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Are All Crises Opportunities? A Comparison of How Corporate and Government Organizations Responded to the 2009 Flu Pandemic

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Through a quantitative content analysis, this study applies situational crisis communication theory (SCCT) to investigate how 13 corporate and government organizations responded to the first phase of the 2009 flu pandemic. The results indicate that government organizations emphasized providing instructing information to their primary publics such as guidelines about how to respond to the crisis. On the other hand, organizations representing corporate interests emphasized reputation management in their crisis responses, frequently adopting denial, diminish, and reinforce response strategies. In addition, both government and corporate organizations used social media more often than traditional media in responding to the crisis. Finally, the study expands SCCT's response options.

Beginning in mid-April 2009, a flu outbreak started in Mexico City and swept around the globe. In response, Mexico City closed 35,000 public venues, the United States closed more than 430 schools, Egypt slaughtered all its pigs, and China and Russia banned all pork imports from the United States and Mexico (Belsie, 2009; ''Egypt to pigs,'' 2009; ''Second U.S. death,'' 2009; Werner, 2009). In the United States, the flu outbreak at first received extensive media coverage, with 60 articles published in the *New York Times* alone from April 15 to April 30. However, weeks into the crisis, media and public attention subsided, despite the fact that the virus continued to rapidly spread both domestically and internationally.

This flu outbreak is worthy of study for several reasons, most significantly because it is a benchmark case of how corporate and government organizations used new technology (e.g., Twitter and Facebook) and traditional technology (e.g., newswires and Web sites) to respond to a rapidly evolving crisis. Although responses to previous crises certainly included new technology (e.g., Choi & Lin, 2009), the 2009 flu pandemic was unique because it necessitated responses from a wide variety of international organizations during a time when social media such as Twitter were becoming mainstream venues for crisis responses (Sutter, 2009). Thus, the pandemic was a huge opportunity for organizations to incorporate social media into their responses to potentially better educate and engage publics.

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Therefore, this study examines how 13 organizations responded to the 2009 flu crisis through traditional and social media outlets, building off of the limited research on (a) effectively employing social media to respond to crises (e.g., Coombs, 2008; Sweester & Metzgar, 2007) and (b) differences between corporate and government public relations practices (e.g., Liu & Horsley, 2007; Liu, Horsley, & Levenshus, 2010). In addition, the findings add to the growing literature on effective crisis response strategies (e.g., Coombs, 2007; Coombs & Holladay, 2005; Kim, Avery, & Lariscy, 2009). These findings are valuable for academics and crisis managers trying to navigate the rapidly changing media environment using concrete data rather than observations and hunches.

LITERATURE REVIEW

We now discuss the three research streams that serve as this study's foundation: (a) crisis communication[1] practices by sector, (b) new media and crisis communication by sector, and (c) crisis response options.

Crisis Communication Practices by Sector

During crises, public relations practitioners face unique challenges and opportunities depending upon the sector in which they work (Lee, 2009; Liu & Horsley, 2007; Liu et al., 2010). Most recently, through a survey of 976 corporate and government practitioners, researchers confirmed five significant differences in how public relations is practiced in the two sectors: evaluation of media coverage, federalism, legal frameworks, politics, media coverage frequency, and publics' information needs (Liu et al., 2010). All of these factors have implications for crisis managers.

First, the higher impact of legal frameworks (e.g., Freedom of Information Act) and politics in the government sector indicate that government crisis managers, compared to corporate crisis managers, are: (a) more restricted in the creativity of their message development; (b) have increased external influences like public interest groups; (c) have increased complexity in deciding what information to share and how; and (d) have higher need for public support for postcrisis programs and initiatives. Likewise, the higher impact of federalism in the public sector means that government crisis managers may face challenges coordinating their messages with various organizations responding to the same crisis. More intense media coverage and a higher demand for information from publics means that government crisis managers will face high levels of scrutiny before, during, and after crises occur.

Building from Liu and Horsley's (2007) government communication decision wheel, Lee (2009) identified eight factors that uniquely characterize government crises: (a) government authorities effectiveness in preventing and containing crises questioned; (b) can magnify existing problem of devaluing communication; (c) intensified media scrutiny; (d) publics apply collective memories of past crisis responses; (e) public often views government crises as thematic rather than episodic; (f) public interprets crisis response as how government prioritizes public good; and (g) crises can magnify bureaucratic nature of government organizations. Adding to this list,

[1]Crisis management represents a set of four overlapping phases: prevention, preparation, response, and revision (Coombs, 2007). Because our study primarily focuses on the crisis response, we used the term *crisis communication*.

researchers also noted that crises create political opportunities, including policy windows, for government organizations (e.g., Rosenthal & Kouzmin, 1997) and apologizing may have higher consequences in the corporate sector due to related financial repercussions associated with admitting guilt (e.g., Coombs, 2007). However, other scholars noted that some of these factors apply to all organizations experiencing crises, especially intense media scrutiny and collective memory of past crises (e.g., Coombs, 2007).

New Media and Crisis Communication by Sector

Only one found study compared how corporate and government organizations use new media to respond to crises (Perry, Taylor, & Doerfel, 2003). In this seminal study on Internet-based communication, the researchers concluded that political and security considerations may affect whether government organizations incorporate new technology into their crisis responses. In addition, government organizations with missions to serve the public (e.g., Centers for Disease Control; CDC) were more likely to implement new technology than government organizations that view crises as potential political embarrassments (e.g., the White House).

Research just focusing on the government sector raises questions about the US government's ability to effectively integrate new media into crisis management. For example, the National Incident Management System (NIMS), which outlines how government agencies respond to crises, emphasizes formally organized command and control. This structure is not compatible with the informal, rapid, and organic structure of social media (Crowe, 2010). Likewise, the Congressional Management Foundation (2008) called on Congress to improve its online communication with citizens, indicating that many Members respond to e-mail messages with postal mail and almost half had substandard or failing Web sites. Research just focusing on the corporate sector raises similar red flags. For example, only 16% of Fortune 500 companies have a public facing blog (Barnes & Mattson, 2008).

More generally, examining new media and crises across all sectors, focuses on how the Internet radically changes how crisis managers disseminate information. New technology limits organizations' ability to control the information flow, instead facilitating instantaneous information among a variety of sources (González-Herrero & Smith, 2008; Vielhaber & Waltman, 2008). New technology also increases community participation both online and offline in the aftermath of crises (Dutta-Bergman, 2006; Procopio & Propcopio, 2007; Rainie, 2005), making individuals much more responsible for their level and quality of crisis knowledge (Bucher, 2002). For example, after crises individuals converge online to share information and collectively solve problems, rather than waiting for organizations to solve problems (Sutton, 2009).

In terms of the impact of specific new technologies on crisis management, the majority of research thus far has examined Web sites (e.g., Perry et al., 2003; Taylor & Kent, 2006) and blogs (e.g., Bates & Callison, 2008; Sweester & Metzgar, 2007). Web sites are ideal for generating timely communication (Taylor & Perry, 2005) and interactive conversations (DiNardo, 2002; Kent & Taylor, 1998). In particular, organizations can use their Web sites to tell their side of the story during a crisis and provide relevant information for different stakeholder groups (Taylor & Kent, 2006). Indeed, a study found that publics participating in online bulletin boards attributed crisis responsibility differently than did newspaper journalists (Choi & Lin, 2009).

Blogs are especially ideal for building relationships with publics during crises (Bates & Callison, 2008; Hanson, 2006) because blogs can reduce complaints; improve reputation and services; as well as increase sales, loyalty, and customer satisfaction (KDPaine & Partners, 2008; Rubel, 2005). Blogs also enable top management to directly communicate their organization's positions and actions with affected publics (Marken, 2005). Interestingly, publics who read blogs (both personal and organizational) perceive a lower level of crisis for an organization than those not exposed to blogs (Sweester & Metzgar, 2007). Publics also equally rate the credibility of third-person blogs and blogs sponsored by organizations experiencing crises (Bates & Callison, 2008). Finally, organizations can effectively gain emotional support from publics through communicating emotion-laden messages through blogs during crises (Stephens & Malone, 2009).

Crisis Response Options

Situational Crisis Communication Theory (SCCT) provides a comprehensive framework for effectively responding to crises. Before selecting a response option, SCCT states that organizations should prioritize protecting publics from harm through instructing and adjusting information (Coombs, 2007). Instructing information notifies publics what actions they should take to protect themselves from physical threats generated by crises. Adjusting information helps publics cope with any psychological threats generated by crises and includes corrective action (Coombs, 2007). To reduce psychological stress, organizations inform publics about corrective actions, which are how organizations plan to solve or prevent problems that cause crises. Through disseminating adjusting information, organizations express concern for those affected by the crisis. Therefore, instructing and adjusting information are base responses required for all crises and are combined with the other four response options: deny, diminish, rebuild, and reinforce. To identify how corporate and government organizations employed these base responses (a) to their overall crisis response to the flu crisis and (b) via traditional and social media we ask:

RQ1: Is there a difference in how corporate and government organizations disseminated instructing information in response to the 2009 H1N1 flu crisis?
RQ2: Is there a difference in how corporate and government organizations disseminated instructing information through social and traditional media in response to the 2009 H1N1 flu crisis?
RQ3: Is there a difference in how corporate and government organizations disseminated adjusting information in response to the 2009 H1N1 flu crisis?
RQ4: Is there a difference in how corporate and government organizations disseminated adjusting information through social and traditional media in response to the 2009 H1N1 flu crisis?

SCCT's deny response option includes three strategies: attack the accuser, deny, and scapegoat (Heath & Coombs, 2006). Organizations attack the accuser to confront the person or group that claims a crisis exists. Denial occurs when organizations state that a crisis does not exist. Scapegoating is used when organizations state that someone else is responsible for the crisis. Liu (2010) added ignoring as a fourth denial option. Organizations use ignoring to implicitly state that a crisis does not exist by disregarding the crisis.

SCCT's diminish response option includes two strategies: excuse and justify (Heath & Coombs, 2006). Organizations excuse by providing an explanation for the crisis that limits the organizations' responsibility. Justification is when organizations explain why the crisis occurred.

Liu (2010) added separation as a third diminish option; other scholars (e.g., Benoit & Brinson 1999; Hearit, 2005) also have proposed separation as an image repair strategy. Organizations use separation to disconnect themselves from the responsible parties within their organization.

SCCT's rebuild response option includes two strategies: compensation and apology. Compensation occurs when organizations financially support crisis victims. Apology is used when organizations express regret for the crisis. Liu (2010) added transcendence, which is when organizations shift the focus away from the immediate crisis to a larger concern or issue (Benoit, 1997).

Finally, SCCT's reinforce response is supplemental and must be used with at least one of the other response options (Heath & Coombs, 2006). This option includes three strategies: bolstering, ingratiation, and victimage (Coombs, 2007; Heath & Coombs, 2006). Bolstering occurs when organizations highlight past good deeds. Ingratiation is used when organizations praise stakeholders. Victimage occurs when organizations state they are a victim of the crisis. Liu (2010) added endorsement, which organizations use to identify third-party support. To identify how corporate and government organizations employed the various SCCT response strategies to manage their (a) overall response to the flu crisis and (b) their traditional and social media responses we ask:

RQ5: Is there a difference in how corporate and government organizations employed the SCCT strategies in response to the 2009 H1N1 flu crisis?

RQ6: Is there a difference in how corporate and government organizations employed SCCT strategies through social and traditional media in response to the 2009 H1N1 flu crisis?

METHOD

Through a quantitative content analysis, this study examines both traditional and social media response documents distributed by 13 organizations affected by the H1N1 flu crisis. This purposeful case selection approach provides a variety of information-rich cases with the necessary characteristics to answer our research questions, an ideal quantitative sampling approach when there are a large number of cases for the phenomena under investigation (Petersen, 2008). This approach, however, limits the findings' generalizability.

For government organizations, we purposefully selected the CDC, the Department of Health and Human Services (HHS), and the World Health Organization (WHO) because they are leading government organizations responsible for responding to large-scale health crises. For corporate organizations, we purposefully selected industry types that likely would respond to a large-scale health crisis: the airline, pharmaceutical, pork production, and food services-related industries. In addition, we selected the National Pork Producers Council (NPPC) and National Pork Board (NPB) to represent corporate responses because they are the leading industry voices for US pork producers, who were especially negatively impacted by the H1N1 pandemic. We selected two corporations from each industry type based on Fortune 500 company industry index:[2] (a) American Airlines (AA) and Continental Airlines for the airline industry because they

[2]Fortune 500 2009 (2009). Retrieved April 30, 2009, from http://money.cnn.com/magazines/fortune/fortune500/2009/full_list/index.html.

had the most frequent direct flights from the United States to Mexico, where the crisis started; (b) Roche and GlaxoSmithKline (GSK) because they are the leading producers of flu antiviral medications and vaccinations; (c) Smithfield and Tyson Foods because they are the largest pork producers in the United States; and (d) McDonald's and Yum Brands because they are the largest food service providers in the United States.

Sampling Procedure

Both traditional and social media response documents were retrieved from the organizations' official Web sites, PR Newswire, Twitter, and Facebook sites. For traditional media, fact sheets, media advisories, press releases, press conference briefings, reports, statements, and updates were retrieved. For social media, Facebook posts, Twitter posts, organizations' documents linked to Facebook posts and Twitter posts (e.g., YouTube video, Web site, press release linked to a tweet) were included. We selected Twitter and Facebook because they are the two primary social media outlets organizations use to respond to crises (Sutter, 2009). A total of 2,240 media materials released by the organizations from April 23, 2009 to July 31, 2009 was collected. We started data collection on April 23, 2009 because this was when the crisis began in the United States (Belsie, 2009) and ended data collection on July 31, 2009 because this is when US government experts said the H1N1 outbreak was dying down (Sternberg, 2009).

Variables Measured

Because there is no previous study applying SCCT to a pandemic crisis, this study operationalized instructing information based on SCCT's theoretical constructs (Coombs, 2007). Instructing information for the H1N1 flu crisis included three variables: (a) basic information related to H1N1, (b) addressing publics' primary needs, and (c) organization's preparation related information. Fifteen items were used to measure these three variables (see Table 1). Adjusting information, which helps stakeholders cope with the crisis psychologically (Coombs, 2007), was operationalized as information about (a) corrective action that ''reduces psychological stress by reassuring stakeholders that their safety is a priority'' (Coombs, 2007, p. 135) and (b) expressing sympathy for the victims (Coombs, 2007).

Finally, we coded SCCT's crisis response strategies (Coombs, 2007; Liu, 2010).

Coding Procedure & Data Analysis

A coding protocol was designed to capture the variables under investigation with definitions and examples of each variable. All indicators were coded based on the dichotomy of the message's presence (i.e., 1 or 0) and the frequency of each indicator to minimize possible subjective decisions of coders. For frequency count, one paragraph was designated as the unit of analysis for all indicators. Two coders independently coded the organizations' responses. Initially we coded 0.4% ($n = 11$) of organizations' responses for a first-wave reliability check. The first-wave reliability estimates were satisfactory and ranged from .71 to .80 using SPSS

TABLE 1
Instructing Information Dissemination by Organizations

Instructing Info	*CDC*	*HHS*	*WHO*	*AA*	*Continental*	*Roche*	*GSK*	*Smithfield*	*Tyson*	*NPB*	*NPPC*	*Total*
1. Basic Info												
Info about the crisis	169	26	295	10	2	44	14	7	1	40	61	669
(what happened)	(82%)	(89.7%)	(93.4%)	(100%)	(100%)	(97.8%)	(93.3%)	(100%)	(50%)	(90.9%)	(88.4%)	(89.8%)
When the crisis began	24	0	16	0	0	1	0	0	0	0	1	42
	(11.7%)	(0%)	(5.1%)	(0%)	(0%)	(2.2%)	(0%)	(0%)	(0%)	(0%)	(1.4%)	(5.6%)
Symptoms	16	1	13	0	0	1	2	0	0	1	0	34
	(7.8%)	(3.4%)	(4.1%)	(0%)	(0%)	(2.2%)	(13.3%)	(0%)	(0%)	(2.3%)	(0%)	(4.6%)
2. Address Publics' Primary Needs												
How the crisis affects	13	1	8	0	0	0	2	0	0	0	1	25
publics' daily routines	(6.3%)	(3.4%)	(2.5%)	(0%)	(0%)	(0%)	(13.3%)	(0%)	(0%)	(0%)	(1.4%)	(3.4%)
Business continuity:	17	4	9	0	0	3	4	4	0	0	5	46
Current status	(8.3%)	(13.8%)	(2.8%)	(0%)	(0%)	(6.7%)	(26.7%)	(57.1%)	(0%)	(0%)	(7.2%)	(6.2%)
How to be infected	38	3	10	0	0	0	1	4	0	3	9	68
	(18.4%)	(10.3%)	(3.2%)	(0%)	(0%)	(0%)	(6.7%)	(57.1%)	(0%)	(6.8%)	(13%)	(9.1%)
What to do to protect physically	50	3	30	0	0	1	2	0	0	2	0	88
	(24.3%)	(10.3%)	(9.5%)	(0%)	(0%)	(2.2%)	(13.3%)	(0%)	(0%)	(4.5%)	(0%)	(11.8%)
Guidelines to publics	84	7	71	0	0	3	2	2	0	12	14	195
	(40.8%)	(24.1%)	(22.5%)	(0%)	(0%)	(6.7%)	(13.3%)	(28.6%)	(0%)	(27.3%)	(20.3%)	(26.2%)
Travel guidelines	9	1	83	1	0	0	1	0	0	0	0	95
	(4.4%)	(3.4%)	(26.3%)	(10%)	(0%)	(0%)	(6.7%)	(0%)	(0%)	(0%)	(0%)	(12.8%)
3. Org's Preparation Related												
Business continuity for	17	0	19	0	0	3	1	0	0	0	0	40
future plan	(8.3%)	(0%)	(6%)	(0%)	(0%)	(6.7%)	(6.7%)	(0%)	(0%)	(0%)	(0%)	(5.4%)
How to notify publics	30	4	26	0	0	1	1	1	0	0	2	65
	(14.6%)	(13.8%)	(8.2%)	(0%)	(0%)	(2.2%)	(6.7%)	(14.3%)	(0%)	(0%)	(2.9%)	(8.7%)
Organization's past prep	3	6	11	0	0	3	2	1	0	0	2	28
for Swine Flu	(1.5%)	(20.7%)	(3.5%)	(0%)	(0%)	(6.7%)	(13.3%)	(14.3%)	(0%)	(0%)	(2.9%)	(3.8%)
Organization's future	24	12	24	0	0	3	5	1	1	1	2	73
preparation	(11.7%)	(41.4%)	(7.6%)	(0%)	(0%)	(6.7%)	(33.3%)	(14.3%)	(50%)	(2.3%)	(2.9%)	(9.8%)
Vaccine preparation.	32	17	28	0	0	6	11	0	0	0	0	94
	(15.5%)	(58.6%)	(8.9%)	(0%)	(0%)	(13.3%)	(73.3%)	(0%)	(0%)	(0%)	(0%)	(12.6%)
Crisis communication	1	1	1	0	0	0	0	0	0	0	0	3
control center	(.5%)	(3.4%)	(.3%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(.4%)
Total	206	29	316	10	2	45	15	7	2	44	69	745
	(100%)	(100%)	(100%)	(100%)	(100%)	(100%)	(100%)	(100%)	(100%)	(100%)	(100%)	(100%)

Note. CDC = Centers for Disease Control and Prevention. HHS = Department of Health and Human Services. WHO = World Health Organization. AA = American Airlines. GSK = GlaxoSmithKline. NPB = National Pork Board. NPPC = National Pork Producers Council.

macros for Kripendorff's alpha (Hayes & Krippendorff, 2007), which is appropriate for measurement level variables from nominal to ratio and accounts for chance agreement, making it a more conservative estimate of reliability (Lombard, Snyder-Duch, & Bracken, 2002). Next, 451 (20%) of the sample were independently coded. In this second round of intercoder reliability checks, Krippendorff's alpha reliabilities improved and ranged from .77 to 1.0. Given that methodologists agree that reliability coefficients of .70 or greater are generally acceptable, intercoder reliability was deemed strong and acceptable, and the remainder of the sample was coded.

Multivariate analysis of variance (MANOVA), analysis of variance (ANOVA), *t*-test, and chi-square were used for investigating research questions.

RESULTS

Of a total of 2,240 organizations' response materials from April 23, 2009 to July 31, 2009, about 33% ($n = 745$) of the responses were related to the H1N1 crisis. Among these H1N1 responses ($n = 745$), only 11 of the 13 selected organizations' responses were included because two of the organizations, McDonald's and Yum Brands, did not release any H1N1 crisis responses during the period. To conduct background analyses and answer our research questions, we first grouped the organizations into two categories: those representing governments' interests (CDC, HHS, and WHO) and those representing corporate interests (AA, Continental Airlines, Roche, GSK, Smithfield, Tyson, McDonald's, Yum Brands, NPB, and NPPC). There were significant differences between corporations and government organizations in responding to the 2009 H1N1 crisis; $\chi^2(1, 2237) = 443.3$, $p = .000$, $r = .45$. About 59% ($n = 562$) of the total government releases ($n = 9$ 60) were H1N1 crisis responses, whereas only about 16% ($n = 203$) of the corporations' total responses ($n = 1{,}278$) were H1N1flu related. Also, out of all the organizations included in the study, WHO ($n = 316$, 42%) was the most active in terms of frequency of information released in response to the flu crisis, followed by CDC ($n = 206$, 28%), NPPC ($n = 69$, 9%), Roche ($n = 45$, 6%), NPB ($n = 44$, 6%), HHS ($n = 29$, 4%), and GSK ($n = 15$, 2%) (see Table 1 for other organizations).

Instructing Information

To answer whether there is a difference in how corporate and government organizations disseminated instructing information in response to the 2009 flu crisis (RQ1), we created a composite variable (see Table 1). The results revealed that there were significant differences in instructing information released by organizations representing government and corporate interests; $t(1, 744) = 4.23$, $p = .000$, Cohen's $d = .44$; indicating those representing the government ($M = 2.2$, $SD = 2.0$) were more active in releasing instructing information than those representing corporations ($M = 1.5$, $SD = 1.2$). In addition, when separating out the two organizations that are not corporations, but represent corporate interests (NPPC and NPC) from the corporations, there were also significant differences in instructing information disseminated among the organizations included; $F(2,743) = 10.57$, $p = .000$, $\eta^2 = .03$. See Table 1 for each indicator presence by organization.

When examining the differences in instructing information released in more detail, there were significant differences between organizations representing corporate and government interests in

the cases of (a) addressing publics' primary needs; $t(1, 744) = 4.14$, $p = .000$, Cohen's $d = .40$; and (b) preparation information; $t(1, 744) = 3.09$, $p = .002$, Cohen's $d = .35$. Government organizations were significantly more active than organizations representing corporate interests in addressing publics' primary needs (e.g., guidelines about how to not become infected) and disseminating information about how the organization was preparing for the crisis (e.g., support for developing a vaccine). However, there were no significant differences in the case of delivering basic information about the crisis (e.g., what happened); $t(1, 744) = 1.72$, $p = .062$. When separating NPPC and NPB from the other organizations representing corporate interests, there were significant differences in all three variables for instructing information, indicating NPPC and NPB were less active in instructing information for the crisis than government and corporations; Wilks' Λ $F(2,743) = 6.33$, $p = .000$, $\eta^2 = .03$.

The results to answer RQ2 (any differences in media usage) revealed that there were significant differences in relation to instructing information between traditional and social media for instructing information; Wilks' Λ $F(1, 744) = 36.9$, $p = .000$, $\eta^2 = .10$. The total number of instructing information disseminated is higher for social media ($n = 534$, 72%) than for traditional media ($n = 211$, 28%). However, mean scores for instructing information were higher in the case of traditional media ($M = 3.0$, $SD = 2.2$ for message presence; $M = 12.2$, $SD = 10.8$ for frequency) than social media ($M = 1.56$, $SD = 1.6$ for presence; $M = 6.5$, $SD = 11.1$ for frequency). Percentage of instructing information for each indicator for both traditional and social media is presented in Table 2.

TABLE 2
Instructing Information Via Traditional Media Versus Social Media

Instructing Info	*Traditional Media*		*Social Media*	
1. Basic info	$n = 1^*$	$n > 2^{**}$	$n = 1$	$n > 2$
Info about the crisis (what happened)	194 (92%)	183 (87%)	475 (89%)	223 (42%)
When the crisis began	5 (2.4%)	1 (.5%)	37 (6.9%)	1 (.2%)
Symptoms	20 (9.5%)	2 (1.0%)	14 (2.6%)	3 (.6%)
2. Address publics' primary needs				
How the crisis affects publics' daily routines	17 (8.1%)	2 (1.0%)	8 (1.5%)	3 (.6%)
Business continuity: current status	27 (13%)	15 (7.1%)	19 (3.6%)	7 (1.4%)
How to be infected	22 (11%)	6 (2.8%)	46 (8.6%)	29 (5.4%)
What to do to protect physically	38 (18%)	11 (5.2%)	50 (9.4%)	28 (5.3%)
Guidelines to publics	81 (38.4%)	41 (19.4%)	114 (21.3%)	51 (9.5%)
Travel guidelines	44 (21%)	13 (6.1%)	51 (9.6%)	31 (5.8%)
3. Organization's preparation related				
Business continuity for future plan	23 (11%)	3 (10.4%)	17 (3.2%)	0 (0%)
How to notify publics	29 (14%)	3 (10.4%)	36 (6.7%)	2 (0.4%)
Org's past prep for H1N1 Flu	18 (8.5%)	4 (2.0%)	10 (1.9%)	3 (0.6%)
Org's future prep.	51 (24%)	12 (5.6%)	22 (4.1%)	4 (0.8%)
Vaccine prep.	62 (29.4%)	25 (12%)	32 (6.0%)	11 (2.1%)
Crisis comm control center	3 (1.4%)	0 (0%)	0 (0%)	0 (0%)
Total	211 (100%)		534 (100%)	

Note. *Message presence. **Message frequency higher than 2.

Adjusting Information

To answer RQ3, differences in terms of providing adjusting information (corrective action and expressing sympathy for the victims) were examined. The results revealed that there were no significant differences between organizations representing government and corporate interests in terms of providing adjusting information to their publics; Wilks'Λ $F(1, 744) = 2.95$, $p = .053$, $\eta^2 = .049$. However, when further examining the results, there were significant differences in terms of expressing sympathy for the victims; Wilks'Λ $F(1, 744) = 5.83$, $p = 016$, $\eta^2 = .08$. Government organizations ($n = 16$) tended to express sympathy for those affected by the crisis more often than organizations representing corporate interests ($n = 0$). In terms of providing corrective action, about 14% ($n = 101$) of the organizations' total crisis responses addressed corrective actions taken to prevent a similar crisis. Even though government organizations disseminated corrective action information more often ($n = 75$, 24%) than organizations representing corporate interests ($n = 26$, 19.3%), the differences were not statistically significant; Wilks'Λ $F(1, 744) = .04$, $p = .91$.

Corrective action messages disseminated by government organizations were mostly related to vaccine development and preparation. In addition, pork producers (e.g., Smithfield) and their representative organizations (NPPC/NPB) frequently emphasized actions to vaccinate pigs and workers against influenza viruses for their corrective actions (e.g., NPPC, 2009, April 26).

There were also significant differences in adjusting information disseminated via traditional and social media (RQ4); Wilks'Λ $F(1, 744) = 35.\ 4$, $p = .000$, $\eta^2 = .16$. First, there were significant differences in including corrective actions via traditional and social media; Wilks'Λ $F(1, 744) = 44.5$, $p = .000$, $\eta^2 = .11$. Mean scores for the frequency of including corrective action were significantly higher in traditional media ($M = .66$, $SD = 1.2$) than in social media ($M = .2$, $SD = 1.3$). Second, expressing sympathy for the victims was shown only in the case of traditional media; $F(1, 744) = 34.8$, $p = .000$. $\eta^2 = .05$; indicating differences in terms of media channel used.

Crisis Response Strategy Selection

With regard to RQ5, our results suggest that there were significant differences between organizations representing corporate and government interests in employing all four crisis response categories: denial, Wilks'Λ $F(1, 744) = 66.9$, $p = .000$, $\eta^2 = .15$; diminish, Wilks'Λ $F(1, 744) = 203.4$, $p = .000$, $\eta^2 = .37$; rebuilding, Wilks'Λ $F(1, 744) = 3.8$, $p = .010$, $\eta^2 = .01$; and reinforce, Wilks'Λ $F(1, 744) = 84.2$, $p = .000$, $\eta^2 = .19$. Organizations representing corporate interests revealed higher mean scores of frequency for adopting denial ($M = .26$ $SD = .53$), diminish ($M = .46$, $SD = .49$), rebuilding ($M = .04$, $SD = .19$), and reinforce options ($M = .66$, $SD = .77$) than government organizations ($M = 0$ for denial; $M = .009$, $SD = .09$ for diminish; $M = .01$, $SD = .11$ for rebuilding; $M = .11$, $SD = .38$ for reinforce response options).

In addition, when examining the differences after separating NPPC/NPB from corporations, there were also significant differences among the three organization types in all the crisis response options, Wilks'Λ $F(2, 743) = 108.\ 3$, $p = .000$, $\eta^2 = .37$; denial, $F(2, 743) = 108.9$, $p = .000$, $\eta^2 = .23$; diminish, $F(2, 743) = 497.1$, $p = .000$, $\eta^2 = .57$; rebuilding, $F(2, 743) = 9.1$, $p = .000$, $\eta^2 = .024$); and reinforce, $F(2, 743) = 131.8$, $p = .000$, $\eta^2 = .26$). NPPC and NPB were more active in employing all crisis strategy options than government or other corporations. Crisis response strategies adopted by each organization are presented in Table 3.

TABLE 3
Crisis Response Strategies Adopted by Organizations

Adjusting Info	*CDC*	*HHS*	*WHO*	*AA*	*Continental*	*Roche*	*GSK*	*Smithfield*	*Tyson*	*NPB*	*NPPC*	*Total*
Denial options												
Denial	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	5 (71.4%)	0 (0%)	4 (9.1%)	17 (24.6%)	26 (3.5%)
Attack-the-accuser	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	1 (14.3%)	0 (0%)	2 (4.5%)	13 (18.8%)	16 (2.1%)
Ignore	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	2 (2.9%)	2 (.3%)
Scapegoating	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	1 (2.3%)	6 (8.7%)	7 (.9%)
Diminish options												
Excuse	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)
Justification	1 (.5%)	1 (3.4%)	1 (.3%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	3 (.4%)
Separate	1 (.5%)	0 (0%)	1 (.3%)	0 (0%)	0 (0%)	0 (0%)	1 (6.7%)	6 (85.7%)	1 (50%)	29 (65.9%)	52 (75.4%)	91 (12.2%)
Rebuilding options												
Apology	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)
Compensation	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	2 (2.9%)	2 (.3%)
Transcendence	1 (.5%)	0 (0%)	6 (1.9%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	1 (2.3%)	5 (7.2%)	13 (1.7%)
Reinforce options												
Bolstering	2 (1.0%)	8 (27.6%)	12 (3.8%)	0 (0%)	0 (0%)	3 (6.7%)	4 (26.7%)	2 (28.6%)	0 (0%)	0 (0%)	1 (1.4%)	32 (4.3%)
Endorsement	2 (1.0%)	1 (3.4%)	3 (0.9%)	0 (0%)	0 (0%)	2 (4.4%)	2 (13.3%)	4 (57.1%)	0 (0%)	36 (81.8%)	36 (52.2%)	86 (11.5%)
Ingratiation	16 (7.8%)	2 (6.9%)	16 (5.1%)	0 (0%)	0 (0%)	1 (2.2%)	1 (6.7%)	2 (28.6%)	0 (0%)	2 (4.5%)	4 (5.8%)	44 (5.9%)
Victimage	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	2 (28.6%)	0 (0%)	7 (15.9%)	20 (29%)	29 (3.9%)
Other strategy used												
Enhancing	9 (4.4%)	4 (13.8%)	6 (1.9%)	0 (0%)	0 (0%)	3 (6.7%)	2 (13.3%)	0 (0%)	0 (0%)	0 (0%)	2 (2.9%)	26 (3.5%)
Transferring	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	4 (26%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	4 (.5%)
Total	206 (100%)	29 (100%)	316 (100%)	10 (100%)	2 (100%)	45 (100%)	15 (100%)	7 (100%)	2 (100%)	44 (100%)	69 (100%)	745 (100%)

Note. CDC = Centers for Disease Control and Prevention. HHS = Department of Health and Human Services. WHO = World Health Organization. AA = American Airlines. GSK = GlaxoSmithKline. NPB = National Pork Board. NPPC = National Pork Producers Council.

Organizations representing corporate interests were much more active in adopting reputation management strategies than government organizations (i.e., to state that H1N1 was not present in US pigs). Pork producers and NPPC and NPB ($n = 26$) used attack-the-accuser ($n = 16$) and scapegoating ($n = 7$) strategies, whereas no such strategies were adopted by government organizations. Interestingly, when denial strategy was used ($n = 26$), about 96% ($n = 25$) of these responses also used a separation strategy from the diminish response options, and 85% ($n = 22$) also used an endorsement strategy from the reinforce response options.

Among the diminish options, the separation strategy ($n = 91$) was most often adopted. Pork producers and their representatives (NPPC/NPB) accounted for about 97% of the separation strategy instances ($n = 88$; e.g., people cannot get the H1N1 from eating pork or pork products). Among the reinforce response strategies, victimage ($n = 29$) and endorsement strategies ($n = 86$) were most often employed by pork producers and their representatives; government organization and pharmaceutical corporations were more likely to employ bolstering and ingratiation strategies (i.e., to demonstrate how they responded to the crisis).

The victimage strategy ($n = 29$) was only employed by pork producers and their representatives. About 88% ($n = 76$) of the instances of the endorsement strategy were used by pork producers and their representatives to note that the government confirmed pork is safe to eat. A bolstering strategy ($n = 32$) from the reinforce response options was often used alone, and when used in combination, it was often with the ingratiation strategy ($n = 11$, 34%) or with endorsement ($n = 6$, 19%). In addition, when examining the frequency of the terms *swine flu* and *H1N1 flu* from April to July, the frequency of swine flu mention in all the organizations' crisis documents decreased significantly over time ($F(3, 742) = 24.4$, $p = .000$, $\eta^2 = .09$), whereas the usage of *H1N1 flu* term significantly increased ($F(3, 742) = 8.1$, $p = .000$, $\eta^2 = .03$).

As to the differences between how traditional and social media employed SCCT crisis response strategies (RQ6), there were significant mean differences between organizations' denial options, $F(1, 744) = 4.31$ $p = .03$, $\eta^2 = .06$; and reinforce response options, $F(1, 744) = 17.2$, $p = .000$, $\eta^2 = .03$; but no such differences in the case of diminish, $F(1, 744) = .009$, $p = .927$; and rebuilding response options, $F(1, 744) = 1.03$, $p = .311$. Mean scores for denial response options adopted were higher in traditional media ($M = .10$, $SD = .40$) than in social media ($M = .05$, $SD = .24$). Mean scores for reinforce response options adopted were also higher in traditional media ($M = .39$, $SD = .70$) than in social media ($M = .20$, $SD = .50$). There were no such differences in diminish response and rebuilding response options employment.

DISCUSSION

The study's findings yield valuable insights for how organizations responded to the 2009 H1N1 crisis in terms of (a) instructing information, (b) adjusting information, (c) media channels, and (d) modifications to SCCT's response postures.

Instructing Information

Government organizations in our sample were more likely to emphasize providing instructing information (i.e., information that indicates what actions publics should take to protect themselves) about the H1N1 crisis, whereas organizations representing corporate interests tended

to focus more on reputation management in their crisis response documents. This finding makes sense, given that government communicators experience higher demands for information from their primary publics (Liu et al., 2010) and these publics expect government entities, rather than corporations, to educate them about important issues (Liu & Horsley, 2007).

A more nuanced interpretation of the findings, however, may indicate that the corporations in our sample may be damaging their reputations by predominately focusing on reputation management. For example, pork producers and their representatives employed denial, attack-the accuser, separation, victimage, and endorsement strategies to cope with their own reputation management crises (i.e., possible attribution of responsibility to swine). This active reputation management seems to be successful in the short-term. For instance, the frequency of the term *swine flu* in the organizations' crisis response documents significantly decreased as the crisis progressed from April to July. We wonder, though, if this short-term success comes at a cost given that all crises are opportunities for organization to improve their relationships with key publics (Penrose, 2000). If the corporations had dually focused on reputation management and public education though instructing information could they have enhanced their long-term reputation?

Adjusting Information

Compared to their emphasis on instructing information, government organizations in our sample were relatively less active in providing adjusting information. This finding is surprising because a basic communication duty of the government is to provide for the public good, including addressing concern for publics (Liu & Horsley, 2007). When there is much stress created by uncertainty and potential harm as in the case of H1N1, it is critical to reduce psychological stress created by the crisis through actively providing corrective action and expressing sympathy or compassion for victims (Coombs, 2007).

Media Channels

With respect to the media channels used for disseminating crisis responses during the 2009 H1N1 crisis, organizations in our sample tended to disseminate instructing, adjusting information, and crisis response strategies through social media more often than through traditional media. However, mean scores for all crisis-related responses are higher in traditional media than in social media, indicating traditional media contained more in-depth information than social media. Thus, it seems that organizations in our sample acknowledge the importance of social media as a quick response method during the crisis, using Facebook and Twitter to release adjusting and instructing information. Crises often create opportunities for rapid adoption of new communication technologies (González-Herrero & Smith, 2008; Thelwall & Stuart, 2007) and this study confirms this observation. At the same time, the organizations in this study still relied more on traditional media responses for providing in-depth information, perhaps indicating that the full potential of new technologies was not realized such as increasing publics participation in crisis recovery (Dutta-Bergman, 2006; Procopio & Propcopio, 2007; Rainie, 2005).

Our study also revealed that some organizations did not fully understand how to use social media to respond to crises. For example, often we could not tell if an organization's Twitter post

was about H1N1 because many posts did not include *H1N1, swine flu*, or other cues that would indicate the post was about the crisis. In addition, there were many posts with sentences cut off because of Twitter's 140 character limit, as well as numerous posts where organizations did not fully use the140 character limit. Future research could follow-up on these anecdotal observations to more fully evaluate how effectively organizations employ social media during crises.

Modifying SCCT

The findings provide important implications for enhancing how researchers apply SCCT in future studies. First, in terms of operationalizing SCCT, we believe one of the reasons scholars frequently drop the base responses (i.e., instructing information and adjusting information), when applying SCCT (Kim et al., 2009) is that these response strategies have not been adequately operationalized. However, as Coombs (2007) explained, these base strategies are required for all crises because they meet organizations' fundamental ethical responsibilities for crisis responses.

In this study, we operationalized instructing information as disseminating information that (a) meets the publics' primary information needs (e.g., where to go for more information about H1N1), (b) provides details about how an organization is preparing for the crisis (e.g., vamping up vaccine production), or (c) delivers basic information about the crisis (e.g., defining H1N1's symptoms). We operationalized adjusting information by adding organizations' expression of sympathy for the victims as a part of adjusting information and including the existing operationalization of corrective action (i.e., specific actions organizations take to ensure the same crisis does not have a similar impact in the future). Expressing sympathy or compassion for the victims could help them to deal with a crisis psychologically. For example, Coombs (2007) pointed out the importance of employee assistance programs for adjusting information during a crisis and that ''victims expect an organization to express concern for them'' (p. 136). As first attempts to more fully operationalize these two concepts, we realize further refinement is necessary.

Second, as to crisis response strategies adopted during the 2009 H1N1 crisis, our findings provide interesting suggestions for revising some of SCCT response recommendations. Regarding reinforce responses, SCCT suggests that these options are supplemental to the other three responses. Thus, these strategies should not be used in isolation because they would seem egocentric if used alone (Coombs, 2007; Kim et al., 2009). However, our findings suggest that when there is no or little attribution of crisis responsibility to an organization, adopting reinforce responses alone likely would not have a large negative impact. Thus, when there is little attribution of responsibility to the organization, reinforce response options may be used in isolation just to build positive connections between organizations and their stakeholders.

Finally, our findings also suggest that organizations used two strategies during the 2009 H1N1crisis that currently are not part of SCCT: enhancing and transferring. Government organizations and pharmaceutical corporations frequently used enhancing to focus on their current good deeds. This enhancing approach is different from SCCT's bolstering strategy, which is defined as telling stakeholders about an organization's past good works (Coombs, 2007). In addition, our research found a transferring strategy, which organizations used to support a credible third party's crisis responses to transfer that third party's credibility onto themselves. Considering that the 2009 H1N1 crisis was a tremendous profit and branding opportunity for

pharmaceutical corporations, these corporations attempted to transfer the credibility of health authorities such as WHO onto themselves by identifying how they collaborated with these authorities.

Future Research and Conclusion

Although our research provides multiple meaningful implications, it also is limited by several factors. First, the study focused on organizational responses to the H1N1 crisis primarily in the United States. Future research could compare this study's findings to a comparable study of organizations in another country, which would provide valuable insights into cultural differences in managing similar crises. In addition, the study only examined 13 organizations, and thus the results may not apply to other organizations that responded to the pandemic. Despite these limitations, we believe that the study provides significant lessons for managing large-scale crises, as well as adds to an emerging theory. Although pandemic flu crises are relatively rare, international public health crises are not (Seeger, Sellnow & Ulmer, 2008). Also, all crisis mangers currently face the opportunity of integrating new technologies into their crisis communication and this study is one of handful to provide empirically-based recommendations. Taken as a whole, the study's findings can be applied to health and other types of lingering, high-impact crises to help organizations treat crises as opportunities rather than purely as threats.

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