predict individual health behaviors when potential risks are presented (Rosenstock, Strecher, & Becker, 1988). Janz and Becker (1984) argue that people would accept advised health behaviors to prevent contracting a disease when they believe they are susceptible to it and its consequence would be severe. This line of research regards perceived health threat (i.e., risk perception) as a direct antecedent of health behavior (Yoo, Kim, & Lee, 2018). In this study, however, we adopted a different approach to including perceived health threat given that a health crisis affects both an organization and publics. To wit, we investigated how perceived health threat affects the way in which publics respond to a crisis based on their perception of temporal distance from a crisis threat. To our knowledge, perceived health threat has not been used to understand how temporal distance affects the outcomes in the context of crisis occurrence. Because of limited empirical evidence, our approach was guided by the following research questions:

*RQ3: Will a perceived health threat moderate the effects of perceived temporal distance from organizational threat on (a) organizational reputation and (b) crisis emotions?*

*RQ4: Will a perceived health threat moderate the indirect effects of perceived temporal distance from organizational threat on supportive behavioral intention via (a) organizational reputation and (b) crisis emotions?*

*RQ5: Will a perceived health threat moderate the direct effect of perceived temporal distance from organizational threat on supportive behavioral intention?*

## **Method**

### **Sample and Procedure**

To determine sample size, we conducted a power analysis by using G\*Power 3 (Faul, Erdfelder, Lang, & Buchner, 2007). The analysis, setting alpha at .05, power at .80, and effect size at .15, showed that this study needed a total of 103 participants. In the end, 239 respondents recruited via Amazon Mechanical Turk completed the online study (121 in proximal-future threat message and 118 in distant-future threat message conditions). The subjects were given US\$1 for completion of the questionnaire. Eligible participants were required to be 18 years old or older and reside in the United States. The mean age of the participants was 36.78 years ( $SD = 11.35$ ); 49.0% of participants were women and the majority race/ethnicity was White (77.0%).

To investigate the influences of the key construct, perceived temporal distance from organizational threat, we employed a one-factor, two-conditions design in which participants were exposed to a message with a proximal-future threat versus a distant-future threat. After an online consent form was completed, respondents were randomly assigned to one of the two message conditions. In both conditions, they read the message before completing a questionnaire that included perceived temporal distance, organizational

reputation, crisis emotions, supportive behavioral intention, perceived health threat, issue involvement, and a battery of demographic questions. The whole experimental procedure was conducted via Qualtrics.

### **Message Stimuli**

Different scenarios as the message stimuli were presented about a fictitious health crisis case in which people died from an unknown disease after receiving a flu vaccine. The stimuli stated that the flu vaccine was manufactured by a fictitious company, which was a vaccine producer. Given that crisis happens only when a certain level of threat is observed (Jin & Cameron, 2007), the future threat manipulation focused on when the threat actually became a public crisis. Threat was manipulated by emphasizing that the incidence and death rates were expected to rise in the next two weeks (in the proximal-future threat message) versus the next two years (in the distant-future threat message; e.g., "Outbreak will be a major problem affecting public health in the next two weeks [in the next two years]"; "The incidence rates of the unknown disease and the number of deaths are expected to rise in the next two weeks [in the next two years]").

### **Measures**

#### *Perceived Temporal Distance From Organizational Threat*

Perceived temporal distance from organizational threat was measured with an item asking when respondents perceived the major problem affecting public health inflicted by the crisis situation would occur (Park, Shin, & Huh, 2016). Responses were recorded on a 7-point scale of *in the near future* (1) to *in the distant future* (7), with a higher score indicating greater perceived temporal distance ( $M = 2.85$ ,  $SD = 1.72$ ).

#### *Organizational Reputation*

Five statements were used and participants were asked to respond based on the stimulus they were randomly assigned to read (Coombs & Holladay, 1996). Examples included "The organization is concerned with the well-being of its publics" and "The organization is basically dishonest" (reverse-coded). Responses to these items were measured using a 7-point scaling structure of *strongly disagree* (1) to *strongly agree* (7) and averaged to create a measure of organizational reputation. A higher score indicated a more positive organizational reputation (Cronbach's  $\alpha = .83$ ,  $M = 3.91$ ,  $SD = 1.28$ ).

#### *Crisis Emotions<sup>1</sup>*

The overall negativity of crisis emotions was measured by creating a composite of crisis emotions based on four primary negative crisis emotions identified by crisis scholars (Jin, Pang, & Cameron, 2012b) and adopted from the crisis emotions inventory developed by Jin et al. (2014). Participants were asked to

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<sup>1</sup> Crisis emotions can be captured as either discrete emotions (different types of crisis emotions; Jin et al., 2014) or composite affective responses by different valence and varied intensity (Jin & Cameron, 2007). In this study, *crisis emotions* refer to the intensity of overall negative emotions as a composite instead of different emotion types.



rate the likelihood that they would experience each of the four primary negative emotions toward what happened in the crisis situation: (a) angry, irritated, annoyed; (b) sad, downhearted, unhappy; (c) scared, fearful, afraid; and (d) nervous, anxious, worried. Responses ranging from *very unlikely* (1) to *very likely* (7) were averaged for the composite crisis emotions measure, with a higher score indicating greater overall negativity of the publics' crisis emotions (Cronbach's  $\alpha = .84$ ,  $M = 4.96$ ,  $SD = 1.39$ ).

#### *Supportive Behavioral Intention*

Supportive behavioral intention was assessed with five statements adapted from previous studies (Du, Bhattacharya, & Sen, 2010; Newburry, 2010), asking participants their intent to (a) purchase products from the organization, (b) say nice things about the organization, (c) recommend the organization's products to others, (d) invest in the organization, and (e) work at the organization. Responses were captured on a 7-point scale of *strongly disagree* (1) to *strongly agree* (7) and averaged, with a higher score indicating greater intention of supportive behavior (Cronbach's  $\alpha = .96$ ,  $M = 2.57$ ,  $SD = 1.58$ ).

#### *Perceived Health Threat*

Perceived health threat was captured by using six items adapted from existing measures (Brabin, Roberts, Farzaneh, & Kitchener, 2006; Witte, Meyer, & Martell, 2001). Three items measured susceptibility (e.g., "It is likely that I will get the unknown disease after receiving the flu vaccine produced by the organization") and the other three measured severity (e.g., "I believe that getting the unknown disease after receiving the flu vaccine produced by the organization is extremely harmful"). All responses from the items were averaged to make an index of perceived health threat, with a higher score indicating greater health threat (Cronbach's  $\alpha = .87$ ,  $M = 5.22$ ,  $SD = 1.19$ ).

#### *Covariates*

The present study controlled for age, gender, race/ethnicity, and involvement in the whole data analysis process. To measure issue involvement, we used three statements asking whether participants thought the threat was important, personally relevant, and involving to themselves (e.g., "The flu-vaccine-related threat is personally relevant to me") on a 7-point scale of *strongly disagree* (1) to *strongly agree* (7; Leippe & Elkin, 1987). The responses were averaged and higher scores indicated greater involvement (Cronbach's  $\alpha = .93$ ,  $M = 4.80$ ,  $SD = 1.58$ ).

## **Results**

### ***Manipulation Check***

To confirm that participants perceived different levels of temporal distance from organizational threat according to their assigned message condition (a proximal-future threat vs. a distant-future threat), we conducted an analysis of variance. Results indicated that perceived temporal distance was greater in the distant-future threat message condition ( $M = 3.16$ ,  $SD = 1.64$ ) compared with proximal-future threat

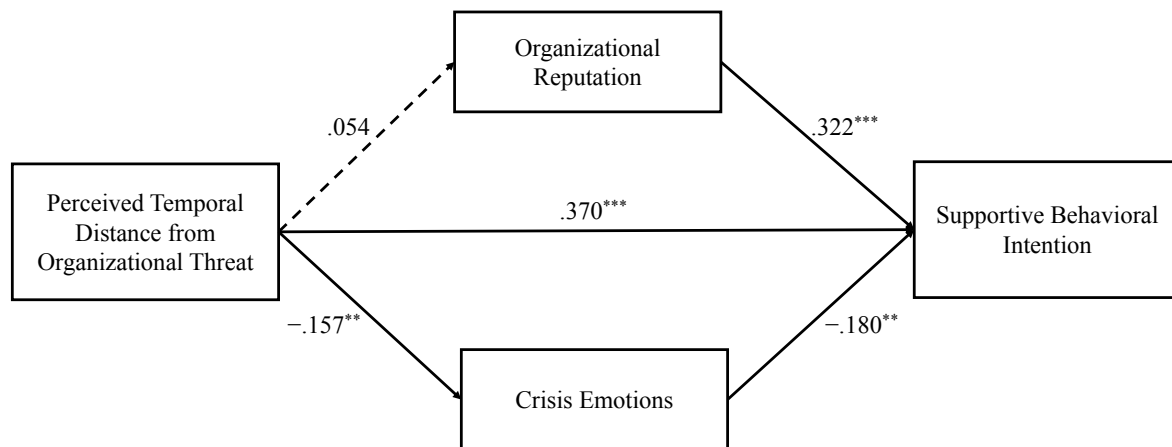
message condition ( $M = 2.54$ ,  $SD = 1.76$ ),  $F(1, 237) = 8.055$ ,  $p < .01$ , partial  $\eta^2 = .033$ . Thus, the effect of message exposure on perceived temporal distance from threat was confirmed.

### **Direct Effects of Perceived Temporal Distance**

For testing Research Question 1, we conducted multiple ordinal least squares regression analyses. The results indicated that perceived temporal distance did not significantly predict organizational reputation ( $b = .054$ ,  $SE = .050$ ,  $ns$ ). On the other hand, results confirmed the significant, negative relationship between perceived temporal distance and crisis emotions ( $b = -.157$ ,  $SE = .051$ ,  $p < .01$ ). Greater temporal distance was also associated with greater supportive behavioral intention ( $b = .416$ ,  $SE = .050$ ,  $p < .001$ ).

### **Indirect Effects of Perceived Temporal Distance**

To test Research Question 2, we conducted mediation analyses using Model 4 of the PROCESS macro for SPSS (Hayes, 2013). Results showed that organizational reputation did not serve as a significant mediator (point estimate = .017,  $SE = .016$ , 95% CI  $[-.015, .048]$ ). On the other hand, a significant, positive indirect effect via crisis emotions was shown in the relationship (point estimate = .028,  $SE = .014$ , 95% CI  $[.005, .059]$ ) as the bootstrapping confidence interval did not straddle zero (see Figure 1).

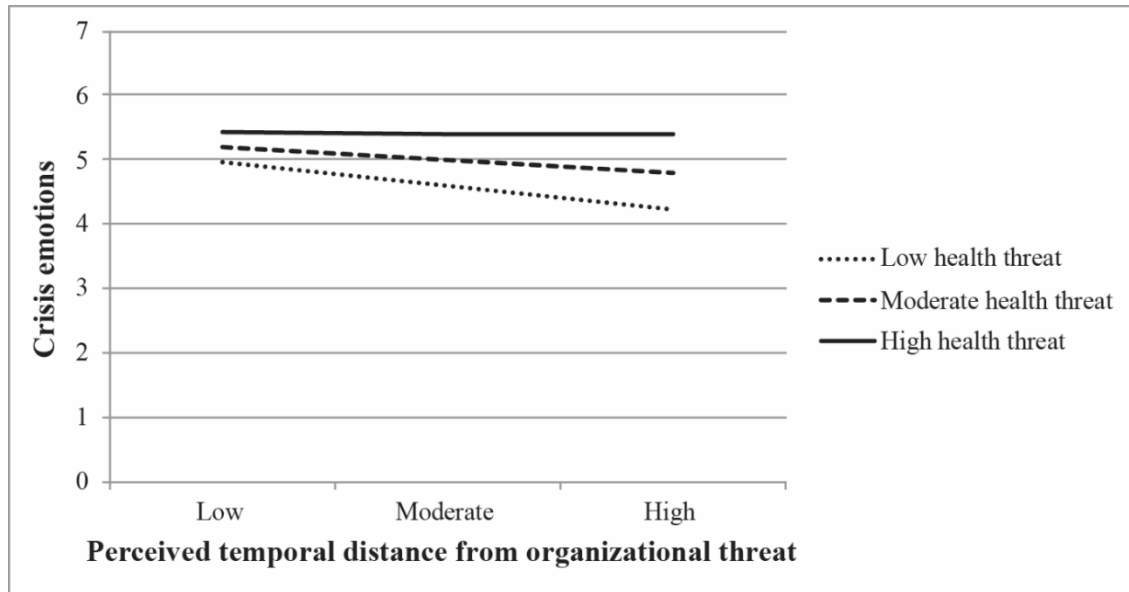


**Figure 1. Model depicting the mediating role of organizational reputation and crisis emotions on the relationship between perceived temporal distance from organizational threat and supportive behavioral intention. Coefficients are unstandardized regression coefficients. Dotted line denotes the insignificant relationship.**

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

**Conditional Indirect and Direct Effects of Perceived Temporal Distance**

For addressing Research Questions 3–5, we conducted moderated mediation analyses using Model 8 of the PROCESS macro for SPSS (Hayes, 2013). The interaction of perceived temporal distance from organizational threat and perceived health threat did not significantly predict organizational reputation ( $b = -.053, SE = .039, ns$ ). In contrast, the interaction on crisis emotions was significant ( $b = .087, SE = .040, p < .05$ ). With the increased level of perceived health threat, the direct effect of perceived temporal distance on crisis emotions became weaker (see Figure 2). Probing the conditional indirect effect through crisis emotions showed that the indirect effect was significant only at the 16<sup>th</sup> and 50<sup>th</sup> percentiles of perceived health threat based on the bootstrapping confidence interval that did not straddle zero (see Table 1).



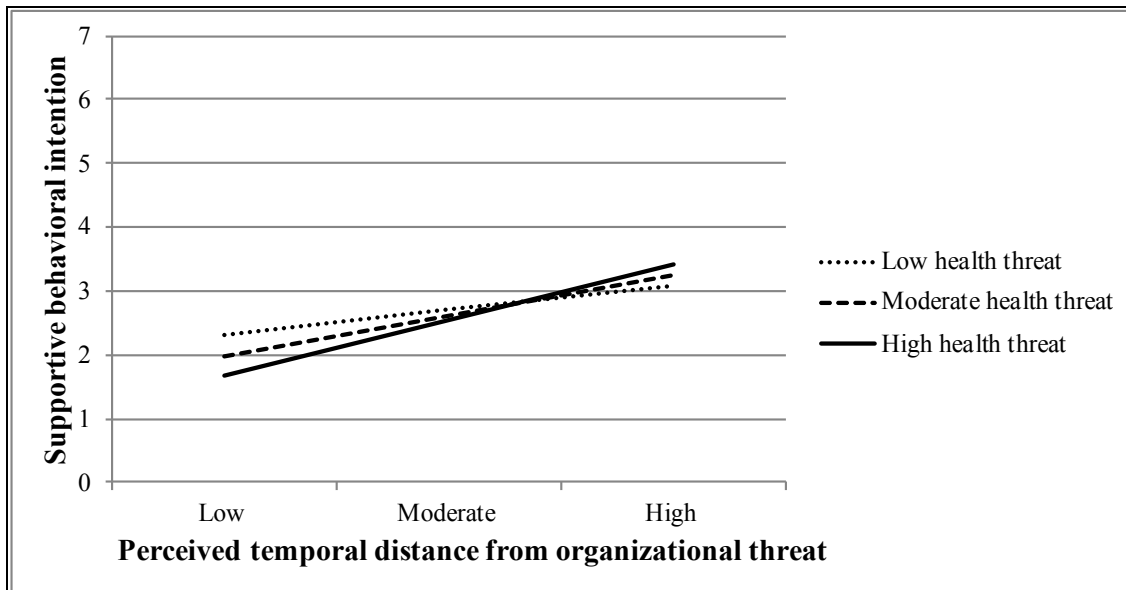
**Figure 2. The moderating effect of perceived health threat on the relationship between perceived temporal distance from organizational threat and crisis emotions.**

**Table 1. Conditional Indirect Effect of Perceived Temporal Distance From Organizational Threat on Supportive Behavioral Intention Through Crisis Emotions at Different Values of Perceived Health Threat.**

Level of moderating variable	Point estimate for		95% bias-corrected bootstrap CI for indirect effect	
	indirect effect	Bootstrap SE	Lower	Upper
Threat at 16 <sup>th</sup> percentile (4.037)	.040	.020	.007	.084
Threat at 50 <sup>th</sup> percentile (5.223)	.021	.012	.001	.046
Threat at 84 <sup>th</sup> percentile (6.410)	.002	.014	-.027	.032

Note. Bootstrap resampling = 5,000.

The interaction on supportive behavioral intention was significant ( $b = .122, SE = .038, p < .01$ ), which indicates that the direct effect of perceived temporal distance on the intention was moderated by perceived health threat. As the level of health threat was greater, the direct effect became stronger (see Figure 3). The conditional direct effect analysis showed that the effect was significant at levels of perceived health threat (i.e., 16<sup>th</sup>, 50<sup>th</sup>, and 84<sup>th</sup> percentiles) as the bootstrapping confidence interval did not straddle zero (see Table 2).



**Figure 3. The moderating effect of perceived health threat on the relationship between perceived temporal distance from organizational threat and supportive behavioral intention.**

**Table 2. Conditional Direct Effect of Perceived Temporal Distance From Organizational Threat on Supportive Behavioral Intention at Different Values of Perceived Health Threat.**

Level of moderating variable	Point estimate for direct effect	Bootstrap SE	95% bias-corrected bootstrap CI for direct effect	
			Lower	Upper
Threat at 16 <sup>th</sup> percentile (4.037)	.219	.064	.093	.344
Threat at 50 <sup>th</sup> percentile (5.223)	.364	.047	.272	.455
Threat at 84 <sup>th</sup> percentile (6.410)	.509	.065	.380	.637

Note. Bootstrap resampling = 5,000.

## Discussion

As the first empirical test of an extended concept of threat based on the perspective of publics, this study provides findings that advance public relations theory and evidence-based crisis communication research, shedding light on a new focus of crisis communication practice: how organizations can strategically take perceived temporal distance from organizational threat into consideration.

### ***The Role of Perceived Temporal Distance in Crisis Communication***

Perceived temporal distance, as a new threat dimension, appears to exert both direct and indirect effects on the affective (i.e., crisis emotions such as anger, sadness, fright, and anxiety) and behavioral (i.e., supportive behavioral intention toward an organization affected by crisis) responses of publics to a health crisis.

In terms of direct effects, perceived temporal distance from organizational threat predicted felt crisis emotions and intention to support the crisis-affected organization. First, the farther away the perceived threat impact is from the current situation of publics, the less likely they are to feel negative crisis emotions in response to the crisis situation. Regarding this interesting finding related to how the timeframe of a threat seems to affect the crisis responses, studies on publics' crisis emotions might offer some explanations (Jin, Pang, & Cameron, 2007, 2012b): Publics do not always assess a crisis situation or a threat rationally; instead, very often publics might draw their own conclusion about a crisis threat based on their feelings (mostly negative emotions in crisis situations) toward an organization and/or the situation so as to quickly cope with such negativity and threat-stimulated stress (Jin et al., 2012b). This study thus advances our understanding of publics' crisis emotions by pointing out that negative crisis emotions are stronger when the threat is coming sooner. Second, publics are likely to offer greater support to the organization when the impact of the threat is likely to occur in the distant future. This finding suggests that when publics believe that a given crisis situation is likely to impact the organization in the distant future, they will react less emotionally and, most important to organizations, be more willing to support the organization during and after the crisis. In other words, when publics perceive a threat in a crisis situation that has already affected the organization, but not yet themselves, publics tend to take more actions (e.g., supporting the organization) to prepare themselves and the organization for future trouble.

Mediation analyses and moderated mediation analyses further detailed the relationships among the cognitive, affective, and behavioral variables in crisis communication. First, crisis emotions each served as a statistically significant mediator: The fewer negative emotions they felt as a result of greater threat distance, the more likely they were to support the organization. Second, conditional indirect and direct effects of perceived temporal distance were evident: The indirect effect through crisis emotions and the direct effect of temporal distance on supportive behavioral intention were further moderated by perceived health threat.

Organizational reputation as one of the main organizational crisis outcome measures (e.g., Coombs, 2014) does not seem to be affected by temporal distance at all according to our findings. Because a crisis of a fictitious organization was presented to participants, this study attempted to specifically capture

their postcrisis exposure reputation only, in response to what they read about the crisis situation and the company itself as described, as often observed in reality when publics' initial reputation perception about an organization is formed because of a crisis incident exposure. We therefore assumed that study participants could shape perceptions about the company's reputation based on what they read about the crisis event and according to what they got to know about the company even in a situation for which they had no prior knowledge to form any precrisis reputation. Even so, according to Coombs (2014), organizational reputation is an evaluation publics make about a given organization over time. Such an evaluative perception is formed as publics evaluate the organization based on either their direct interactions (based on relationship history) or indirect interactions (based on mediated reports about an organization in relation to its publics; Coombs, 2014). In this sense, despite our initial attempts to focus on postcrisis exposure reputation, our study participants' inability to assess the fictitious organization's reputation without a crisis history could explain why reputation did not fit our proposed model.

### ***Theoretical and Practical Implications***

Shedding light on the perspective of publics and how they appraise organizational crises that might impact their own well-being, the findings contribute to public relations theory by extending existing threat dimensions in this context. This study is one of the first to address perceived temporal distance from organizational threat as a central variable in the cognitive appraisal approach to crisis communication.

To integrate the perspective of publics into the existing organization-centric threat appraisal model, we considered both crisis and risk communication perspectives in the context of a health-related crisis, which involved a vaccine manufacturer and the consumers of its product. We measured not only how organizations were affected by the crisis, but also the extent to which consumers felt they might be impacted. Therefore, the findings can be applied to health crisis situations in which organizations and publics are both affected, but the perceived temporal distance of organizations and publics is likely to differ. The predictive power of temporal distance, as a new threat dimension, clarifies how publics respond to a crisis situation and explains why and how such responses depend on organizational threat and risk perceptions (i.e., perceived health threat) triggered by the crisis.

With regard to taking a risk communication perspective in the context of health crisis, it is important to note that the moderating effect of perceived health threat seemed to differ by the outcome variables. The negative effects of perceived temporal distance on crisis emotions were weaker as the health threat level increased, whereas the positive effect on supportive behavioral intention was stronger. It should be noted that what each variable intended to measure was different. Crisis emotions tap publics' perspective toward a crisis, but supportive behavioral intention is about their willingness to support an organization in crisis. Even though publics may feel negative crisis emotions, they may be threatened by the crisis situation and be forced to support the organization. Publics are likely to understand that the organization is at the forefront of and capable of handling the crisis, which helps to protect their well-being. This paradox of health threat derives from the unique characteristics of the context in which an organization and publics are both influenced by a health crisis. Our study suggests that organizations need to communicate about health risks or crises with publics as such threats emerge rather than waiting until they are directly affecting publics, which echoes the literature on being transparent and accepting uncertainty in times of crisis (Coombs, 2014;

Jin et al., 2007, 2012b). In other words, an organization should proactively identify and communicate potential crisis threats long before they start to have a direct hit on the safety and well-being of the publics and their communities. By doing so, an organization can better protect itself as well when threats become more immediate or imminent.

The findings of this study also have practical implications for health communication professionals and crisis communication managers. The crisis response strategies of an organization should be aligned with the expectations and coping needs of its publics. Organizations must keep in mind that, in times of crisis, publics not only passively receive and respond to organizational crisis response actions, but they also engage in their own actions, including supportive behaviors. Crisis managers, therefore, should help organizations assess threat appraisals by publics, including perceived threat temporal distance, in order to recommend actions that will gain the most support from their publics. The actual threat posed to the organization and affected publics needs to be mindfully communicated according to duration, type, and level of the threat itself (Jin & Cameron, 2007; Jin et al., 2012a) as well as the perceived temporal distance as appraised by publics. As publics' threat perceptions may change over time, the organization might need to keep responding to the crisis as long as the primary publics still feel threatened, even if the reputational and/or operational threat to the organization appears to be over. When it comes to threat communication messaging, connecting our findings with existing crisis communication literature, it might be safe for the organization to promise that it will take action for as long as the threat continues, but ultimately, the organization would need to do whatever it takes, within the capacity of its resource (Jin & Cameron, 2007), to repair any damage residuals the crisis has caused, and then act on a business continuity plan to prevent a reoccurrence of the same problem (Coombs, 2014).

### ***Limitations and Future Directions***

In the current study, we proposed and tested an additional threat dimension (i.e., temporal distance), extending the threat appraisal model in crisis communication. There are several unanswered questions that warrant further assessments by future studies. First, to find out whether and how the temporal framing of an organizational crisis response should match the temporal distance perceived by its publics, future research needs to test different messages in the context of short-term versus long-term threats. On one hand, publics' perceived temporal distance might mandate organizational crisis responses and actions to include either short-term actions only or both short-term and long-term actions. On the other hand, how organizations tailor the wording of their crisis threat responding messages will depend on the threat timeline defined as temporal distance. To provide guiding principles regarding how organizations should respond when threats are temporally distant or temporally proximate, which can be used by public relations practitioners and crisis managers, new empirical evidence needs to be generated from future studies directly testing the causal effect of crisis threat temporal distance on crisis strategy making and publics' crisis responses.

Second, future studies should further assess the relationship between temporal distance and other dimensions (i.e., threat type, threat duration, and threat level) as perceived by both organizations and publics. In addition, how an organizational crisis is perceived as a future threat by publics that are not immediately affected by the crisis should be further assessed. This direction calls for extending crisis communication publics to include not only victims and families, but also those people whose well-being

might be at stake as time goes on. Effective and strategic crisis communication should include not only how an organization responds to crisis now, but also how it plans to take action in the proximal or distant future, anticipating and preparing for repercussions and building alliances with publics that might be willing to support the organization when future crises actually occur.

Third, our findings suggest the importance of further identifying and communicating about potential threats long before they are realized. Such threat-preventive measures could actually protect an organization when those threats become more immediate. Future research, especially in health crisis and risk communication contexts, should consider examining the inoculating effects of a threat being discussed as distant before it is proximal, incorporating additional conceptual pillars such as inoculation theory (Pfau, 1995) to deepen our understanding of individuals' attitudes toward and beliefs about health risk/crisis threats as well as their resistance toward organizational health messages as a function of perceived temporal distance of the health threat over time (e.g., Dillingham & Ivanov, 2017; Ivanov et al., 2016).

Last but not least, one of the most surprising findings indicates that organizational reputation (a) is not predicted by perceived temporal distance and (b) does not mediate the relationship between perceived temporal distance and supportive behavioral intention. Whether reputation might be directly related to perceived temporal distance of the threat caused by a crisis requires further investigation. Other factors, in addition to or in combination with perceived temporal distance, should be considered. The role of reputation, either as an outcome of threat appraisal or as a mediator of the threat appraisal effect on behavioral outcomes, should be further assessed to refine the threat appraisal model as a crisis and risk communication framework in public relations research and practice.

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