

IS FACEBOOK AN EFFECTIVE CRISIS COMMUNICATION TOOL FOR COMPANIES?:  
AN ANALYSIS OF BP'S FACEBOOK USAGE AFTER THE OIL SPILL IN 2010

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## ABSTRACT

This dissertation was designed to explore the effects of Facebook in corporate crisis communication and the factors that contribute or hinder the effects with a focus on the British Petroleum's (BP) Deepwater Horizon oil spill crisis in 2010. Within the theoretical frameworks of the situational crisis communication theory, the attribution theory, and the social identity theory, this dissertation analyzed BP America's crisis communication messages and Facebook users' comments on BP America's Facebook page with a quantitative content analysis, and examined influence of congruence between Facebook users' comments and BP's messages on publics' perceived image of BP with an experiment.

The content analysis results revealed that rebuilding strategies dominated BP's crisis response, and Facebook users were more likely to comment favorably when BP used accommodative strategies. The results also suggest that bolstering strategies and third party endorsement may not work as expected.

The experimental results suggest that Facebook may have the potential to be an effective crisis communication tool in affecting publics' perceived image of an organization-in-crisis, and the effects of Facebook are limited to the strategies used by the organization, congruence between Facebook users' comments and the organization's messages, publics' precrisis attitudes toward the organization, and publics' perceived social connection to Facebook users. Theoretical and practical implications of this study were discussed.

## LIST OF ABBREVIATIONS AND SYMBOLS

$\alpha$	Cronbach's index of internal consistency
$b$	$y$ intercept of a regression line
$\beta$	Standardized multiple regression coefficient
$df$	Degree of freedom
$\eta^2$	Eta squared: measure of effect size
$F$	Fisher's F ratio: A ration of two variances
$M$	Arithmetic mean
$n$	Sample size
$p$	Probability value
$R^2$	Coefficient of determination: measure of strength of relationship
$\Delta R^2$	$R^2$ change
$SD$	Standard deviation
$t$	Computed value of t test
$\chi^2$	Chi-square, the classic goodness-of-fit index
ANOVA	Analysis of variance
ANCOVA	Analysis of covariance
BP	British Petroleum
BBS	Bulletin Board System

EPA	U.S. Environmental Protection Agency
FDA	U.S. Food and Drug Administration
NOAA	National Oceanic and Atmospheric Administration
NRDA	Natural Resource Damage Assessment program
PRSA	Public Relations Society of America
SCCT	Situational crisis communication theory
SSMS	Social media management system
VoO	Vessel of opportunity program
WOM	Word of mouth

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## CHAPTER 1

### INTRODUCTION

Social media made the first debut in 1970s with the development of Bulletin Board Systems (BBSs) and instant messaging (e.g., ICQ<sup>1</sup>), and attained major advance in early 2000s with the establishment of LinkedIn, MySpace, and Facebook (Chapman, 2009). After that, there has been a stable increase in the use of social media. In 2012, according to Emarketer, there are 1.43 billion social network users, representing a 19.2 percent increase over 2011 figures (Arno, 2012). For Facebook, the focus of the study, as of April 2012, it has globally registered over 845 million users with half of them logging on to the site daily (Arno, 2012). Social media have become so popular, a report described this phenomenon as “if you’re not on a social networking site, you’re not on the Internet” (IAB platform status report, 2008, p. 1). Researchers who noted the great business potential of social media predicted that social media would become more and more pervasive, and as such, “become a critical factor in the success or failure of any business” (Solis, 2008).

Given the critical role of social media, companies and public relations professionals have started to incorporate social media into crisis communication. For example, Wigley and Zhang (2011) surveyed members of the Public Relations Society of America (PRSA) online to investigate the use of social media tools in organizations’ crisis management. According to the findings, nearly half of respondents (48%) said they have incorporated social media into their

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<sup>1</sup> ICQ (read: I seek you) is an interpersonal chat program. Its desktop application alerts users when fellow ICQers are online, and allows users to conduct real-time chat online and send a maximum of 450-letter interactive message (Cheng, 1999; Fung & Carter, 2007).

crisis plans, with most of them incorporated Twitter, and followed by Facebook, blogs, and YouTube.

However, existing research studies about crisis communication on social media mainly focused on natural disasters. Limited efforts have been made to organizations' use of social media in crisis communication and the effectiveness of social media in restoring trust and averting the negative consequence of unfavorable publicity. This study fills the gap by analyzing the use of Facebook by British Petroleum (BP) during its oil spill crisis in 2010.

### **BP Oil Spill in 2010**

On April 20, 2010, the Deepwater Horizon drilling rig, which was leased to BP America by Transocean Limited, exploded when methane gas ran up the drilling column and ignited. The explosion left 11 platform workers killed and 17 others injured (Welch & Joyner, 2010). The rig sank two days after the explosion and set off an unrestricted flow of oil below the surface of the Gulf of Mexico. Within 88 days, an estimated 55,000 barrels of crude oil was released into the Gulf per day, covering 3,850 square miles and contaminating about 491 miles of coastline in Louisiana, Mississippi, Alabama, and Florida (Polson, 2011; Robertson & Krauss, 2010). The spill was finally sealed on September 19, 2010, nearly five months after the initial blowout. For the extensive damage done, BP's<sup>2</sup> oil spill became the largest accidental spill in the history of petroleum industry, and "the worst environmental disaster that the U.S. has ever faced" (BBC, 2010).

The damage brought by the spill was unprecedented. Beside long-term impacts on ecology, food safety, and water quality, it has severely threatened several "at-risk" industries such as commercial fishing, tourism, and enterprises tied to natural resources. With regards to

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<sup>2</sup> BP refers to BP America throughout the manuscript.

damage on tourism, the estimated economic impact of the oil spill on tourism across the Gulf Coast over three-year period could exceed approximately \$23 billion (Proctor, 2010).

In the disaster, BP and its partners were blamed for making cost-cutting decisions that increased the risk of the blowout (Rascoe, 2011). As a consequence, the company suffered great financial losses and reputational damage. For instance, BP's market value lost \$60 billion within one month of the explosion, and increased to \$105 billion after two months, accounting for over half of the company's total market value (Tharp, 2010). Meanwhile, BP was bombarded with negative opinions. A national survey by the Gallup Group indicated that 37 percent of respondents viewed the oil spill as the worst environmental disaster in the U.S. in the last 100 years, approximately half thought BP had operated the oil rig very poorly, and over 75 percent responded that BP should be blamed for the crisis, with 59 percent of them suggesting that BP should pay for all financial losses resulting from the oil spill "even if the company might be driven out of business by it" (Newport, 2010). However, BP recovered from the crisis quickly. Compared with a loss of \$3,719 million in 2010, BP's profit for 2011 was \$25,212 million (BP, 2010, 2011). BP's recovery might be explained by its effective crisis communication. A survey conducted by PR Week in 2011 showed that 86 percent of respondents said they had not boycotted any BP products as a result of the spill, and approximately half of respondents thought BP handled the crisis very well (Magee, 2011).

### **Research Purposes and Research Questions**

After the explosion, BP devoted lots of efforts on its Facebook page in order to recover from the crisis. This study seeks to examine BP's crisis communication via Facebook, and Facebook users' comments on BP's messages between April 20, 2010 and January 5, 2011. Situational crisis communication theory (SCCT) was used to explore the communication

strategies that BP adopted on Facebook. Coombs' (2006) SCCT provides a comprehensive framework for analyzing crisis responses. It proposes four clusters of organizational crisis communication strategies, which include denial, diminishment, rebuilding and bolstering clusters. SCCT suggests that an organization should choose appropriate crisis communication strategy to match different crisis situations or different levels of reputational threat that the crisis causes for the organization (Coombs, 2006). Through the lens of SCCT, this study explores what the most frequently used crisis communication strategies were by BP on its Facebook page across different time periods.

The present study also attempts to explore the effects of BP's Facebook messages in repairing its damaged image during the crisis, and investigate whether congruence between messages from BP and comments from Facebook users significantly influence publics' perceived image of BP in the aftermath of a crisis. The attribution theory was applied to evaluate the effects. The attribution theory, which views people as naïve scientists who carefully gather data to make explanations, seeks to understand the cognitive process by which individuals make causal explanations about events they encounter (Heider, 1958; Folkes, 1988; Jones & Davis, 1965; Kelley, 1973; Weiner, 1992). According to Kelly (1973), individuals' attributional process is distinguished in terms of the amount of available information. If there is consistency among multiple observations of an event, then an individual has more confidence in making a judgment about the event. Based on the SCCT and the attribution theory, the following overarching questions were addressed:

**RQ1:** How did BP America communicate with publics on Facebook during the Deepwater Horizon oil spill crisis?

**RQ2:** How did Facebook users comment on BP America's crisis communication messages on its Facebook page?

**RQ3:** How did BP America's messages and Facebook users' comments on BP America's Facebook page influence people's perceived image of BP America?

### **Significance of the Study**

By exploring the topic and answering the questions mentioned above, the present study will provide a number of theoretical and practical implications for academicians and public relations professionals. First, this study tests the applicability of SCCT in Facebook environment. Though SCCT has been widely used to analyze crisis responses in real-life context, the majority of past research focused on crisis communication via traditional media (Formentin, 2012), news websites (Schwarz, 2012a), BBSs (Choi & Lin, 2009), or online forums (Coombs & Holladay, 2012). Little research has been conducted to use SCCT to examine crisis communication strategies on advanced social networking sites such as Facebook, a primary social media outlet organizations use to respond to crises (Sutter, 2009). Thus, the findings of this study will add to the growing literature on application of SCCT in crisis communication research in the context of social media.

Second, this study explores whether a company's Facebook involvement during a crisis may attenuate the negative effects of the crisis on its corporate image. The Econsultancy/ Responsys 2013 Marketing Budgets survey recently revealed that 62 percent of companies will increase their social media investment this year, and 38 percent will increase their investment in their social media management system (SSMS)<sup>3</sup> (Rodgers, 2013). Despite the continually increasing investment in social media, companies have little knowledge about the actual effects of social media (Rodgers, 2013). Many companies watched the rise of social media use among consumers and began to use it because they felt there was something to gain, while others

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<sup>3</sup> Social media management system (SSMS) is a software suite that allows an organization to connect to and monitor multiple social media accounts with one click (Rodgers, 2013).

watched their competitors using social media and decided to follow because they felt they had to (Rodgers, 2013). Purposes of using social media in special occasions such as crises are similar to that in routine business, to deliver information quickly and directly, and to create positive publicity. However, similar to the need to prove the efficiency of social media in business performance, there is also a need to understand the effects of social media in crisis communication.

Third, this study will delineate the effects of online user-generated content or online word-of-mouth (WOM) in a company's crisis communication. Online WOM can have a significant effect on opinions as it is perceived as being informative, trustful, and relevant (Bickart & Schindler, 2001; Dellarocas, 2003; Huang, Cai, & Zhou, 2011). Online WOM has shown to influence consumer attitudes (Chevalier & Mayzlin, 2006; Dellarocas, Zhang & Awad, 2007), purchase intentions (Prendergast, Ko, & Yuen, 2010), and product sales (Berger, Sorensen, & Rasmussen, 2010; Zhu & Zhang, 2010). However, the impact of online WOM on corporate image during a crisis has yet to be explored. The findings of this study will shed light on the role of online WOM during a crisis by examining the comments posted by Facebook users based on the volume of comments and the degree of congruence between the comments and BP's messages. Also, this study will provide empirical evidence of the effects of the comments on publics' perceptions of BP and their behavior intentions.

Finally, this study has practical implications for crisis communication of companies. The findings of this study will help to critically evaluate the opportunities and threats presented by Facebook, and provide recommendations for Facebook use in crisis communication.

## **Chapter Overview**

The ensuing pages are organized into five chapters. Chapter 2 summarizes the present literature, and lists of research questions and hypotheses to be addressed. Chapter 3 outlines the research methods and statistical analyses performed in this study. Chapter 4 presents the findings. In Chapter 5, some of the important findings and implications are discussed. The coding sheet and questionnaire used in the current study are enclosed in the Appendices.

## CHAPTER 2

### LITERATURE REVIEW

#### CRISIS AND CRISIS COMMUNICATION

##### Defining Crisis

Many definitions of a crisis exist as crises themselves. Generally, a crisis is a “big trouble” that arises suddenly (Lerbinger, 1997, p. 4). Ruff and Aziz (2003) suggested that a crisis is an incident or situation that can “focus negative attention on a company or organization internally” (p. 3). Egelhoff and Sen (1992) considered it to be “a function of external or environmental threats and internal or organizational weakness.” Pearson and Clair (1998) defined an organizational crisis as “a low-probability, high-impact event that threatens the viability of the organization and is characterized by ambiguity of cause, effect, and means of resolution, as well as by a belief that decisions must be made swiftly” (p. 60).

More specifically, a crisis can be characterized as the confluence of human, organizational and technology failures combined with regulatory, infrastructure, and preparedness shortcomings within the organization (Shrivastava, Mitroff, Miller, & Miclani, 1988), or an event having an adverse impact on “the integrity of the product, the reputation or financial stability of the organization, the health or wellbeing of employees, the community, or the public at large” (Wilcox & Cameron, 2006, p. 258). It can also be defined by various factors including insufficient information, loss of control, outside scrutiny and institutional short-term focus (Umansky, 1993), inadequacy of the response to a threatening situation (Khandwalla, 1978), or failure of the strategic decision-making process in the organization (Dunbar & Goldberg, 1978).

The aforementioned definitions of crisis indicate that crises share some common elements, such as surprise, high-level of uncertainty, and major threat or harm to survival of an

organization. This study adopted the definition of a crisis developed by Coombs (2007), who attempted to capture the common elements of crises and defined a crisis as “the perception of an unpredictable event that threatens important expectancies of stakeholders and can seriously impact an organization’s performance and generate negative outcomes” (pp. 2-3).

### **Crisis Characteristics**

Coombs’ (2007) definition highlights several characteristics of a crisis. First, a crisis is perceptual, which means whether a crisis exists depends on whether organizational participants receive and interpret the signal of a crisis as representing a serious threat (Seeger, Sellnow, & Ulmer, 2003). From the stakeholders’ perspective, if the stakeholders believe there is a crisis, the organization is in a crisis unless the organization can persuade its stakeholders that there is no crisis (Coombs, 2007).

From the organizational perspective, Kuklan (1988) suggested that whether a situation is perceived as a crisis depends on the perceived discrepancy between the capabilities and resources believed to be needed to cope with the situation, and the capabilities and resources that the organization can bring to bear in responding to the problem. According to Kuklan (1988), if no discrepancy is perceived to exist, then the situation is viewed to be non-crisis in nature; if the discrepancy is perceived to be manageable, then the organization views the situation as crisis type I. That means the crisis is challenging but controllable, and even an opportunity to demonstrate the capabilities and potentiality of the organization. While if the discrepancy is perceived to be beyond the decision makers’ capability to control, the situation is perceived as crisis type II, in which the decision makers see little chance of coping with the situation successfully. Using the international debt of Mexico as an example of crisis and examining the perceptions of the crisis by the U.S. headquarters which have affiliated business in Mexico,

Kuklan (1988) found that it was not the actual intensity of the crisis, but the decision makers' perceived intensity of the crisis that leads to either positive or negative outlook.

Second, a crisis is unpredictable but not unexpected (Coombs, 2007). Although crises are low probability events, argued Schwartz (2003), current trends in technology, population change, medicine, ethnic conflicts and others will produce inevitable surprises that to a large extent we can anticipate. In this sense, crisis preparedness or crisis planning has become the "most critical" strategic activity that an organization could undertake to reduce uncertainty, and respond to a crisis in a timely and effective manner (Seeger et al., 2003, p. 164). To achieve the goals, organizations are suggested to identify general and specific vulnerabilities (Lerbinger, 1997), key stakeholders (Gonzalez-Herrero & Pratt, 1996), key team members (Nudell & Antokol, 1988), and communication channels (Fearn-Banks, 1996). Practitioners from organizations with crisis-plans showed greater confidence in their ability to respond to crises than those from organizations without plans (Cloudman & Hallahan, 2006).

The third characteristic of crises is that crises can violate expectations that stakeholders hold about how organizations should act (Coombs, 2007). As argued by Fediuk, Coombs, and Botero (2012), in the stakeholder-organization relationship, stakeholders develop certain expectations about the behavior of the organization, and the expectations can be met or violated according to the organization's actions. Expectancy violations can either be positive, when the organization goes beyond its stakeholders' expectations (e.g., engagement in corporate social responsibility), or negative, when the organization performs below expectations (e.g., crisis situation). The negative expectancy violation directs attention toward the violation, triggers information seeking, threatens the relationship between an organization and its stakeholders, and what is worse is that it puts the organization's reputation in danger (Coombs, 2007).

Although a crisis is typically associated with negative consequences, a crisis that is well managed can benefit an organization (Mandell & Zacker, 1977). Fink (1986) suggested that crisis can result in either a highly desirable or highly undesirable outcome, in other words, both threats and opportunities. Pearson and Clair (1998) further extended it as “crisis will lead to both success and failure outcomes for the organization and its stakeholders” (p. 67). In this sense, crises need to be understood not only in terms of how they are perceived but also how they are addressed.

### **Crisis Management**

Crisis management is “a set of factors designed to combat crises and to lessen the actual damages inflicted” (Coombs, 2007, p. 5). It seeks to reduce the frequency of crises, limit the harm, duration, severity and intensity of a crisis, and identify ways to use the crisis as a learning opportunity and as a force in renewal in post-crisis (Seeger, et al., 2003). Along with the three stages of a crisis, including pre-crisis, crisis and post-crisis (Coombs, 1999), crisis management process consists of crisis prevention, crisis response and recovery from a crisis. Several studies have produced strong argument in an effort to define the ideal crisis management approach. Kauffman (1999) claims that an organization facing a crisis should at least (1) respond quickly, (2) tell the truth, and (3) provide a constant flow of information, especially to key publics. Fines (1985) adds elements of advanced planning and outside support, and points out that an organization should (1) set a broad strategy in advance, (2) respond quickly, (3) train spokespersons in advance, (4) seek third party support, and (5) centralize the spokesperson’s function.

An organization survives or thrives by effectively managing the relationship between itself and its stakeholders (Clarkson, 1991; Wood, 1991). In an organization’s environment, there are

mainly two groups of stakeholders: primary and secondary, with primary stakeholders referring to those people or groups whose actions can be beneficial or harmful to an organization, such as employees, customers, government, shareholders, and suppliers; and secondary stakeholders consisting of persons or groups who can affect or be affected by an organization's actions, such as the media, competitors, and activists (Coombs, 1999).

Given that the public would analyze the same crisis situation according to their organization-public relationship, favorable organization-stakeholder relationships are the foundation for effective crisis management. Freeman (1984) suggested that if organizations are going to be successful, they need to look beyond just their stakeholders and expand their view of critical relationships (Ulmer, 2001). Ewing points out that an organization exists for optimization of satisfaction of stakeholders (cited in Heath & Coombs, 2006). Grunig and Repper also note that one key strategy for organizations is to “build relationships with the most important stakeholders” (cited in Taylor, Vasquez, & Doorley, 2003, p. 261). To fulfill this goal, an effective communication is especially essential for maintaining a positive relationship with key stakeholders such as employees, customers, suppliers, and shareholders, which sets the cornerstone for future support from stakeholders. In addition, since different messages are targeted to different stakeholders during a crisis, a crisis can be viewed as “a way to determine who is important to the organization at that time” (Stephens, Malone, & Bailey, 2005, p. 393).

### **Crisis Communication**

Communication is the essence of crisis management. Shin (2004) argued that “conflict is always located in the organization-public relationships because both an organization and its publics have different and sometimes conflictual goals, role, values, rules, process and desired outcome” (p. 192) and preferred outcome can be obtained by strategic conflict management,

particularly crisis communication. Crisis communication is “the communication between the organization and its public prior to, during, and after the negative occurrence,” which is designed to “minimize the damage to the image of the organization” (Fearn-Banks, 1996, p. 2) and “win or restore audiences’ or publics’ confidence that has been lost as a result of crisis” (Bechler, 1995). Image is regarded as a valuable asset (Alsop, 2004; Dowling, 2002; Fombrun & Riel, 2004). The impact of a crisis on an organization’s image is hard to assess. Mitroff (2003) finds that even a positive image can be destroyed instantly in a crisis (Curtin & Gaither, 2007). Since it is “an impression” (Benoit & Pang, 2007, p. 244), a damaged image requires much longer time to repair than compensation of financial losses. The best way to protect the organizational image is to modify the public’s perception of who is responsible for the crisis and to maintain a positive image or restore a damaged image among stakeholders (Coombs, 1995; Ray, 1999).

### **Types of Crises**

Organizational crises may take many forms. Ulmer, Sellnow and Seeger (2007) identify crisis types into two categories: *intentionally* caused crises, which include terrorism, sabotage, workplace violence, poor employee relationships, poor risk management, hostile takeovers and unethical leadership; and *unintentionally* caused crises, which mainly consist of natural disasters, disease outbreaks, unforeseeable technical interactions, product failure and downturns in economy. Compared to the rest of crisis types, socio-technical crisis produces one of the most prominent and urgent forms of crises (Shrivastava, 1993; Shrivastava, Mitroff, Miller, & Miglani, 1988).

**Technical Crises.** Technical crises, such as oil spills, are becoming important because of their increased frequency, the extensive damage they cause to human life and environment, and their large cost to organizations and society. During the past five decades, oil industry has been

rarely absent from the U.S. media spotlight. From the Union Oil Company's oil spill in the Santa Barbara channel off the coast of Southern California in 1969 (Brown, 2008), through the Exxon Valdez crash into the Alaskan Bligh Reef in 1989 (Barton, 2001), up to BP Deepwater Horizon spill in the Gulf of Mexico in 2010, oil companies have been perceived by many as irresponsible, arrogant, and greedy (Spangler & Pompper, 2011). Media attention and the contagious effect of a crisis, where the negative publicity impacts not only the company that is suffering from a crisis, but also "infects" other companies in the same industry (Dahlen & Lange, 2006), have amplified public's negative impressions of the oil industry. In this sense, being transparent, dealing with facts and being open to external criticism are necessary for oil companies to neutralize negative public perceptions in the time of a crisis.

An oil company involved in a technical crisis is suggested to take active media strategies to earn trust from the publics and the media (Spangler & Pompper, 2011). As said by a senior public relations executive in one of the biggest marketers in oil industry in the United States, "you have to have some corrective action when something bad happens and to communicate to people that you are going to see what you can do to make sure it doesn't happen again. ... The same kind of relationship you have with the community is the same one you have with the media" (Spangler & Pompper, 2011, p. 11). For some oil companies, anticipating media needs during a crisis is lesson that they learned in the hard way. For example, after the Exxon Valdez oil spill, Exxon managed to ostracize the media instead of benefiting from messages of reassurance and explanation. In an article of the *New York Times*, The Exxon communications headquarter in Alaska was described to be like a fortress, with "armed guards all over the place", and journalists "suddenly couldn't get near the place" (Gottschalk, 1993, p. 198). As a consequence, within

weeks after the spill, thousands of Exxon customers tore up credit cards and mailed them back to its headquarters (Barton, 2001).

## **SOCIAL MEDIA IN CRISIS COMMUNICATION**

Recently published studies suggested that not only the crisis responses, but also the medium that an organization uses in crisis communication matters (Liu, Jin, & Austin, 2013; Utz, Schultz, & Glocka, 2013). For example, Liu, et al. (2013) found that people were more likely to comment positively on an organization's crisis when they learned about the crisis from the organization via social media than from traditional media or offline WOM communication. Similarly, in Utz, et al.'s (2013) study using the Fukushima Daiichi nuclear disaster as crisis scenario, they found that compared to crisis communication in the newspaper, crisis communication via social media resulted in a higher reputation and less secondary crisis reactions such as boycotting the company. To understand the role of social media in crisis communication, it is necessary to first understand this new communication technology.

### **Defining Social Media**

Social media technologies have fundamentally changed the way people connect with each other over the world (Jackson, 2010). Despite the prevalence of social media, the definition about what constitutes social media is still on developing stage. Some scholars emphasized the differences between social media and traditional media. For example, Marchese (2007) suggested that the difference is not the media itself, but the system of discovery, distribution, consumption and conversation surrounding the media. Wright and Hinson (2009) suggested that social media are less costly and more accessible than traditional media.

Whereas, other scholars focused on the use of social media and characteristics of social media, for example, Dykeman (2008) described social media as a place for anyone to publish

creative content, provide and obtain real-time feedback via online discussions and evaluations. Palen (2008) defined social media as “blogs, social networking environments, person-to-person broadcasting messaging and other Web 2.0 applications” (p. 76). Correa, Hinsley, and de Zuñiga (2010) defined social media as “a mechanism for an audience to connect, communicate, and interact with each other and their mutual friends through instant messaging or social networking sites” (p. 247-248). The American Public Health Association refers to social media as “the various electronic tools, technologies, and applications that facilitate interactive communication and content exchange, enabling the user to move back and forth easily between the roles of audience and content producers” (Currie, 2009, p. 1). The definition used in the current study is the one developed by Kaplan and Haenlein (2010), who defined social media as “a group of Internet-based applications that build on the ideological and technological foundations of Web 2.0, which allows the creation and exchange of user-generated content” (p. 61).

As a unique and meaningful way to reach customers with lower costs than traditional media, social media have been considered to be a boon for marketers. Nowadays, over half of global business-to-business (B2B) marketers use social media to engage with their vendors, 75 percent are likely to use social media in future purchase process, and 61 percent of U.S. marketers use social media to increase generation of consumer interest or inquiry into products or services (Cohen, 2012). According to the findings of a recent annual survey of the social media adoption among the Fortune 500 companies, which was conducted by the University of Massachusetts Dartmouth Center for Marketing Research, there has been a surge forward in the use of social media (Barnes, Lescault, & Andonian, 2012). In 2012, those business giants have increased their adoption of blogging by five percent (28%), their use of Twitter by 11 percent (73%), and their use of Facebook by eight percent (66%) (Barnes, et al., 2012).

Social networking sites are the main category of social media. According to Boyd and Ellison (2007), social networking sites are “web-based services that allow individuals to (1) construct a public or semi-public profile within a bounded system, (2) articulate a list of other users with whom they share a connection, and (3) view and traverse their list of connections and those made by others within the system” (p. 211). Social networking sites include Facebook, LinkedIn, and MySpace etc. Compared to social networking sites such as LinkedIn, which offer less room for spontaneous interactions and network generation, Facebook emerged with “a publicly open structure, loose behavioral norms and an abundance of tools that members use to leave cues for each other” (Papacharissi, 2009, p. 1).

## **Facebook**

Facebook, the focus of the current study, is one of the easiest and most versatile social networking sites for professionals today (Solis & Breakenridge, 2009). Facebook, which was founded in 2004 by Mark Zuckerberg at Harvard University (Phillips, 2007), is a web-based social utility that was designed to facilitate efficient communication between family, friends, and coworkers. Eight years later, with approximately 850 million members registered, Facebook becomes the most visited site on the Internet (Arno, 2012).

While Facebook has existed since 2004, it was not open for business until 2006, when it invited ten elite companies, including Apple, Amazon.com, and Electronic Arts, to set up company profiles. A year later, Facebook extended the invitation to all companies (Vorvoreanu, 2009). More than 4,000 organizations joined Facebook in 2008 (Haigh, Brubaker, & Whiteside, 2011), and in the following years, Facebook has been viewed as the most important new communication medium for public relations message distribution, and has become the most frequently used social medium by public relations professionals (Wright & Hinson, 2011).

Facebook enables companies to better nurture organization-public relationships. A company on Facebook can post sales information, promotion, and new product announcements, educate its publics by posting research data and relevant articles, and inform them of upcoming corporate events. Also, companies try to engage publics on their Facebook pages. According to Parrish, Elliott, Riley, and Wise (2010), a total of 97 percent of companies allow direct posting to their walls, and some companies (e.g., Target) allow fan-to-fan conversations to build sub-communities. As a result, corporate Facebook pages are attracting more customers than traditional corporate websites, making Facebook the leading platform for relationship marketing (Neff, 2010a). For example, Neff (2010a) suggested that while U.S. web traffic to brand websites rarely exceeds six figures, there have been 37 branded Facebook pages with at least a million fans in 2010, such as Starbucks (12.7 million fans), Coca-Cola (10.7 million fans), and Oreo (8.7 million fans) etc., with daily growth rate ranging from 29,700 to 96,000. Some Facebook staffers even argue that companies will eventually abandon their corporate sites and rely on their Facebook pages for all business activities (Goldstein, 2011).

### **The Role of Social Media in Crisis Communication**

The crisis communication landscape has changed significantly with the popularity of social media. Up until very recently, companies reach out to their publics through traditional media, such as television, radio, newspapers, and magazines (González-Herrero & Smith, 2008). Under this “one-to-many” model, companies and the media determined what information to distribute, and once it was published, publics had little opportunity to respond. Social media created a new digital environment where peer discussion or “many-to-many” model is replacing the “one-to-many” model. As said by Nathan Huebner, emergency risk communication specialist of the Centers for Disease Control and Prevention, the change brought by social media is not

about companies talking to their publics, but publics talking back to the companies, and more importantly, publics talking to each other (Currie, 2009).

**Attributes of social media.** Hart (2011) implied that social media have five attributes: being authentic, being transparent, releasing information rapidly and consistently, stressing on a decentralization of authority, and engaging users in a collaborative effort. First, social media provide a platform where companies can communicate with their publics in humanistic way by replying to their questions and concerns, rather than acting like a robot and simply “cut and paste.” Second, what social media audiences expect from companies and also what companies are trying to show is transparency. If a company is unable to be transparent, then the use of social media tools will be futile (Byrd, 2011). Third, in addition to the broad range of information that a company can offer during its use of social media (e.g., company information, customer service, and community service, etc.), social media speed up the distribution of information to great extent. This attribute of social media becomes more significant in times of emergency or crises, when social media can be used to transmit critically important information immediately to as many people as possible. Fourth, social media tools can increase the two-way communication between a company and its publics. As Hart (2011) pointed out, instead of “top-down, one-directional information dictated by leaders of corporations, information has more opportunities to move from the bottom up, from the sides, and between different groups” (p. 117). Last, social media can encourage and strengthen the collaboration between a company and its publics, which is crucial for building favorable organization-stakeholder relationship in daily routine and maintaining the good relationship in crisis situations.

The attributes of social media may make social media act as both an aid and a trigger in crises. Specifically, the attributes such as being authentic, being transparent, and releasing

information rapidly make social media aid in a crisis by better fulfilling publics' needs for information in a crisis. But social media may also trigger or exacerbate a crisis because controlling the flow of information in a crisis is paramount to successfully managing a crisis, but the attributes such as decentralization of authority and encouraging users to express opinions make controlling information become more challenging than ever.

**The dark side of social media.** The dark side of social media is that companies have less control over the user-generated content posted on their social networking sites, and thus spread of information by publics on social media may trigger a crisis or exacerbate the negative effects of a crisis. Mr. Tisch, the chief executive at Argyle Communications said, "in a world where the ordinary consumer is walking around with global publishing power in his or her pocket...the role of public relations and corporate communications has shifted from creating content to attempting to influence the content that's created by others" (Elliott, 2011). The ease and availability of social media platforms allow publics to spread and share information with each other at high speed. In this sense, social media may act as amplifier for negative information about the company.

The possible negative fallout from crises in social media environment is fourfold. First, the negative buzz spreads quickly via social media (Ward & Ostrom, 2006). In the age of social media, a customer now can share complaints with 10 million customers virtually overnight (Gillin, 2007). Second, the negative publicity of the company on social media may lead to lost sales and reputation damage, which is often hard to recover from (Aula, 2010). Third, what is worse is that the availability and convenient accessibility of social media enables and encourages publics to be more critical of companies (Fournier & Avery, 2011). Fourth, social media make it difficult for companies to hide from their mistakes (Ingram, 2010). For example, aircraft industry

firm Boeing Co. was involved in potentially disastrous public relations situation when it responded to a child's letter, in which he attached his crayon drawing of a plane, with a stern, legal-form letter completing with "we regret to inform you that we have disposed of your message and retained no copies." This inadvertent hostile response resulted in widespread criticism of the company on online social networking sites after the child's father blogged about the incident (Parekh & Lee, 2011).

**The bright side of social media.** The bright side of social media in crisis situations is that companies can use social media to monitor publics' complaints and to share information directly and efficiently with publics to reduce publics' uncertainty about the crises. For example, in 2010, the Pampers Dry Max diapers launched by Procter & Gamble Co. (P&G) were blamed on Facebook, online retailer review boards and other forums for causing diaper rashes. P&G responded quickly to the blame on its Facebook page, noting Dry Max diapers were well tested before launching to market, and the recent evaluation found no evidence that the Dry Max diapers were behind diaper rashes reported. On its Facebook statements, P&G also claimed that recent nationwide surveys found 70 percent of moms prefer Dry Max diapers, pointed out hundreds of favorable blog posts about its products, and characterized the complaints as false rumors. As a consequence, instead of being affected, P&G's diaper share increased by 2.2 percent after the event (Neff, 2010b). Another example is Southwest Airlines case. In April 2011, Southwest Airlines inspected 81 of its Boeing 737 and cancelled approximately 300 flights after an incident in which a hole was ripped in the roof of a flight from Phoenix to Sacramento. Southwest was praised for its handling of this event. Southwest posted informative messages on twitter and Facebook, and let commentary and analysis of this incident run on social media, without attempting to hide any unfavorable information (May, 2011).

Companies can also use social media to learn publics' insights and concerns, and obtain help or suggestions from publics to weather the storm. For example, during the fall of 2007, Mattel had a series of worldwide product recalls involving 21 million toys due to lead paint and the hazard posed by small magnets. During the product recall crisis, the Playground Community, which is an online community launched by Mattel in early 2007 and is comprised of 500 moms, played an important role in helping Mattel to overcome the recall crisis. Moms from the community provided Mattel with insights about how they felt about the recall, their perceptions of Mattel's response plan, and what their main concerns were. They even made suggestions for Mattel's response strategy, for example, shaping a promotion for one of the toy lines that was badly affected by the recall, and shaping new products and marketing plans. As a result, despite several worldwide recalls in 2007, Mattel found the fourth quarter 2007 sales had increased by six percent compared to the previous year. Consumers remain confident in Mattel's products, as members of the Playground Community said, "I am glad to see Mattel take action in forming this group (the community). The recalls shouldn't have happened in the first place, but my confidence in Mattel remains strong", and "I felt he (Bob Eckert, CEO of Mattel) was honest and sincere. It made me feel that they're not going to hide anything from us, but will continue to be up front" (Communispace, 2008).

## **COMPANY-ACTIVITY ON SOCIAL MEDIA IN CRISIS COMMUNICATION**

As mentioned above, although social media may push a company down, social media may also provide a company a powerful platform to directly communicate with its publics, therefore diminish negative effects and reverse damaged corporate image.

### **Organizational Involvement in Social Media**

Companies and public relations professionals have started to incorporate social media into crisis communication. Previous research suggested that organizations use social media to monitor potential crises, detect misperceptions that need to be corrected, discover consumers' concerns, and most of the time, to distribute information to stakeholders during crises (Wigley & Zhang, 2011).

Companies' responses substantially influence the consequences of crises. Promptness of company responses is a key component in limiting the damage caused by negative publicity. For example, with case studies of automobile industry (i.e. Chevrolet, Ford, Dodge, Audi, and Suzuki), Weinberger, Romeo and Piracha (1991) found that company responses immediately following the negative publicity might mitigate the detrimental sales effects. Weinberger et al. (1991) also found that a strong company name provides only limited protection from negative information, which makes company response more critical because companies cannot rely on consumer loyalty in the face of negative coverage.

Companies' communication strategies are another crucial factor that determines the effectiveness of crisis management efforts. For example, Kerkhof, Beugels, Utz, and Beukeboom (2011) empirically compared the effects of different crisis responses (i.e., denial, apology, and no response) on social media after negative publicity about the company. The results suggested that comparing to denial and no response, apology led to higher credibility and a more positive attitude toward a company's response, though apology increased the perceived responsibility of the company for the crisis.

### **Crisis Communication Strategies: Situational Crisis Communication Theory (SCCT)**

Crisis communication strategies were first examined as apologia or the use of communication to defend a company's reputation from public attack (Ware & Linkugel, 1973).

Based on apologia related research, Benoit (1992, 1995, 1997) suggested three image restoration approaches: denial, evasion of responsibility, and reducing the offensives. Denial strategies are used to simply deny the responsibility of an organization in a crisis or to shift the blame; evasion of responsibility strategies are used to lessen or minimize an organization's involvement in a crisis; and reducing offensives strategies are used to repair an organization's image by lessening the perceived offensiveness of a crisis (Benoit, 1997). Benoit's (1997) image restoration theory identifies what crisis response strategies are better to use in crises, but because the theory was developed mainly based on case studies rather than empirical tests, it does not offer conceptual links between crisis response strategies and elements of crisis situations, and therefore does not provide clear direction for practitioners to choose appropriate strategies in a given crisis.

Based on works of Benoit (1992) and other scholars such as Allen and Caillouet (1994), Coombs and his colleagues began the development of SCCT in 1995. The premise of SCCT is that stakeholders will make attributions about crisis responsibility of an organization, and those attributions will affect how stakeholders interact with the organization in crisis (Coombs, 1995; Coombs & Holladay, 1996). Coombs posits three core elements of SCCT: crisis situation, crisis response strategies, and a system for matching crisis response strategies to crisis situation.

**Crisis situation.** Understanding crisis situation is a process of evaluating potential reputational threat of a crisis to an organization. There are two steps, with the first step generating the initial assessment based on evaluation of the organization's crisis responsibility, and the second step modifying the initial assessment based on the organization's crisis history, and prior reputation and stakeholder relationships.

The first step focuses on crisis responsibility, which is the core of SCCT (Coombs, 2006). Crisis responsibility, referring to "the degrees to which stakeholders attribute the cause of the

crisis to the organization” (Coombs, 2006, p. 243), is a major factor in determining the level of reputational threat posed by a crisis, and is assessed based on the crisis types and severity of the damage. The SCCT groups crisis types into three clusters: victim cluster, accidental cluster, and preventable cluster (Coombs, 2007). The victim cluster, including crises such as natural disasters, rumors, workplace violence, and malevolence, produces minimal attribution of crisis responsibility because stakeholders view the organization as a victim rather than the cause of the crisis (Coombs, 2007). The accidental cluster produces low attributions of the organizational crisis responsibility, and these kinds of crises (i.e., challenges, technical-error accidents, and technical-error product harm) are seen as unintentional and uncontrollable by the organization to a large extent (Coombs, 2007). The preventable cluster includes human-error accidents, human-error product harm, and organizational misdeeds (e.g., regulation violation, management misconduct, etc.). This cluster produces the strongest attributions of crisis responsibility, and stakeholders think that the crises that could have been prevented occur because the organization intentionally places people at risk (Coombs, 2007). Coombs (2012) also points out that an organization in crisis and its stakeholders may disagree on the crisis type, and in that case, the organization should seriously consider adopting the stakeholders’ points of view. Crisis responsibility is also influenced by severity of the damage, which represents “the amount of financial, physical, environmental, or emotional harm a crisis can inflict” (Coombs, 2006, p. 243). The more damage that a crisis causes, the more responsibility that people will attribute to the organization in crisis (Coombs, 2006).

The second step of understanding crisis situation is to modify the initial assessment based on two intensifiers: crisis history, and prior reputation and organization-stakeholder relationship (Coombs, 2006). Crisis history is whether or not an organization has had a similar crisis or crises

in the past, while prior stakeholder relationship refers to the quality of the communication between an organization and its stakeholders (Coombs & Holladay, 2001). A crisis history and poor stakeholder relationship may magnify the severity of the reputational threat of the present crisis for the organization. As a consequence, stakeholders may treat a victim crisis like an accidental crisis, and similarly, treat an accidental crisis like an intentional one. Coombs (2004) and Coombs and Holladay (2001) found that the intensifiers have a direct effect on organizational reputation rather than an indirect effect through crisis responsibility.

**Crisis response strategies.** Crisis response strategy is the second core element of SCCT. Coombs (1995) creates five categories of basic organizational response strategies to crisis situations: non-existent strategies, distance strategies, ingratiating strategies, mortification strategies and suffering strategies. Coombs' approach for crisis communication strategies has evolved over time. He states that a more productive approach is to identify the most common crisis communication strategies and to discover a thread that connects them together (Coombs, 1999). In revising his five categories of strategies, Coombs (1999) chooses seven strategies that are cited as most commonly used strategies by organizations when facing with reputation-threaten events. The seven strategies are, ordered from the most defensive to the most accommodative: attacking accuser, denial, excuse, justification, ingratiation, corrective actions, and full apology.

In further refinement, Coombs (2007) develops four clusters of crisis response strategies: (1) "denial cluster", which includes attacking the accuser (confronting person claiming a crisis occurred), denial (asserting no crisis), and scapegoating (shifting the blame to else outside the organization), and attempts to eliminate the crisis by denying its existence or the organization's responsibility for the crisis; (2) "diminishment cluster", which takes forms of excuse (denying

intend to do harm or claiming inability to control) and justification (minimizing severity of damage) with the purpose to weaken the link between the crisis and the organization by claiming crisis is not the organization's fault; (3) "rebuilding cluster" of compensation (providing money or other gifts to the victims) and apology (taking full responsibility), which strives to restore legitimacy by seeking public approval and forgiveness; and (4) "bolstering cluster", which includes reminder (telling stakeholders about its past good works), ingratiation (praising stakeholders), and victimage (reminding stakeholders that the organization is a victim of the crisis too). Coombs (2007) defined denial, diminishment and rebuilding clusters as primary crisis response strategies and bolstering cluster as supplemental strategies, which must be used with one of the other three clusters.

In addition to these strategies, Coombs (1999) also mentions two other strategies: "silence", or "no comment", and "endorsement of an outside expert". He notes that "silence" is a very passive response and the use of the strategy reflects that the uncertainty of an organization, equal to submitting the power of control over the public's perception of the crisis to others. Compared with "silence" strategy, seeking third-party support is more effective to help build the credibility of an organization-in-crisis by asking outside experts to give positive reviews of the organization's crisis management efforts or to agree with the organization's assessment of the situation. For example, the government says the organization's stated cause of the crisis is true.

**A system for matching crisis response strategies to crisis situation.** A system for matching crisis response strategies to the crisis situation is the third core element of SCCT. Coombs (2007) suggests that organizations should choose appropriate crisis communication strategies to match different crisis situations based on four factors: crisis types, severity of damage, crisis history of the organization, and stakeholder-organization relationship history.

Coombs (1998) notes that as the reputational damage of a crisis intensifies, publics' perceptions of crisis responsibility strengthen along with the need for more accommodative strategies. Besides, an organization with history of poor performance should respond with more accommodative strategies to win public forgiveness and rebuild public confidence. In this sense, if an organization's crisis responsibility is low, defensive strategies such as "denial" or "attacking the accuser" may be effective, whereas if an organization's crisis responsibility is high, accommodative strategies such as "compensation" or "apology" are desirable. If under the latter situation, the more defensive an organizational crisis response is, the more likely that the publics hold more negative evaluations of the organization, and the mistrust might directly lead to decline in purchase and leave little space for the organization to recover its tarnished image in long run.

SCCT has been applied in various research studies. For example, Sisco (2012) tested the effects of SCCT response strategies from a nonprofit organization, and the findings confirmed that participants attributed the most crisis responsibility to the preventable situation and the least to the victim situation. More recently, Kim and Liu (2012) applied SCCT to investigate how corporate and government organizations responded to the flu pandemic in 2009, and found that the government organizations emphasized providing instruction information to their publics, while corporations emphasized managing reputation and frequently adopted denial, diminishment, and bolstering response strategies.

Though SCCT has been applied to examine a number of different crises, it has been rarely applied to crisis communication on Facebook. During the oil spill crisis in 2010, BP set up contact, news and notes tabs on its Facebook page, and posted updates on its Facebook page nearly every day, reporting how much oil has been removed over time (Lee, 2010). Based on

SCCT, the following research questions were addressed to explore BP's response to the Deepwater Horizon spill on Facebook.

**RQ1:** How did BP America communicate with publics on Facebook during the oil spill crisis in 2010?

**RQ1a:** What was BP America's dominant crisis communication strategy?

**RQ1b:** How did BP America's crisis communication strategies vary over time?

**RQ1c:** How did accommodation levels of BP America's messages vary by message sources?

## **STAKEHOLDER-ACTIVITY ON SOCIAL MEDIA IN CRISIS COMMUNICATION**

One of the biggest challenges of using social media in crisis communication is the participation of publics, or creation and exchange of user-generated content. Users' activities on social media consist of user-to-user communication (e.g., conversations between users on Facebook via personal accounts), and user-to-organization communication (e.g., conversations between a company and its consumers on the company's Facebook page).

Existing studies primarily focused on the user-to-user communication and users' information seeking behavior on social media in natural disasters or emergencies (e.g., Boyle, Schmierbach, Armstrong, McLeod, Shah, & Pan, 2004; Seeger, Vennette, Ulmer, & Sellnow, 2002). For example, Sutton, Palen, and Shklovski (2008) found that during the wildfires in Southern California in 2007, a certain proportion of residents in the affected region used social media searching information that was not provided by official sources (38% used blogs, 15% accessed forums, 10% accessed photo-sharing sites, and less than 10% used Twitter). Similarly, in a study regarding the tsunami threat to New Zealand in 2009, Mersham (2010) found social media acted as "back channels" for public information seeking when there was a lag in releasing official emergency messages. Mersham (2010) thus suggested that despite the concern about legitimacy of information shared through social media, social media are gaining prominence in

the disaster arena. American Red Cross' (2010) online national survey showed that during an emergency, nearly half would use social media, especially Facebook, to post information about their safety; and approximately 70 percent felt the necessity for emergency responders to monitor social media to respond promptly.

However, very few studies have examined users' information input behavior on social media during company-involved crises, such as posting opinions, commenting on company's responses or other users' statements (e.g., Coombs & Holladay, 2012). More attention should be paid to user-generated content on social media because the content may exert great influence on a company's crisis handling efforts given quick spread of both negative and positive comments on social media, and relatively limited amount of control that a company has over the content.

### **User-Generated Content on Social Media**

User-generated content online, or electronic word-of-mouth (e-WOM), refers to “any positive or negative statement made by potential, actual, or former customers about a product or company, made available to a multitude of people and institutions via the Internet” (Hennig-Thurau, Gwinner, Walsh, & Gremler, 2004, p. 39). Compared to offline WOM, e-WOM travels much quicker (Jurvetson, 2000), reaches beyond local communities, occurs between people who have little or no prior relationship with each other and can be anonymous (Dellarocas, 2003; Goldsmith & Horowitz, 2006). Some studies showed that e-WOM generates greater credibility and more relevant information, and evokes greater interest in company-related topics than the sources of information that companies create on corporate websites (e.g., Bickart & Schindler, 2001). In addition, research suggested that WOM communicating through social networking sites has substantially longer carryover effects than traditional WOM because it is not restricted in space and time, and it can exist for a very long time due to the low cost of storage and posting

(e.g., Gruen, Osmonbekov, & Czaplewski, 2006). Given the powerful effects of e-WOM on publics, it is more challenging for a company to repair damaged image if negative comments were posted on the social networking sites.

### **Influence of User-Generated Content**

As a power medium that “gives power to isolated consumers,” allowing for a “boundless dialogue with a potentially unlimited number of Net users” (Stauss, 1997, p. 28), user-generated content on social media influence a company’s value both directly and indirectly.

User-generated content can influence a company directly by acting as information source for investors to make investment decisions. Research has suggested that the existence of asymmetric information exists between companies and investors in the stock market (e.g., Clarke, Fee, & Thomas, 2004; Healy & Palepu, 2001). Therefore, investors may seek information on a company’s performance from alternative sources in response to specific company-related events. User-generated content on social media provides publics’ personal experience and feedback that may not be evident in companies’ press releases or financial reports. More recently, Tirunillai and Tellis (2012) investigated whether user-generated content is related to a company’s stock market performance. Between 2005 and 2010, by examining 347,628 online reviews on websites (e.g., Amazon Web Services and Epinions.com etc.) across 15 companies and six markets (i.e., cellular phones, data storage, footwear, personal computing, personal digital assistants or smartphones, and toys), the authors found that e-WOM is associated with stock performance and trading volume, and predicts returns and trading volume. Furthermore, the findings of the study revealed that the volume of user-to-user conversations has stronger relationship with returns and trading volume than ratings. Also, the study found that compared with positive user-generated content, negative user-generated content has a stronger effect on returns and trading volume with

a short “wearin” and long “wearout” (Tirunillai & Tellis, 2012). Some studies evidenced the increasing importance of social media as source of information for investors. For example, in a study by Brunswick group, which surveyed over 448 investment personnel (analysts or investors) across the U.S. and Europe, about 43 percent of them suggested that user-generate content has become an important determinant in their investment decisions (Duckworth, Golz, & Trayner, 2009).

User-generated content may also affect a company’s value indirectly by influencing intangible assets such as consumers’ attitudes toward the company and corporate image, which influence consumers’ purchase intentions and the company’s future expected profits. For example, according to a report by Deloitte, two thirds of consumers used consulted opinion sites prior to a product purchase, and over 80 percent of the users considered that consumer-generated reviews to be more valuable than expert reviews, and stated that their purchase decisions were largely affected by the reviews they read (Marketing charts, 2007). Increasing number of studies have confirmed those results. For example, Godes and Mayzlin (2004) noted that measuring the e-WOM generated by a firm’s product is important for understanding a product’s past sales level and for predicting its future sales. In a study about effects of consumer reviews on relative book sales at Amazon.com and Barnesandnoble.com, Chevalier and Mayzlin (2006) found that an improvement in a book’s reviews led to an increase in sales. Similarly, Dellarocas, Zhang and Awad (2007) observed that online review is a good predictor for movie revenues.

User-generated content on social media can play a critical role in the impact of a crisis on a company through the two routes mentioned above. Probably due to the long-existing organization-centered research trend, which focuses on what the organization said, with the assumption that the messages would have the desired effects on stakeholders (Coombs &

Holladay, 2012), stakeholder perspective, which examines how stakeholders perceive the crisis and the company's crisis response, has not received much attention in crisis communication research. It is important to consider both information sender (i.e., company) and information receiver (i.e., Facebook users in current study) to better understand the appropriateness of crisis response. Compared to comments that respondents write on a company's crisis responses in lab environment, Facebook users' comments in real time are more natural, provide larger sample, and thus can better reflect their reactions to a company's crisis responses in real-life context. In terms of BP's case, the following research questions were addressed:

**RQ2:** How did Facebook users comment on BP America's messages on BP America's Facebook page?

**RQ2a:** How did the volume of Facebook users' comments vary over time?

**RQ2b:** How did the degree of congruence between Facebook users' comments and BP America's messages vary over time?

**RQ2c:** How did the degree of congruence between Facebook users' comments and BP America's messages vary by message sources?

**H1:** People were more likely to comment favorably when BP America used accommodative strategies.

**H2:** People were more likely to comment favorably when BP America used bolstering strategies.

## **IMAGE AS A CRISIS COMMUNICATION OUTCOME**

### **Corporate Image**

**Image is a "dual process"**. There are two types of relationships between a company and its stakeholders, which are symbolic relationship (i.e., communication) and behavioral relationship (i.e., the actual interaction) (Grunig, 1993). Symbolic and behavioral relationships are intertwined like strands of a rope in influencing what publics think about a company, or image of the company, which refers to "the perception(s) of a person, group or organization held

by the audience, shaped by the words and actions of that person, as well as by the discourse and behavior of other relevant actors” (Benoit & Hanczor, 1994, p. 40).

The term *image* has been widely used and variously defined. In public relations scholarship, it was defined with more negative connotative meanings, for example, as imitation of reality (Cutlip, 1991), as something that a communicator creates, constructs, and projects to its publics (Grunig, 1993), or as a “total impression” that organizations use organizational communication as actors to create on other people or groups on the stage of society (Goffman, 1974; Infante, Rancer & Womack, 1990, p. 242).

Marketing scholarship defined *image* with more neutral connotation, for example, as reproduction of the thoughts or feelings of the sender in the mind of message receivers (Haberman & Dolphin, 1988), or as a multidimensional construct that describes consumers’ perceptions of both tangible and intangible aspects of a company (Pan & Zinkhan, 2006). In psychology scholarship, the term *image* refers to everything that goes on inside the mind, consisting of four levels at which people process messages: sensory processes (awareness, or sight, sound, taste, touch, and hearing input), perception (paying attention), cognition (the process through which people develop beliefs about what is real or come to understand what they perceive, e.g., attributes, proposition, and mental image), and attitude (evaluations) (Grunig, 1993). More generally, practitioners and scholars use *image* as an umbrella term covering all of the communication activities and their effects on relationships between a company and its publics (Grunig, 1993). For example, Berstein (1984) defined image as an outcome of the interaction of all the experiences, convictions, feelings, and impressions that publics have toward a certain organization. Similarly, Marken (1990) defined image as an individual’s overall

perception of an organization's products, services, management style, communication efforts, and global activities.

Scholars have started to look deep into the composition of image, suggesting a necessity to distinguish between concepts of image as a message produced by the organization, and image as something constructed by receivers of the message (Grunig, 1993; Kotler, 1991). Botan (1993) identified two levels of image in public relations. The first level is "*i image*" or instrumental view of image, in which image means a manipulative representation of the reality (Botan, 1993). With this approach, a company tries to manage image with press releases and other one-way communication efforts to make the company look good regardless of their actual conduct. The second is "*h images*", which views image from more humanitarian perspective. This level of image is also termed as the audience-centered perspective of corporate image (Cheney, 1991), where the real image-makers are the publics rather than the company, and a company's image lies on publics' "subjective knowledge structures", or individual's personal understanding and interpretations of the messages received (Boulding, 1977, p. 11). Different publics may have varied interpretations of corporate image beyond those that the company had provided. More recently, Decaudlin, Igalens, and Waller (2006) identified a new level of image: desired image, which is composed of three levels: 1) *desired image*: which is about what the organization wants to send to its publics; 2) *transmitted picture*: which is about the way that an organization presents itself to its publics; at this level, the desired image is translated in various messages depending on communication technique; and 3) *perceived image*: which is what the publics have about the organization after receiving the messages conveyed by the organization (Coman & Păun, 2010).

In brief words, image is a result of "a dual process" (William & Moffitt, 1997, p. 239), which involves interplay between a company's projected image (organizational product) and the

company's publics' consumption of that image (audience-determined construct) (Wan & Shell, 2007). Therefore, image is not something that companies can create or manage (Bromley, 1993; Grunig & Hung, 2002). The only way that public relations professionals can "manage" corporate image is to participate in managing the behaviors of companies and to manage communication with publics in order to cultivate relationships with them (Grunig, 2009).

**Image and reputation.** Apart from defining image, scholars have also compared the term *image* with *reputation*, which are often interchangeably used. Some scholars have emphasized the association of corporate image with corporate reputation (e.g., Bromley, 2000; Caruana & Chircop, 2000). For example, Caruana and Chircop (2000, p. 43) reviewed literature about reputation and suggested "research on corporate reputation is rooted in earlier work on corporate image, corporate identity, and personality...corporate reputation emerges from the images held by various publics of an organization" (cited in Yang & Grunig, 2005).

Others have differentiated the term *image* and *reputation*. One point of view is that reputation is aggregate perceptions. For example, Fombrun, the founder of the Reputation Institute, pointed out that a company may have many different images, but only one reputation, and a corporate reputation signals the overall attractiveness of the company to all of its publics, including consumers, employees, investors, reporters, and the general publics (Yang & Grunig, 2005). The other point of view is that image is "the immediate perception of an organization, and reputation is the historic and cultural dimension of that image" (Sherman, 1999, p. 11). Grunig (1993) suggested that people store their accumulated cognitions and attitudes in long-term memory and retrieve them when they think about an organization under a certain situation. Grunig (1993) also indicated that a reputation has a long life, thus it is better to earn good reputation early because it is difficult to replace an existing reputation with a new one.

Corporate image, on the other hand, is a snapshot view of a corporate reputation at any single point in time, but has the capacity to contribute to an individual's lasting experience and true understanding of a corporation over time (Alvesson, 1990). In this sense, corporate image is less stable than reputation, and is more amenable to change (Stuart, 1999). As argued by Gray and Balmer (1998), compared to reputation, which is historically constructed through consistent performance, image is usually constructed more quickly through strategic communication messages (cited in Brown, 2012).

### **Image in Crisis Communication and Image Congruence**

Crises are a major threat to a company's image (e.g., Benoit, 1995, 1997; Coombs, 1995, 1999, 2012). Therefore, whether the damaged image is fixed is featured as the essence of effective crisis response (Coombs, 2012). Effective crisis communication minimizes the damage of a crisis on the image and sets foundation for repairing the damage, while ineffective crisis communication intensifies the damage inflicted on the company's image.

As what was mentioned before, corporate image is a dual process, which involves corporate projected image and publics' perceived image. A company's projected image is also known as instrumental image, which is the symbolic representation of the company's personality or character that is portrayed to the publics (Wan & Shell, 2007). Publics' perceived image, or sense image, is individual's personal understanding and interpretations of the company-related information (Wan & Shell, 2007). Companies are striving for good image, but whether a company could get rewards for the efforts largely depends on whether the publics could form the impression of the company as the company desires. Studies have revealed that the congruence between the two levels of image may exert an impact on publics' beliefs, attitudes, and behavioral intentions toward the company. For example, Wan and Shell (2007) found that the

image congruence could maintain public approval when there was no crisis. They also found that image congruence may also protect the company during a crisis because people tend to maintain loyalty and behave consistently toward the company as long as they have formed a good impression of the company before the crisis.

However, publics' perceived image of a company is not necessarily consistent with the company's projected image. Gap may exist between the two levels of image. One of the possible reasons is different information sources for image formation. A company's projected image is usually reflected in the deeds and words of the company. This means, a company's image can be influenced, threatened or even damaged by the company's communication messages. It also means that a company whose image has been threatened or tarnished (e.g., in a crisis) can use communication to repair it. Publics' perceived image of a company is formed through one's experience with the company, for example, what one person has seen, heard, and read about the company (Benoit & Pang, 2007).

There are two major sources from which publics retrieve information to form their perceptions of a company. The first source is the company's words and deeds, or an individual's direct experience with the company. The second source is what other people do with and say about the company, or an individual's indirect experience with the company. In this sense, the congruence between a person's perceived image of a company and the company's projected image relies on the congruence between others' comments about the company and the company's communication messages.

Deepwater Horizon oil spill was preventable. Coombs (2007) suggests that people attribute strong crisis responsibility to a preventable crisis, and accommodative strategies (e.g., rebuilding strategies) should be used for this type of crisis to repair the company's image. Therefore, BP

may project a positive image if it uses accommodative strategies (e.g., taking responsibility, showing concerns, and informing stakeholders of the actions taken to prevent the reoccurrence of the crisis etc.), and may have a negative image if it uses defensive strategies (e.g., denial the responsibility for the incident, and minimizing the damage of the crisis, etc.). Facebook users' comments may enhance BP's positive image when the comments are favorable for BP (e.g., praising BP's crisis management efforts), or enhance BP's negative image when the comments are against BP (e.g., blaming BP). Thus, this study posits:

**H3:** The congruence between Facebook users' comments and BP America's messages will positively influence people's perceived image of BP America.

People's consumption of corporate image may influence their attitudes and feelings toward the company, and those attitudes, in turn, predict behavioral intentions such as recommendation intentions and purchase intentions (Kennedy, 1977; Werder, 2008). For example, Creyer and Ross (1997) found that if consumers feel favorably toward social responsible companies, they remember those companies and will be likely to purchase products and services from them. Similarly, Branco and Rodrigues (2006) stated that a company can attain better financial performance with favorable image because the image is one of the primary criteria for the consumers who have not used the company's products to decide whether they want to buy a product or not. It is more likely that consumers will choose products from a company with a better image. In a crisis case, people who hold a positive image of a company are more likely to support the company, to value the company's crisis management efforts, and to continue to be loyal consumers. In contrast, negative image such as being socially irresponsible, may result in financial problems. Thus, this study proposes the following hypothesis:

**H4:** People's perceived image of BP America will positively influence their behavioral intentions

toward BP America.

### **Attribution Theory**

Viewing people as naïve scientists who carefully gather data to make explanations, the attribution theory seeks to understand the cognitive process by which individuals make causal explanations about behaviors and events in the observed world (Folkes, 1988; Heider, 1958; Jones & Davis, 1965; Kelley, 1973; Weiner, 1992). The attribution theory is not a single theory, but a set of theories in the field of causal attribution.

Attribution theory can be divided into three foci: person-perception, self-perception, and object-perception. Person-perception related attribution theory focuses on how individuals attempt to understand their environment by viewing and interpreting behaviors of others (Heider, 1958; Jones & Davis, 1965; Kelley, 1967). Self-perception related attribution theory focuses on how individuals judge their own attitudes and beliefs by observing their own behaviors and the conditions under which the behaviors occur (Bem, 1967; Kelley, 1967). Kelly's (1967, 1973) attribution theory, which focuses on object-perception, is derived from the works of Heider (1958), Jones and Davis (1965) and Bem (1967), and explains how individuals find reasons for behaviors and events. Kelly's attribution theory is widely applied in consumer behavior research.

According to Kelly (1973), the attributional process is distinguished in terms of the amount of information available for the person who makes the attribution: 1) information from multiple observations at various times and under various situations (i.e., covariation principle), and 2) information from only a single observation at a given time (i.e., configuration principle).

When individual makes an attribution based on multiple observations, he or she tends to evaluate whether the impression reflects the inherent properties of the event rather than environmental influences base on four criteria: 1) distinctiveness: the effect that is attributed to

the event only occurs when the entity (e.g., event, behavior, subject, etc.) is present and does not occur when the event is absent; 2) consistency over time: the individual's reactions are same every time the entity is present; 3) consistency over circumstance: the reactions are same even though the conditions vary; and 4) consensus: all observers perceive the actions or their effects in the same way (Mizerski, Golden, & Kernan, 1979). For example, if a car functions well over time (consistency over time), with different types of gas, and for both local and long-distance trips (consistency over circumstances), and receives positive reviews from friends and family (consensus), then the consumer can make an assertion that the car has good quality. As Kelley (1967) proposes, with increasing degree that a person's attributions fulfill these criteria, the person feels more confident that he or she has had a true picture of the external world, and thus can make judgment quickly and with subjective confidence; whereas, if a person's attributions do not satisfy the criteria, the person may be uncertain in own views and hesitant in actions.

The current study investigates the effects of BP's post-crisis communication. Because it is about post-crisis communication, a majority of publics have already gotten information about the crisis from various sources (e.g., news articles on both traditional media and new media, and offline WOM, etc.) and have formed perceptions of BP. The perceptions may be negative due to the extensive damage the oil spill causes to human life and environment (especially when the consumers themselves are victims of the crisis), and BP's early crisis communication strategies (e.g., Tony Hayward, the former chief executive of BP, attempted to shift the blame for the spill to the U.S. owner of the sunken rig, Transocean) (Webb, 2010). The perceptions may be positive if consumers, in particularly, those who are loyal consumers of BP, thought that BP's later crisis communication strategies showed its responsibility for the crisis (e.g., making apologies, offering compensation, and informing publics of the company's activities, etc.).

People's preexisting attitudes toward BP may influence the effects of BP's post-crisis communication on their perceived image of BP. According to Kelly's (1973) covariation principle of the attribution theory, if BP's messages are congruent with Facebook users' messages, and both of the two types of information is consistent with an individual's prior perception of BP, then the person's prior perception of BP may be intensified and the person can make a judgment about BP with more confidence. Thus, this study posits that:

**H5a:** People's prior attitudes toward BP America will be improved when Facebook users' comments are congruent with BP America's messages.

**H5b:** People's prior attitudes toward BP America will be mitigated when Facebook users' comments are incongruent with BP America's messages.

### **Social Identity Theory**

Other than attribution of motives behind messages, another potential factor influencing how people process information is their identification with the message writers (i.e., BP and Facebook users in the current study). Social identity theory was used to examine the factor.

Social identity theory is a social psychological theory of intergroup relations, group processes, and the social self (Hogg, Terry, & White, 1995). According to social identity theory, people tend to classify themselves and others into various social categories, such as organizational membership, religious affiliation, nationality, gender, ethnicity, age cohort and so forth (Tajfel & Turner, 1985). The process of social identification is the process of self-definition, in which a person defines him- or herself as well as others in terms of the characteristics of the social category or group that he or she feels belongs to. Social identity theory views individuals or the concept of "self" as a combination of multiple identities, and the identities have different degrees of relative importance or salience in guiding how an individual thinks, feels, and behaves

(Hogg, et al., 1995). For example, a woman can be a mother, a consumer, a writer, an employee, and an environmentalist. Among a person's various identities, specific identity may become salient in a particular context (Hogg, et al., 1995). For example, a person's identity as a consumer may be salient when she shops or participates in discussions in online brand communities. Similarly, her identity as a mother may be more salient when she comes back to home from work. In brief words, social identification helps answer the question: Who am I? (Ashforth & Mael, 1989).

Research has indicated that members of the same group generally tend to favorably evaluate each other (Hogg & Hains, 1996; Hogg, Shaw, & Holzworth, 1993). According to social identity theory, an individual classifies self and others into groups based on the perceived similarity between group members (including oneself) and the features of the group in a particular context, known as group prototype (Hogg, et al., 1993). Because group prototype is shared among group members, it identifies group norms. Since members in a group are supposed to perceive and evaluate themselves and other group members in terms of group norms, and also behave in line with the norms (Hogg, et al., 1993), they are likely to perceive similarities among them, and thus have positive attitude toward each other. For example, one consumer may assume the other consumers share the same interest with him-or herself, thus is more likely to be influenced by the other consumers' messages. Based on the analysis, this study posits that:

**H6:** High identification will lead to higher perceived credibility on Facebook users' comments.

**H7:** People's perceived credibility of messages will positively influence their perceived image of BP America.

## CHAPTER 3

### METHOD

Based on the preceding review of literature, the following research questions and hypotheses were proposed:

**RQ1: How did BP America communicate with publics on Facebook during the oil spill crisis in 2010?**

RQ1a: What was BP America's dominant crisis communication strategy?

RQ1b: How did BP America's crisis communication strategies vary over time?

RQ1c: How did accommodation levels of BP America's messages vary by message sources?

**RQ2: How did Facebook users comment on BP America's messages on BP America's Facebook page?**

RQ2a: How did the volume of Facebook users' comments vary over time?

RQ2b: How did the degree of congruence between Facebook users' comments and BP America's messages vary over time?

RQ2c: How did the degree of congruence between Facebook users' comments and BP America's messages vary by message sources?

H1: People were more likely to comment favorably when BP America used accommodative strategies.

H2: People were more likely to comment favorably when BP America used bolstering strategies.

**RQ3: How did BP America's messages and Facebook users' comments on BP America's Facebook page influence people's perceived image of BP America?**

H3: The congruence between Facebook users' comments and BP America's messages will positively influence people's perceived image of BP America.

H4: People's perceived image of BP America will positively influence their behavioral intentions toward BP America.

H5a: People's prior attitudes toward BP America will be improved when Facebook users' comments are congruent with BP America's messages.

H5b: People's prior attitudes toward BP America will be mitigated when Facebook users' comments are incongruent with BP America's messages.

H6: High identification will lead to higher perceived credibility on Facebook users' comments.

H7: People's perceived credibility of messages will positively influence their perceived image of BP America.

To answer the research questions and test the hypotheses mentioned above, this study used a blend of quantitative content analysis and experimental methods to explore BP's crisis communication on Facebook during the Deepwater Horizon oil spill.

### **Content Analysis**

Content analysis was used to answer RQ1 about how BP communicated with its publics on Facebook during the oil spill crisis in 2010, and RQ2 about how Facebook users commented on BP's crisis communication messages on BP's Facebook page. Four approaches are frequently used to analyze a case: documentary analysis, in-depth interview, field observation, and artifacts analysis (Wimmer & Dominick, 2013). This study applied documentary analysis. Compared with other data sources (i.e., in-depth interview, field observation, and artifacts), documents have four advantages: (1) being stable: can be viewed repeatedly; (2) being unobtrusive: not created as a result of the case study; (3) being exact: contains exact names, references and details of an event; and (4) have broad coverage: long span of time, events and settings (Yin, 2003). A document is "any symbolic representation that can be recorded or retrieved for analysis" (Altheide, 1996, p. 2). Documents may take the forms of newspapers, magazines, TV newscasts, published reports, field notes or letters (Altheide, 1996). In this study, the researcher defined document as Facebook and analyzed messages posted by BP and comments posted by Facebook users on BP America's Facebook page.

**Sampling.** BP crisis began on April 20, 2010 when the Deepwater Horizon drilling rig exploded and released crude oil into the Gulf of Mexico, and ended on January 5, 2011 when the White House oil spill commission concluded that the oil spill was the result of systematic management failure between BP, Transocean, and Halliburton (Goldenberg, 2011). Therefore, the time frame of data collection is from April 20, 2010 to January 5, 2011.

BP's messages and Facebook users' comments were retrieved from BP America's Facebook page.<sup>4</sup> There are many BP-related Facebook pages, for example, "BP oil news" (providing independent reporting on the Gulf oil spill), "BP oil spill claim 504-345-8Oil" (for those who lost money or lost job due to the spill to claim for lost income), "The BP Gulf oil spill 2010", "Make BP responsible for the Gulf Coast oil spill", "Against BP Oil" and so on. Most of the Facebook pages were created by general publics, thus, those pages may be useful for exploring people's responses and attitudes toward the crisis, but may be little helpful for analyzing the communication between BP and its publics because most of the BP-related Facebook pages are anti-BP and BP barely comments on those pages.

This study chose "BP America" Facebook page for data collection because of several reasons. First, this page focuses on BP's communication with its publics in the U.S. market, where the crisis occurred. Compared to "BP" Facebook page (the Facebook page of BP plc), whose focus is the international market of BP, with headquarter in London, UK, "BP America" is better fit for the research purpose of the present study. Second, among all Facebook pages regarding the oil spill crisis, "BP America" page has the most "likes" (961,913 "likes") and members (500,000 members). That suggests the page attracts most attention from publics. Therefore, it is reasonable to analyze BP America's Facebook page for both BP's crisis

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<sup>4</sup> The web link of BP America's Facebook page is [https://www.facebook.com/BPAmerica?ref=br\\_tf](https://www.facebook.com/BPAmerica?ref=br_tf)

communication strategies and publics' responses to BP. All information on BP America's Facebook page posted between April 20, 2010 and January 5, 2011 were saved as PDF documents. It yielded 7,286 pages of material. A total of 3,497 Facebook messages were coded. Many of the messages include a hyperlink to another webpage, an online video, a news article, a press release, or a government report. The content of each message and the content linked to the message were coded to show the complete picture of BP's use of Facebook in its crisis response. In terms of Facebook users' comments posted during the time frame ( $n = 180,605$ ), only the comments that were responses to BP's messages ( $n = 16,551$ ) were coded. The comments responding to other people's comments were excluded from the data set because this study intends to examine online comments that were reactions to BP's messages.

**Measures.** A coding sheet was designed to capture the variables under investigation. Using a message posted by BP as the coding unit, each message was coded based on: 1) general information of messages, 2) BP's crisis communication strategies, and 3) level of accommodation of BP's crisis communication strategies. Using a comment posted by Facebook users as the coding unit, each comment was coded for degree of congruence between the comment and BP's message.

(1) *General information of messages*: For general information of BP's messages on the Facebook page, each message was coded based on: 1) the posting date, 2) volume of "likes", 3) volume of comments, 4) volume of shares, 5) the message type (i.e., wall post, event post, note post, and hyperlink to other information),<sup>5</sup> 6) source of links (i.e., news media outlets, social media sites, corporate affiliated/managed websites, and government operated websites), and 7) social media (i.e., Facebook, YouTube, Twitter, Flickr, and blog).

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<sup>5</sup> Event posts are posts started with "BP America shared an event," note posts are posts started with "BP America shared a note," posts with hyperlinks are posts started with "BP America shared a link," and wall posts are posts without special explanations.

(2) *BP's crisis communication strategies*: The researcher coded the crisis communication strategies used in each message posted by BP according to two categories of strategies: information giving strategies, and image repair strategies (Coombs, 2007). Information giving strategies include providing instructing information, and adjusting information. Instructing information and adjusting information are the foundation for any crisis response (Coombs, 2007), but they have been relatively neglected in crisis communication literature. Instructing information tells stakeholders how the crisis will or might affect them, and what to do to protect them physically and financially in the crisis (Coombs, 2007). Adjusting information helps reduce stakeholders' psychological stress about the crisis by keeping stakeholders updated on crisis-related information (Coombs, 2007).

Image repair strategies help the organization manage its image. This study analyzed BP's messages using the four response clusters (including ten crisis communication strategies) in Coombs' SCCT: 1) denial cluster (attacking the accuser, denial, and scapegoating), 2) diminishment cluster (excuse, and justification), 3) rebuilding cluster (compensation, and apology), and 4) bolstering cluster (reminder, ingratiation, and victimage) (Coombs, 2007). In addition to the ten strategies, "rectification" (Holladay, 2012) and "regret" (Coombs, 2006) were added to the rebuilding cluster, and "endorsement of outside experts" (Coombs, 1999), and "concern" (Coombs, 2006) were added to the bolstering cluster. The original "Justification" in SCCT was divided into "minimization" and "justification" (Walton, Cooley, & Nicholson, 2012). "Minimization" remained in the diminishment cluster, and "justification" was added to the bolstering cluster. Please see Table 1 for the operational definition of each crisis communication strategy.

“Rectification” and “regret” were added to rebuilding cluster because the strategies are used to improve the image of the organization, which matches the purpose of rebuilding cluster. “Endorsement of outside experts”, “concern”, and “justification” were added to the bolstering cluster because the strategies attempt to add positive information to the organization, as other strategies in the bolstering cluster.

**TABLE 1**  
**Crisis communication strategies (Coombs, 1999, 2006, 2007; Holladay, 2012)**

<b>Information Giving Strategies</b>		
<b>Instructing information</b> <i>(To tell people what to do to protect themselves physically and financially)</i>		The organization tells its publics what to do to protect themselves physically and financially in the crisis.
<b>Adjusting information</b> <i>(to help people cope psychologically with the crisis)</i>		The organization tells its publics who, what, where, when about the crisis.
<b>Image Repair Strategies</b>		
<b>Denial Cluster</b> <i>(To prove the organization has no responsibility for the crisis)</i>	Attacking	The organization confronts the person or group that claims that a crisis exists.
	Denial	The organization states that no crisis exists.
	Scapegoating	The organization blames some other person or group outside of the organization for the crisis
<b>Diminishment Cluster</b> <i>(To reduce the organization’s crisis responsibility)</i>	Excusing	The organization tries to minimize its responsibility for the crisis. The response can include denying any intention to do harm or claiming that the organization had no control of the events that led to the crisis.
	Minimization	The organization tries to minimize the perceived damage associated with the crisis. The response can include stating that there were no serious damages or injuries.
<b>Rebuilding Cluster</b> <i>(To improve the organization’s reputation after it admits responsibility)</i>	Compensation	The organization offers money or other gifts to the victims.
	Rectification	The organization says that it is taking actions to solve the crisis and prevent the repeat of the crisis.
	Regret	The organization feels bad about the crisis.
	Apology	The organization publicly states that it takes full responsibility for the crisis and asks for forgiveness.
<b>Bolstering Cluster</b> <i>(To add positive information about the organization and to build a positive connection between the organization and its publics)</i>	Reminding	The organization reminds its publics of its good works.
	Ingratiation	The organization praises publics.
	Victimage	The organization explains how it too is a victim of the crisis.
	Concern	The organization expresses concern for the victims, and addresses publics’ concerns

	Justification	The organization explains reasons for its response.
	Endorsement of outside experts	The organization reports positive reviews from third parties.

(3) *Level of accommodation of BP's crisis communication strategies*: Each of BP's messages may use more than one communication strategy, and each strategy has its level of accommodation. A defensive strategy is defined as a strategy that tries to defend and protect the organization's interests or reduce the organization's responsibility for the crisis, while an accommodative strategy is defined as a strategy that attempts to help the crisis victims and stakeholders (Coombs, 2007). Coombs (1998) chooses seven most commonly used strategies by organizations when facing with reputation-threaten events, and puts the seven strategies on a continuum from defensive to accommodative in the following order: attacking accuser, denial, excuse, justification, ingratiation, corrective actions (rectification), and apology. Coombs' (1999) continuum was revised and applied to the current study to measure the level of accommodation of BP's crisis communication strategies.

The level of accommodation of each strategy used by BP was coded based on a 5-point Likert scale, ranging from "1" representing "very defensive" to "5" representing "very accommodative". The researcher rated denial strategies as very defensive strategy (scale = 1), rated diminishment strategies as defensive strategies (scale = 2) because denial and diminishment strategies are used to protect BP's interests by either removing any connection between BP and the crisis or distancing BP from crisis responsibility. Bolstering strategies were rated as accommodative strategies (scale = 4). Rebuilding strategies were rated as very accommodative strategies (scale = 5) because bolstering and rebuilding strategies seek to improve publics' perceptions of BP by showing concerns to publics' interests. Information giving strategies (i.e., instructing information, and adjusting information) were rated as neutral strategies (scale = 3)

because information-giving strategies focus on crisis-related information updates. Please see table 2 for the level of accommodation of each strategy.

**TABLE 2**  
**Level of accommodation of crisis communication strategies**

<b>Level of Accommodation (scale)</b>	<b>Cluster</b>	<b>Strategy</b>
Very defensive (1)	Denial cluster	Attacking Denial Scapegoating
Defensive (2)	Diminishment cluster	Excusing Minimization
Neutral (3)	Information giving strategies	Instructing information Adjusting information
Accommodative (4)	Bolstering cluster	Reminding Ingratiation Victimage Concern Justification Endorsement of outside experts
Very accommodative (5)	Rebuilding cluster	Compensation Rectification Regret Apology

(4) *Degree of congruence between Facebook users' comments and BP's messages*: The researcher coded the degree of congruence between each Facebook users' comment and BP's message based on a 3-point scale ranging from "-1" being incongruent, "0" being neutral, to "1" being congruent. In this study, a comment that is congruent with the corresponding BP's message is defined as a comment that agrees with the statement in BP's message. A comment that is incongruent with the corresponding BP's message is defined as a comment that disagrees with the statement made in the BP's message.

This scale was used with three reasons. First, 3-point scale is appropriate when it is difficult to distinguish the messages coded according to a Likert scale with larger number of scale points (e.g., 5-point, or 7-point scales) (Jacoby & Matell, 1971). For example, in this study,

there are no unquestionable criteria for distinguishing very positive comments with somewhat positive comments, or very negative comments with somewhat negative comments. Second, using 3-point scale does not affect the reliability and validity of the results (Jacoby & Matell, 1971). Though a 5-point or 7-point scale may provide more variations, research has shown that the scores obtained with Likert-scales represent primarily the directional component rather than the intensity component of the data set (Cronbach, 1950; Peabody, 1962). Both reliability and validity are independent of the number of scale points used for Likert-type items (Jacoby & Matell, 1971). Third, the researcher is interested in average degree of congruence between Facebook users' comments and BP's messages<sup>6</sup> and 3-point scale is good enough in this case (Lehmann & Hulbert, 1972).

**Inter-coder reliability.** Including the researcher, three coders were trained. To test the inter-coder reliability, the researcher and one of the other two coders coded approximately 12 percent of BP's messages ( $n = 433$ ), and the researcher and another coder coded approximately nine percent of Facebook users' comments ( $n = 1,436$ ). The Krippendorff's (2004) alpha was calculated for variables that might have involved judgment-coding inter-coding. The coefficient was .80 for SCCT strategy (information giving strategy, or image repair strategy), .76 for information giving strategy (instructing or adjusting information), .88 for instructing information, .78 for adjusting information, .82 for image repair strategy (denial, diminishment, rebuilding, or bolstering cluster), .85 for denial cluster, .84 for diminishment cluster, .87 for rebuilding cluster, .82 for bolstering cluster, .85 for level of accommodation of BP's message, and .82 for degree of congruence between BP's message and Facebook users' comments. All coefficients are within acceptable limits.

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<sup>6</sup> In this study, average degree of congruence between a message posted by BP and Facebook users' comments following the message was calculated by dividing the sum of congruence values of the comments following the message by the number of comments following the message.

## Experiment

This study used an experiment to answer RQ3 about the effects of BP's messages and Facebook users' comments on BP America's Facebook page on publics' perceptions of BP. In public relations, compared to other research methods (e.g., content analyses, case studies, and surveys), experiments are used much less frequently. Ye and Ki's (2012) analysis of Internet-related public relations articles published between 1992 and 2009 revealed that only 8.7 percent of analyzed articles used experiments. Despite the small number of studies using experiments, the number has been increased in past decade (Ye & Ki, 2012). The main reason for the growing attention paid to experiments might be that experiments are the best social science research method for establishing cause-and-effect link between two variables (Priest, 2005; Stacks, 2002; Wimmer & Dominick, 2013), or in other words, to measure whether the change in independent variable(s) actually leads the change in dependent variable(s). As Stacks (2002) explains, "experimental designs allow the researcher the control necessary to precisely specify and manipulate the source or message characteristics he or she is interested in comparing" (p. 265). By controlling the level of accommodation of BP's messages and congruence between Facebook users' comments and BP's messages, this study attempted to measure the effect of the combined messages on people's perceived image of BP.

**Experimental design.** A 2x2 between-subjects experimental design was carried out. The two independent variables are 1) level of accommodation of BP's messages (defensive vs. accommodative), and 2) information congruence: congruence between BP's message and following Facebook users' comments, or whether users agree or disagree with BP (congruence vs. incongruence). Four versions of BP Facebook page were created, which include 1) one page consisting of BP's defensive message, which is followed by Facebook users' comments that are

congruent with BP's message; 2) one page consisting of BP's defensive message, and Facebook users' comments that are incongruent with the message; 3) one page consisting of BP's accommodative message, followed by congruent comments; and 4) one page consisting of BP's accommodative message, followed by incongruent comments. Among the four versions of BP's Facebook pages, Facebook users' comments are congruent with BP's messages in version #1 and #3 (information congruence), and Facebook users' comments are incongruent with BP's messages in version #2 and #4 (information incongruence).

**Stimuli.** Four BP Facebook pages were designed based on the four categories of stimuli. Each page is consisted of one piece of message posted by BP, followed by ten pieces of comments written by Facebook users. All the messages and comments used in the experiment were revised from the messages and comments posted on BP America's Facebook page.

*Message selection.* In the first part of this study, the level of accommodation of BP's messages has been analyzed based on a 5-point scale, and the congruence between Facebook users' comments and BP's messages has been analyzed based on a 3-point scale (please see "content analysis" section for details). The researcher selected one defensive message from messages using denial strategy, which are rated as "very defensive", and selected one accommodative message from messages using apology strategy, which are rated as "very accommodative". Congruent comments were chosen from the comments rated as "1", and incongruent comments were chosen from the comments rated as "-1".

*Manipulation test.* After the design of the four Facebook pages was finished, the researcher conducted a pretest among 60 undergraduate students to test if the manipulations of level of accommodation of BP's messages, and congruence between BP's message and Facebook users' comments are effective. The 60 students are similar in age to those students who

participated in the experiment. Thirty of the students were exposed to the accommodative strategy, and the other 30 were presented with the defensive strategy. Within each group of thirty students, each subgroup of 15 students read one of two versions of comments. They were asked to rate the level of accommodation of BP's messages with a 7-point scale with "1" being defensive, and "7" being accommodative. They were also asked to rate whether each of the ten comments agrees or disagrees with the BP's message using a 7-point scale with "1" being strongly disagree, and "7" being strongly agree. Then the mean accommodation levels of BP's messages, and the mean agreement levels on degree of Facebook users' comments in each experimental condition were calculated.

The manipulation was successful. The levels of accommodation of two versions of BP's messages significantly differed ( $M_{\text{accommodative}} = 5.57$ ,  $M_{\text{defensive}} = 2.97$ ,  $t(58) = 10.041$ ,  $p < .001$ ). Regarding the Facebook page with defensive message, the average congruence levels of the two versions of comments significantly differed ( $M_{\text{congruent}} = 5.78$ ,  $M_{\text{incongruent}} = 1.53$ ,  $t(28) = 20.786$ ,  $p < .001$ ). The congruence levels of the two versions of comments on the accommodative message also significantly differed ( $M_{\text{congruent}} = 5.89$ ,  $M_{\text{incongruent}} = 1.79$ ,  $t(28) = 21.167$ ,  $p < .001$ ). Therefore, the materials were used without change.

### **Intervening variables.**

*Prior attitude (attitude before reading experimental materials).* Participants' prior attitudes toward BP were measured with four 7-point semantic scales, including "dislike/like", "negative/positive", "unfavorable/favorable", and "bad/good" (Holbrook & Batra, 1987) ( $\alpha = .978$ )<sup>7</sup>.

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<sup>7</sup> All scales used to measure dependent variables and intervening variables were tested for reliability using Cronbach's alpha. All scales were considered reliable with alpha values greater than .70.

*Social identification.* Participants' level of social identification was measured with five items on a 7-point scale ranging from "1" (strongly disagree) to "7" (strongly agree). The five items were selected from Cameron's (2004) social identity scale. The five items are: 1) "I have a lot in common with other Facebook users," 2) "I feel strong ties to other Facebook users," 3) "I find it difficult to form a bond with other Facebook users," 4) "I don't feel a sense of being 'connected' with other Facebook users," and 5) "I feel I belong to the group of Facebook users" ( $\alpha = .747$ ).

### **Dependent variables.**

*Perceived credibility of information.* Perceived credibility of BP's messages ( $\alpha = .951$ ) and perceived credibility of Facebook users' comments ( $\alpha = .901$ ) were measured with five 7-point semantic scales developed by Tuppen (1974). The five items are "untrustworthy/trustworthy", "dishonest/honest", "unreliable/reliable", "irresponsible/responsible", and "insincere/sincere".

*Corporate image.* Perceived image of BP was measured using ten items from Coombs and Holladay's (1996, 2001) organizational image scale. The ten items include: 1) "BP is basically honest," 2) "BP is a reputable organization," 3) "BP is concerned with the well-being of its publics," 4) "I do not trust BP to tell the truth about the incident," 5) "I would prefer to have nothing at all to do with BP," 6) "Under most circumstances, I would be likely to believe what BP says," 7) "BP is basically dishonest," 8) "The reputation of BP is low," 9) "BP is not concerned with the well-being of its publics," and 10) "The image of BP is good" ( $\alpha = .885$ ). Participants were asked to rate the degree to which they agree with the statements. All responses were measured with a 7-point scale, ranging from 1 (strongly disagree) to 7 (strongly agree).

*Post attitude (attitude after reading experimental materials).* Participants' attitudes toward BP were measured with four 7-point semantic scales, including "dislike/like",

“negative/positive”, “unfavorable/favorable”, and “bad/good” (Holbrook & Batra, 1987) ( $\alpha = .976$ ).

*Behavioral intentions.* Participants’ behavioral intentions were measured with 13 items. Behavior intentions include BP’s Facebook page engagement intentions (4 items,  $\alpha = .898$ ), product/service purchase intentions (5 items,  $\alpha = .971$ ), and WOM intentions (4 items,  $\alpha = .957$ ). For Facebook page engagement intentions, participants were asked to respond to four items adapted from Lee, Kim, and Kim’s (2011) study. The items asked participants to indicate how likely or unlikely they would: 1) visit BP’s Facebook page, 2) comment on BP’s messages, 3) respond to others’ comments on BP’s Facebook page, and 4) seek more information about BP on other social media used by BP (e.g., Twitter). Purchase intentions were measured with five 7-point semantic scales adapted from Spears and Singh’s (2004) research, including “never/definitely,” “definitely do not intend to buy/ definitely intend to buy,” “very low/high purchase interest,” “definitely not buy it/definitely buy it,” and “probably not/probably buy it.” Four items were adapted from the positive WOM dimension of Goyette, Ricard, Bergeron, and Marticotte’s (2010) e-WOM scale to measure participants’ WOM intentions. The four items asked participants how likely or unlikely they would 1) say positive things about BP to others, 2) speak of BP’s good sides, 3) recommend others buy products from BP, and 4) be proud to say to others that he/she is BP’s customer. All items were rated on a 7-point scale.

**Procedure.** The researcher added the study to the College and Communication and Information Sciences Participant Pool at the University of Alabama. Qualtrics was used in data collection. Participants were guided to visit the website hosting the study by following the link provided in the pool. After they read the introduction of the study and agreed to participate, they were randomly assigned to one of the four experimental conditions with the help of random

assignment feature of the website hosting the study. Right after having read the messages on the page, participants were asked to fill out a series of questions.

This study used online experiment because the focus of this study is the influence of information on Facebook on people's perceived image of an organization-in-crisis, it is more natural to conduct the experiment in online setting than in lab. In an online experiment, participants may feel more ease without the presence of a researcher, and thus provide a more accurate picture of their thoughts and behavior under such conditions. As Smith (1997) argued, online methods provide "arguably more candid and extensive response quality" (p. 1). Research has shown that online methods are more commonly employed than offline methods for data collection in social media research (Khang, Ki, & Ye, 2012).

**Participants.** A total of 165 undergraduate students completed the questionnaires ( $n = 49$ , 29.7% for freshmen;  $n = 69$ , 41.8% for sophomores;  $n = 34$ , 20.6% for juniors, and  $n = 13$ , 7.9% for seniors). Students who participated in the study received extra credit for their participation. The sample sizes of the four experimental conditions were 45, 44, 36, and 40 respectively.

Among the 165 participants, 103 are females (62.4%) and 62 are males (37.6%). The mean age of participants was 20.02 years ( $SD = 1.364$ ). The female skewed sample may be attributable to the major of the respondents. The sample was drawn from the communication college, and the annual survey of *Journalism and Mass Communication* reported that women make up nearly two-thirds of those enrolled in journalism and mass communication bachelor's degree programs across the United States (Vlad, Becker, Kazragis, Toledo, & Desnoes, 2010). Therefore, the proportion of the sample for this study may be similar to a national population.

Of the 165 respondents, 162 use social media (98.2%), with a clear preference for Twitter ( $n = 68$ , 41.2%), followed by Facebook ( $n = 60$ , 36.4%), Instagram ( $n = 17$ , 10.3%), YouTube ( $n$

= 9, 5.5%), Pinterest ( $n = 3$ , 1.8%), LinkedIn ( $n = 2$ , 1.2%), Reddit ( $n = 2$ , 1.2%), and Tumblr ( $n = 2$ , 1.2%). In terms of amount of time spent on social media per day, a majority (65.4%) of the 162 participants spent more than one hour ( $n = 40$ , 24.7% for 1-2 hours;  $n = 38$ , 23.5% for 2-3 hours; and  $n = 28$ , 17.3% for over 3 hours), 19.8 percent spent 0.5-1 hour ( $n = 32$ ), 11.7 percent spent 10 to 30 minutes ( $n = 19$ ), and only 3.1 percent spent less than 10 minutes ( $n = 5$ ).

Regarding awareness of corporate activities on social media, 98.8 percent of participants ( $n = 163$ ) know that companies have accounts on social media, most of them are following or ever followed corporate accounts on Facebook ( $n = 121$ , 73.3%), Twitter ( $n = 116$ , 70.3%), Instagram ( $n = 28$ , 17%), or corporate accounts on Pinterest, Tumblr, YouTube or other social media ( $n = 8$ , 4.8%). Participants responded they visit or follow a company's social media site(s) mostly for company-related information ( $n = 115$ , 69.7%), or promotion information or coupons ( $n = 93$ , 56.4%). The participants tend to agree that companies with social media presence are more open than the companies without social media presence ( $M = 4.95$ ,  $SD = 1.383$ ), with higher agreement of openness of companies on social media by females ( $M = 5.15$ ,  $SD = 1.240$ ) than by males ( $M = 4.63$ ,  $SD = 1.550$ ,  $t(107.530) = -2.230$ ,  $p = .028$ ). Participants do not agree that companies' messages are more credible on social media than on traditional media ( $M = 3.90$ ,  $SD = 1.277$ ). No significant gender differences were found. Regarding the relationship between the participants and BP, 141 (85.5%) have heard about BP, and 119 (72.1%) ever filled the tank at a BP gas station.

### **Statistical Analyses**

To address the research questions and hypotheses, the researcher performed a series of statistical analyses, including descriptive statistics, t-test, one-way analysis of variance (ANOVA), two-way ANOVA, analysis of covariance (ANCOVA), simple linear regression,

multiple regression, and hierarchical regression using SPSS. Please see Table 3 for detailed information.

**TABLE 3**  
**Statistical analyses performed**

	<b>Research Question/Hypothesis</b>	<b>Variables</b>	<b>Statistics</b>
RQ1a	What was BP's dominant crisis communication strategy?	Crisis communication strategy	Frequency
RQ1b	How did BP's crisis communication strategies vary over time?	IV: month DV: number of messages, number of strategies	Frequency, Chi-Square, Kruskal-Wallis test
RQ1c	How did accommodation level of BP's messages vary by message sources?	IV: message source DV: level of accommodation of BP's message	Kruskal-Wallis test
RQ2a	How did the volume of Facebook users' comments vary over time?	Number of comments	Frequency
RQ2b	How did the degree of congruence between Facebook users' comments and BP's messages vary over time?	IV: month DV: degree of congruence	One-way ANOVA
RQ2c	How did the degree of congruence between Facebook users' comments and BP's messages vary by message sources?	IV: message source DV: degree of congruence	One-way ANOVA
H1	Facebook users were more likely to comment favorably when BP used accommodative strategies.	IV: level of accommodation of BP's message DV: degree of congruence	Simple linear Regression
H2	Facebook users were more likely to comment favorably when BP used bolstering strategies.	IV: use of bolstering strategies DV: degree of congruence	Independent-samples t-test
H3	The congruence between Facebook users' comments and BP's messages will positively influence people's perceived image of BP.	IV: whether or not Facebook users' comments are congruent with BP's messages DV: perceived image of BP	Two-way ANOVA, ANCOVA
H4	People's perceived image of BP will positively influence their behavioral intentions toward BP.	IV: perceived image of BP DV: behavioral intentions	Simple linear regression
H5a	People's prior attitudes toward BP will be improved when Facebook users' comments are congruent with BP's messages.	IV: prior attitudes toward BP DV: post attitudes toward BP	Paired-samples t-test
H5b	People's prior attitudes toward BP will be mitigated when Facebook users' comments are incongruent with BP's messages.	IV: prior attitudes toward BP DV: post attitudes toward BP	Paired-samples t-test
H6	High identification will lead to higher perceived credibility on Facebook users' comments.	IV: level of social identification DV: perceived credibility of Facebook users' comments	Simple linear regression
H7	People's perceived credibility of messages will positively influence their perceived image of BP.	IV: perceived credibility of BP's messages, perceived credibility of Facebook users' comments DV: perceived image of BP	Multiple regression, Simple linear regression

## CHAPTER 4

### RESULTS

A content analysis was used to answer the aforementioned RQ1 about BP's crisis communication messages, and RQ2 about publics' responses on BP's messages. The experiment was used to answer RQ3 about the influence of congruence between BP's messages and publics' comments on people's perceived image of BP.

#### CONTENT ANALYSIS RESULTS

##### **BP's Crisis Communication on Facebook**

RQ1 examined BP's crisis communication on Facebook during the oil spill crisis in 2010. Though BP has joined Facebook in 2007, BP only posted four messages on Facebook prior to the explosion, including one in 2007 (donation to nonprofit organizations), two in 2009 (the Washington Post's interview with Tony Hayward, and development of bp.com), and one in February 2010 (BP's climate policy). The volume of messages increased dramatically during the spill crisis. From April 20, 2010 to January 5, 2011,<sup>8</sup> BP posted 3,497 messages on "BP America" Facebook page.

Regarding the type of BP's messages, over 90 percent (92.4%) of the 3,497 messages provided hyperlinks to detailed information ( $n = 3,232$ ), 5.3 percent were wall posts (e.g., updates on the clean up progress,  $n = 186$ ), 2.1 percent were notes (e.g., claims updates,  $n = 73$ ), and the remaining 0.2 percent were incoming special event notifications (e.g., open houses, and Facebook Q&A sessions, etc.,  $n = 6$ ). Of the 3,232 messages linked to other information, messages were most frequently linked to news media outlets, followed by social media sites,

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<sup>8</sup> In January 2011, only messages between January 1<sup>st</sup> and January 5<sup>th</sup> were coded, and those messages could not represent the messages in January, therefore, data between January 1<sup>st</sup> and January 5<sup>th</sup> were not used for month-based trend analyses (e.g., trend of message posted by BP, trend of comments posted by Facebook users, etc.).

corporate affiliated websites (e.g., bp.com), and government operated websites (e.g., noaa.gov,<sup>9</sup> epa.gov,<sup>10</sup> and restorethegulf.gov) (see Table 4). Within the social media sites linked to BP’s messages, YouTube (12.8%) was the most popular source, used approximately as twice as often as the second most popular medium, blogs (6.4), and the third times as frequently as Facebook (4.4%) and Flickr (4.0%). BP used Twitter least often (2.7%). Table 4 displays several examples of the messages linked to different sources.

**TABLE 4**

**The sources of information linked to BP America's messages on its Facebook page during the spill crisis**

Hyperlink (N = 3232)	<i>n</i>	%	Example of linked information
News media outlets	1294	40.0	Beach updates
Social media sites	982	30.4	
YouTube	415	12.8	Videos of clean up process
Blog	208	6.4	Concerts or other activities held in the states where tourism was affected by the oil spill
Facebook	143	4.4	Facebook chats
Flickr	128	4.0	Photos about seafood testing, clean up, wildlife rescue efforts, and beach status, etc.
Twitter	88	2.7	To invite publics to follow BP on Twitter for more information on BP’s efforts in restoring Gulf communities, the economy, and environment, etc.
Corporate affiliated websites	719	22.2	Reports on BP’s response to and lessons learned from the Deepwater Horizon oil spill
Government operated websites	237	7.3	Data released by EPA that covers dispersant use, water sampling, air quality, etc.
Total	3232	100.0	

**RQ1a: What was BP America’s dominant crisis communication strategy?** Between April 20, 2010 and January 5, 2011, BP posted 3,497 messages and a majority of them (*n* = 2,963, 84.73%) used image repair strategies,<sup>11</sup> and 708 messages (20.24%) adopted information giving strategies.<sup>12</sup> Of the 3,497 messages, 174 (4.98%) used mixed strategies (see Table 5).

<sup>9</sup> NOAA: National Oceanic and Atmospheric Administration

<sup>10</sup> EPA: U.S. Environmental Protection Agency

<sup>11</sup> The number includes number of messages using mixed strategies.

<sup>12</sup> The number includes number of messages using mixed strategies.

**Information giving strategies.** Within the 708 messages using information giving strategies, instructing information-giving messages ( $n = 360$ , 10.29%) were slightly more than adjusting information-giving messages ( $n = 348$ , 9.95%). Instructing information was used to help publics to know what to do to protect them physically and financially. It mainly included: 1) information on oil spill-related claims, such as process of filing claims of loss or damage, and checking claim status, potential online or local claims fraud, and new claim policies after the Independent Gulf Coast Claims Facility started to administer the claims process on August 23, 2010; 2) information on re-employment, for example, “BP is working with the unemployment agencies of Gulf Coast states to train citizen who are currently unemployed to hire them as qualified Community Responders” (BP America, June 9, 2010); 3) information of help centers (e.g., mobile claim centers, community outreach centers, and business recovery centers, etc.), and helplines that offer information, support, and counseling for families and children affected by the oil spill; and 4) information for volunteers those who were willing to help with the Gulf coast recovery efforts, for example, registering boats for BP’s “Vessel of Opportunity” program to assist with response,<sup>13</sup> volunteering to clean up the beaches in the impacted region, and reporting oiled wildlife or oil on a beach. Additionally, there were some tips on fishing and seafood consumption, such as a map of the areas open to fishing, the best way to buy seafood, and recipes, etc.

Adjusting information was used to help publics to cope psychologically with the crisis by reducing uncertainty about the crisis. The majority of adjusting information posted by BP was links to other sites (e.g., online interactive map developed by NOAA, Federal websites, BP’s Twitter account, and BP’s Flickr account, etc.) that cover oil spill response efforts ( $n = 163$ ,

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<sup>13</sup> Vessel of Opportunity (VoO) program: This program employed local commercial fishing vessels to assist in the cleanup of crude oil from water in the Gulf of Mexico (BP, July 5, 2010).

46.9%). For example, BP invited publics to visit its official Flickr account “for images of the response activity, from beach cleanup to claim centers” (BP America, June 23, 2010); and “see the locations of response vessels across the Gulf, along with other up-to-date oil spill activity, on NOAA’s interactive oil spill response map” (BP America, July 10, 2010). The second category of adjusting information was crisis-related general information, or who, what, where, and when about the crisis ( $n = 139$ , 40.1%), which included weather condition updates (e.g., “the National Hurricane Center is indicating that Tropical Storm Bonnie is not well-organized and the Gulf of Mexico environment isn’t ‘favorable’ for significant strengthening” (BP America, July 23, 2010)), severity of the spill (e.g., “The scientific teams estimate that 53,000 barrels of oil per day were leaking from the oil well” (BP America, August 2, 2010)), personnel changes (e.g., “BP names Mike Utsler its representative to Unified Area Command in New Orleans; Doug Suttles returning to COO role in Houston” (BP America, August 6, 2010)), and status of affected regions (e.g., “View an interactive map from *USA Today* to see the status of beaches, fishing water, and more advisories along the Gulf Coast” (BP America, August 8, 2010), “Watch the latest Daily Beach Update to see conditions near the sands of Gulf Shores and Orange Beach, Alabama” (September 18, 2010)). The third category of adjusting information was notifications and reminders of interactive activities (e.g., Facebook Q&A sessions, and Facebook chats with BP officers) that aimed to answer publics’ questions about impact of the spill, seafood testing, and Gulf Coast cleanup and restoration etc. ( $n = 45$ , 13.0%). For example, “Have questions about the safety of Gulf seafood? Dr. Jane Lubchenco, Director of NOAA, will host a live chat to answer your questions, Monday, August 16 at 2:00 pm ET” (BP America, August 13, 2010).

***Image repair strategies.*** Within the 2,963 messages using image repair strategies, rebuilding strategies ( $n = 2,148$ , 61.42%) was used most often, followed by bolstering strategies

( $n = 1110$ , 31.74%), denial strategies ( $n = 283$ , 8.09%), and diminishment strategies ( $n = 115$ , 3.29%, see Table 5).

*Rebuilding cluster.* BP used strategies from the rebuilding cluster most frequently. The strategies included rectification strategy ( $n = 1,911$ , 54.65%), compensation strategy ( $n = 251$ , 7.18%), regret ( $n = 14$ , .40 %), and apology ( $n = 9$ , .26%). The rectification strategy (54.65%) was often used to remind publics of BP's response efforts, such as 1) oil cleanup (e.g., well kill, oil containment, shoreline cleanup, and Louisiana deep cleaning), 2) helping residents in the impacted regions (e.g., establishing community outreach centers, setting up helplines, and funding behavioral health support programs), 3) rescuing and rehabilitating oiled wildlife; and 4) funding research on the effect of the oil spill on the Gulf Coast. In late August 2010, BP started to move out of recovery mode and into restoration, BP used the rectification strategy to inform publics of its restoration efforts, such as 5) restoring Gulf Coast economy by promoting tourism in Alabama, Louisiana, and Florida states (e.g., providing tourism grant fund for activities such as free concerts, seafood festivals, charity race, and gift cards for shopping etc.), and 6) working with experts from the industry, government, and academia on restoration programs such as the Environmental Sampling and Monitoring Program, in which air samples and water samples were tested for oil and dispersants; and the Natural Resource Damage Assessment program (NRDA), which identified the impact, planed and implemented the restoration of natural resources impacted by the oil spill (BP America, November 13, 2010). BP also used the rectification strategy to rebuild trust and confidence in BP by 7) ensuring that such an accident never happens again, and 8) reiterating the long-term commitment (e.g., "Mike Utsler, BP's COO for the Gulf Coast Restoration Organization, reiterated that BP is committed to maintaining a long-term

presence in the region, and to engaging parish and state leaders in the ongoing recovery efforts” (BP America, August 13, 2010)).

The compensation strategy (7.18%) was used almost exclusively to mention the amount of money BP paid for individual and business claims. Both regret and apology were rarely used (less than 1%), and were used by BP’s former CEO Tony Hayward on congressional hearings, and by BP’s newly appointed CEO Bob Dudley to rebuild people’s confidence in BP.

*Denial cluster.* From denial cluster, denial strategy ( $n = 263$ , 7.52%) was used most frequently on issues such as 1) safety of seafood, for example, with results of tests by NOAA and FDA showing “no presence of harmful hydrocarbons and dispersants” in Gulf seafood, BP denied any possibility that the oil could taint seafood (BP America, July 15, 2010); and 2) environmental damage of the spill, for example, BP denied that the tar balls appeared on beaches of Texas (BP America, July 9, 2010) and Northeast Florida (BP America, July 15, 2010) are from the Gulf oil spill. Some messages mentioned that some reports of oil in the water ended up actually being algae (BP America, August 14, 2010). Denial was also used on 3) BP’s media access policy, for example, BP posted that it has never prohibited members of the response team from speaking to the media, but instead, fully supports “all individuals’ rights to share their personal thoughts and experiences with journalists if they so choose” (BP America, June 9, 2010). The last major category of messages using denial strategy was about cleanup operation-related issues, for example, BP denied that BP ever used clean sand to cover or bury oil or oiled sand (BP America, July 3, 2010), or any illnesses of cleanup workers are oil-related (BP America, July 4, 2010).

Scapegoat ( $n = 20$ , .57%) was used mostly by BP on the investigation results of the cause of the Deepwater Horizon explosion, which claimed “a sequence of failures of involving a

number of different parties led to the explosion and fire” (BP America, September 9, 2010), and blamed Halliburton for recommending and supplying the unstable cement on the bottom of the Macondo well (BP America, October 29, 2010). The failure of the cement may have contributed to the blowout, according to the National Commission (BP America, October 29, 2010). BP also used scapegoat strategy in its defense on the dispersants use by claiming that the dispersants use “was under the direct guidance and approval of the EPA and the United States Coast Guard” (BP America, August 31, 2010).

*Diminishment cluster.* From diminishment cluster, minimization ( $n = 104$ , 2.97%) was used to remind publics that the extent of the disaster was not as bad as they assumed, for example, “even if the oil reached the East Coast, it was unlikely to have a serious environmental impact” (BP America, July 5, 2010), and “nearly 90% of Florida’s, more than 1,260 miles of coastline are not impacted by oil” (BP America, July 20, 2010). Minimization was also used to lessen the perceived toxicity level of Corexit, a dispersant used to dissolve oil. For example, BP said the lab tests showed the toxicity level of Corexit is not far off of the toxicity level of dish soap (BP America, July 2, 2010), and BP only used dispersants on offshore response operations and had not sprayed within 25 miles of the coast (BP America, July 24, 2010).

Excuse ( $n = 13$ , .37%) was often used to explain weather delays, for example, “The waves do not allow us to skim. The booms are ineffective, and the dispersant can’t be laid down. So, we’re waiting until Saturday, when the waves come down” (BP America, July 2, 2010). Excuse was also used when BP was criticized for lying about the size of the spill (BP reported that 5,000 barrels of crude oil was releasing into the Gulf a day, but the government later said the total was likely 60,000 barrels a day (NPR, July 7, 2010)), BP said the estimate of flow was inaccurate

because including the Coast Guard and NOAA, “everyone has said it’s extremely difficult to know how much oil is coming out of this well” (BP America, July 7, 2010).

*Bolstering cluster.* From bolstering cluster, endorsement of outside experts strategy ( $n = 472$ , 13.5%) was often used to add credibility to messages by BP. Government ( $n = 222$ , 47.03%) was the top outside group from whom BP got the most endorsements, followed by experts (e.g., scientists, researchers, and professors,  $n = 106$ , 22.46%), Gulf businesses (e.g., restaurants, and travel agencies,  $n = 68$ , 14.41%), chefs ( $n = 36$ , 7.63%), tourists ( $n = 14$ , 2.97%), media/journalists (e.g., *the Commercial Appeal*, and *Seafood Watch*,  $n = 12$ , 2.54%), Gulf residents ( $n = 6$ , 1.27%), celebrities (e.g., famous sportsman,  $n = 4$ , .85%), claimants ( $n = 2$ , .42%) and volunteers ( $n = 2$ , .42%). Endorsements from the outside experts were used to promote safety of Gulf seafood (e.g., government, experts, Gulf business owners, celebrities, and chefs), to justify that the oil spill damage on natural resources was not as bad as expected, or the use of dispersants was effective and its negative effects on water quality was not near levels of concern (e.g., experts), and to confirm the cleanup progress made by BP (e.g., tourists, residents, media, and volunteers).

The less often used strategies from bolstering cluster were reminder, concern, ingratiation, and justification. Rather than reminding publics of BP’s past good work, the reminder strategy ( $n = 387$ , 11.7%) centered on the progress made by BP in Gulf restoration, such as increasing areas reopened to fishing following comprehensive water quality test by NOAA and/or FDA, recovering tourism at the beaches of affected states, and rising consumer confidence (e.g., “Florida’s consumer confidence rose two points, says a new University of Florida survey” (BP America, September 29, 2010)). BP used concern strategy ( $n = 295$ , 8.44%) primarily to show concern for affected families, fishermen, rig workers, and Gulf Coast business owners, and to

reassure the public who are concerned about the use of Corexit and its effect on the health of people exposed to the chemical, and seafood safety (e.g., "The FDA,<sup>14</sup> NOAA, and other agencies have collaborated to establish and enforce strong safety criteria and testing standards to ensure seafood from the Gulf is safe to eat" (BP America, October 5, 2010)). Ingratiation ( $n = 124$ , 3.55%) was used to praise hard work of BP workers, scientists, volunteers, and all other involved in the response. Justification ( $n = 39$ , 1.12%) was used to justify BP's cleanup operations, for example, BP disassembled boom project along Perdido Pass in Alabama as traces of oil in the region became rarer (BP America, July 27, 2010), and downsized the command center in South Florida when the chance of oil affecting the region was "very, very low" (BP America, August 11, 2010).

In summary, during BP's crisis response on Facebook, BP used image repair strategies more frequently than information giving strategies. BP's dominant image repair strategies were from the rebuilding cluster (61.42%), which was used much more often than other primary crisis communication strategies, saying denial (8.09%) and diminishment (3.29%). The supplementary strategies, ones from the bolstering cluster (Coombs, 2006), were second most commonly used strategies (31.74%). Within the 1,110 messages using bolstering cluster, 290 (26.13%) were used with rebuilding cluster, 221 (19.91 %) were used with denial cluster, 79 (7.12 %) were used with diminishment cluster, and 47 (4.23%) were used in conjunction with two or more from the other three clusters. Except for rebuilding cluster, which was more frequently used alone than mixed with other clusters ( $n_{\text{rebuilding alone}} = 1810$ ,  $n_{\text{rebuilding and other clusters}} = 294$ ), denial cluster ( $n_{\text{denial alone}} = 16$ ,  $n_{\text{denial and other clusters}} = 267$ ) and diminishment cluster ( $n_{\text{diminishment alone}} = 10$ ,  $n_{\text{diminishment and other clusters}} = 105$ ) were more often used with other clusters, especially bolstering cluster.

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<sup>14</sup> FDA: U.S. Food and Drug Administration

**TABLE 5**

**BP America's crisis communication messages on its Facebook page during the oil spill crisis**

<b>N = 3497 messages</b>	<b>n</b>	<b>%</b>	<b>Example of Message by BP</b>
<b>Information Giving Strategy</b>	<b>N = 708</b>	<b>20.24</b>	
Instructing information	360	10.29	Rig workers who believe they are eligible for a financial hardship grant can apply online via the link below or by calling the toll-free hotline, 866-577-8141 (September 6, 2010).
Adjusting information	348	9.95	View an interactive map from <i>USA Today</i> to see the status of beaches, fishing waters, and more advisories along the Gulf Coast (August 8, 2010).
<b>Image Repair Strategy</b>	<b>N = 2963</b>	<b>84.73</b>	
<b>Denial Cluster</b>	<b>283</b>	<b>8.09</b>	
Denial	263	7.52	Extensive laboratory tests have confirmed that the shrimp are oil-free and safe to eat (August 19, 2010).
Scapegoat	20	.57	BP's Deepwater Horizon Accident Investigation Report claimed that no single factor caused the Macondo well tragedy, rather, a sequence of failures involving a number of different parties led to the explosion and fire (September 9, 2010).
<b>Diminishment Cluster</b>	<b>115</b>	<b>3.29</b>	
Minimization	104	2.97	The Corexit is a dispersant that's approved by the EPA. It's been used for a long time in the Gulf Coast...there is a toxicity level to it. It's not far off of the toxicity levels of dish soap. And the lab tests show that (July 2, 2010).
Excuse	13	.37	Oil collection volumes were lower on June 30 due to lightening storms (June 30, 2010).
<b>Rebuilding Cluster</b>	<b>2148</b>	<b>61.42</b>	
Rectification	1911	54.65	BP Pledges \$500 Million for Independent Research into impact of spill on marine environment (May 24, 2010).
Compensation	251	7.18	To date, the Gulf Coast Claims Facility has paid a combined \$1.1 billion to 55,000 claimants (October 9, 2010).
Regret	14	.40	BP's CEO Tony Hayward expressed his deep regret and sorrow for the tragedy (June 3, 2010).
Apology	9	.26	BP CEO Tony Hayward Issues an apology for remarks "I made a hurtful and thoughtless comment on Sunday when I said that 'I wanted my life back.' When I read that recently, I was appalled. I apologize, especially to the families of the 11 men who lost their lives in this tragic accident..."(June 2, 2010)
<b>Bolstering Cluster</b>	<b>1110</b>	<b>31.74</b>	
Endorsement	472	13.50	Biologists do not think any bird species will be seriously threatened by the disaster (August 4, 2010).
Reminder	387	11.07	Houma, La. Incident Commander Keith Seilhan discusses the significant progress made by BP in the first 100 days of the offshore cleanup efforts in the Gulf of Mexico (August 4, 2010).
Concern	295	8.44	A program will be offered in Alabama to teach volunteers how to be "peer listeners" in an attempt to help friends and neighbors deal with depression (December 14, 2010).
Ingratiation	124	3.55	We (BP) appreciate the hard work of the many scientists who participated in this unprecedented study of the Gulf of Mexico (December 17, 2010).
Justification	39	1.12	The number of oiled wildlife in Florida continues to steadily decline. Because of this, special arrangements for saving oiled wildlife are no longer needed (September 24, 2010).

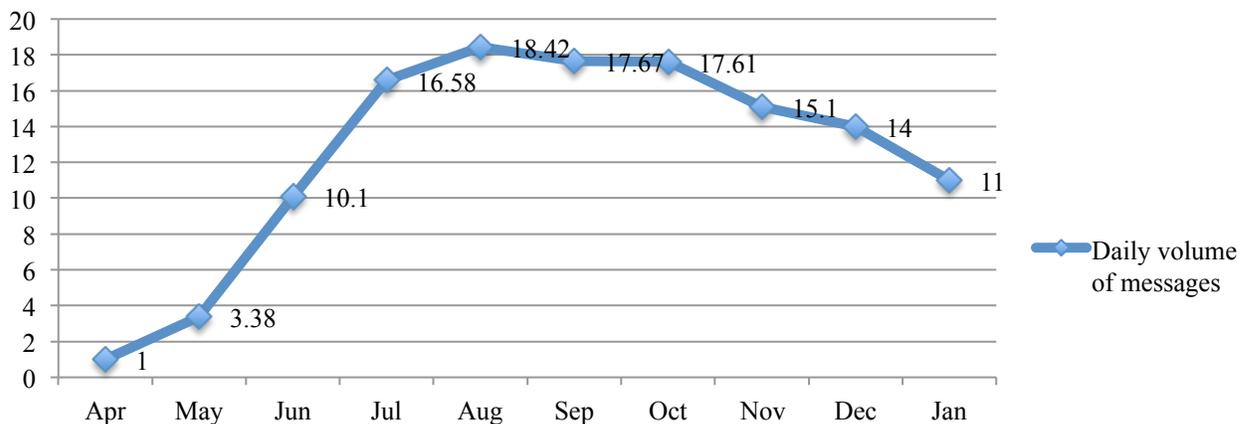
Note: All examples of BP's messages were retrieved from BP America's Facebook page.

**RQ1b: How did BP America’s crisis communication strategies vary over time?** The trend of BP’s communication on Facebook during the crisis was examined through 1) the change of the number of messages posted by BP, 2) the change of the strategies used, and 3) the change of the level of accommodation of messages over time.

As shown in Figure 1, the volume of BP’s messages has increased from April to August ( $n_{Apr} = 2, n_{May} = 81, n_{Jun} = 303, n_{Jul} = 514$ ), with the greatest proportion of messages posted in August ( $n_{Aug} = 571, 16.3\%$ ), but gradually decreased after August ( $n_{Sep} = 538, n_{Oct} = 546, n_{Nov} = 453, n_{Dec} = 434$ ). After the well explosion on April 20, 2010, BP posted on Facebook almost every day, with its mean daily volume of messages jumping from one message in April 2010 to 18.42 messages in August 2010. When great progress was made in well containment in September (the well was declared dead on September 19), the average number of messages per day steadily declined, but kept more than 10 messages (see Figure 1).

**FIGURE 1**

**Trend of average messages posted by BP America per day on its Facebook page during the oil spill crisis (April 20, 2010- January 5, 2011).**

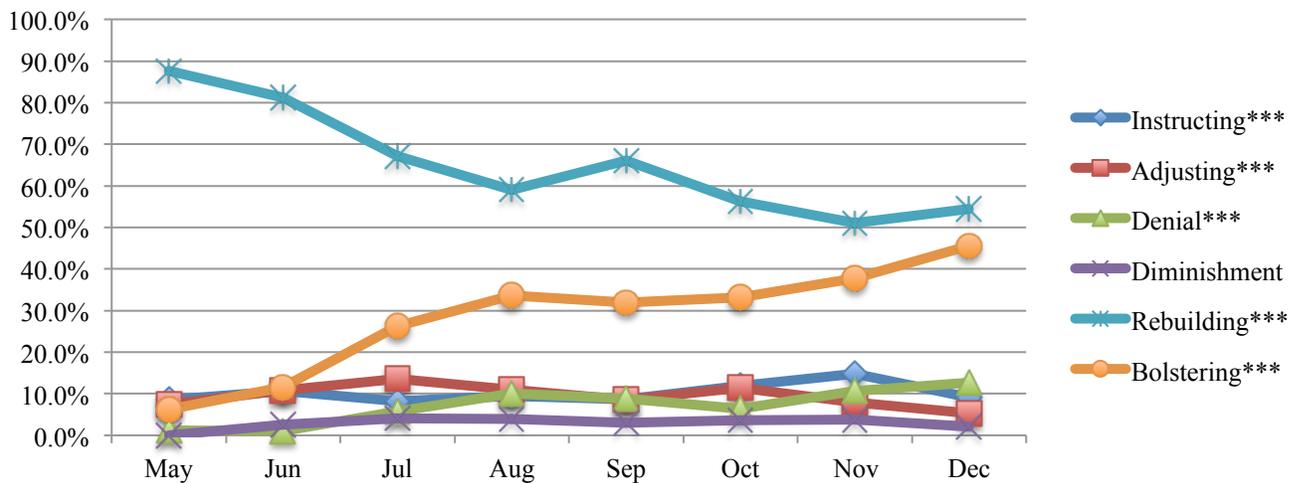


To examine the trend of strategies used by BP, the researcher performed a series of chi-square tests. As presented in Table 8 (see Appendix F) and Figure 2, overall, the percentage of instructing information-giving messages increased, while the percentage of adjusting

information-giving messages decreased over the time periods ( $\chi^2 = 40.649, df = 14, p < .001$ ). In terms of image repair strategies, the percentage of messages using denial strategies ( $\chi^2 = 50.789, df = 7, p < .001$ ), bolstering strategies ( $\chi^2 = 136.336, df = 7, p < .001$ ), and diminishment strategies ( $p = .380$ ) increased over time. But the percentage of messages using rebuilding strategies significantly declined across the months ( $\chi^2 = 122.995, df = 7, p < .001$ ).

**FIGURE 2**

**Trend of crisis communication strategies used by BP America on its Facebook page during the oil spill crisis (May-December, 2010, month-based).**



Note: 1. Instructing and adjusting information:  $\chi^2 = 40.649, df = 14, p < .001$ ; 2. Denial cluster:  $\chi^2 = 50.789, df = 7, p < .001$ ; 3. Rebuilding cluster:  $\chi^2 = 122.995, df = 7, p < .001$ ; 4. Bolstering cluster:  $\chi^2 = 136.336, df = 7, p < .001$ .

A Kruskal-Wallis test was conducted to determine if there were significant differences among the accommodation levels of BP's messages across time periods. Data revealed that the accommodation levels significantly differed over time ( $\chi^2 = 118.02, df = 9, p < .001$ ). Pairwise comparisons were performed using Dunn's (1964) procedure with a Bonferroni correction for multiple comparisons. The post hoc analysis revealed that the accommodation level in May ( $M = 4.74$ ) was significantly greater than the accommodation levels in July ( $M = 4.29, p = .010$ ), August ( $M = 4.06, p < .001$ ), September ( $M = 4.23, p = .004$ ), October ( $M = 4.11, p < .001$ ),

November ( $M = 3.99$ ,  $p < .001$ ), December ( $M = 4.01$ ,  $p < .001$ ), and January 2011 ( $M = 3.73$ ,  $p < .001$ ). The accommodation level in June ( $M = 4.60$ ) was significantly greater than the accommodation levels in following months (all  $p < .001$ , except for July,  $p = .002$ ). The results also suggested that there were significant differences between July and November ( $p = .001$ ), July and December ( $p = .040$ ), July and January 2011 ( $p = .016$ ), September and November ( $p = .003$ ), and September and January 2011 ( $p = .028$ ), but not between May and June, or any other group combination. Therefore, overall, the accommodation levels of BP's messages decreased over time, that means BP used more defensive strategies along with crisis communication process.

**RQ1c: How did accommodation levels of BP America's messages vary by message sources?** Over 90 percent of BP's messages were linked to news media websites, social media sites, corporate affiliated websites, or government operated websites. Corporate affiliated websites and social media sites were more often used at the early stage, while news media were often used since August 2010 ( $\chi^2 = 356.174$ ,  $df = 21$ ,  $p < .001$ , see Table 9 in Appendix F).

A Kruskal-Wallis test was run and the results suggested significant differences among the accommodation levels of BP's messages across different sources ( $\chi^2 = 110.406$ ,  $df = 3$ ,  $p < .001$ ). Pairwise comparisons showed that messages linked to corporate affiliated websites ( $M = 4.31$ ) and social media sites ( $M = 4.34$ ) were more accommodative than messages linked to news media outlets ( $M = 4.05$ ) and messages linked to government managed websites ( $M = 3.60$ , all  $p < .001$ ). The data also showed greater accommodative levels in messages linked to news media outlets than that in messages linked to government managed websites ( $p < .001$ ). No significant differences were found between accommodation levels in messages linked to corporate affiliated websites and messages linked to social media sites.

## Facebook Users' Comments on BP America's Crisis Communication Messages

The second research question examined how Facebook users commented on BP America's crisis communication messages on BP America's Facebook page. From April 20, 2010 to January 5, 2011, BP received 57,344 "likes", 180,744 comments, and its messages were shared 20 times.

**RQ2a: How did the volume of Facebook users' comments vary over time?** BP received more comments ( $n = 40,265$ ) and more likes ( $n = 14,046$ ) in July than in other months in 2010 (see Table 6). The number of comments and likes steadily decreased since August 2010. BP's messages were shared most often in May ( $n = 14$ ), but rarely in other months. As presented in Figure 3, there were more comments and likes on each message in June than in other months.

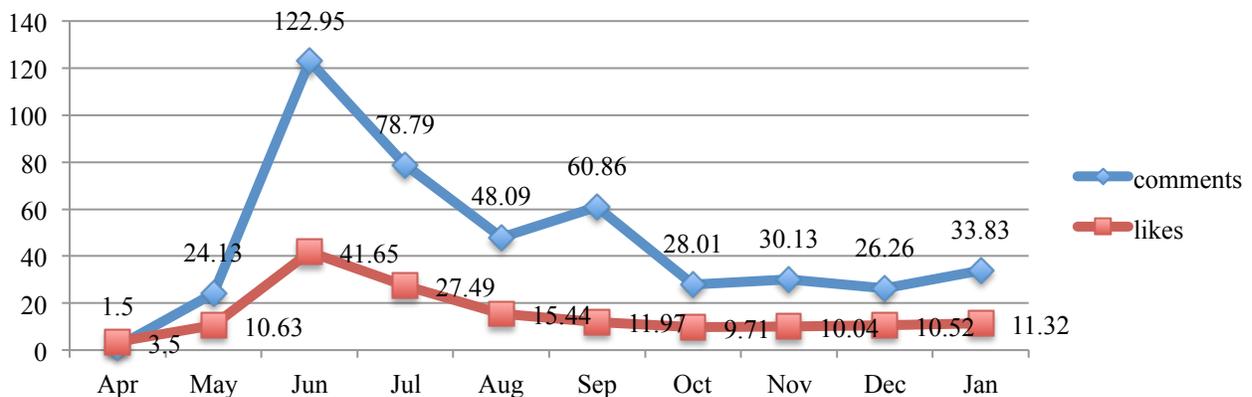
**TABLE 6**

**The volume of Facebook users' comments, likes, and shares on BP America's Facebook page during the oil spill crisis (April-December, 2010, month-based).**

	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Comments	3	1515	37134	40265	27291	32632	15264	13621	11213
Likes	7	638	12578	14046	8753	6418	5301	4542	4461
Shares	0	14	0	1	0	0	1	1	3

**FIGURE 3**

**The average number of comments and likes on per message on BP America's Facebook page during the oil spill crisis (April 20, 2010-January 5, 2011).**



**RQ2b: How did the degree of congruence between Facebook users' comments and BP America's messages vary over time?** Overall, Facebook users' comments were congruent with BP's messages in each month (all  $M > 0$ ). A one-way ANOVA test was performed with month as the independent grouping variable, and the degree of congruence between comments and messages as the dependent variable. Results indicated significant differences among degree of congruence between comments and messages in different time periods (Welch's  $F(8, 417.178) = 19.372, p < .001$ ).<sup>15</sup> Games-Howell post-hoc analysis revealed that the degree of congruence has increased from May to September, but decreased after September and reached the lowest point in December. To be specific, results suggested significant differences between the degree of congruence in May ( $M = .07$ ) and August ( $M = .36, p = .044$ ), September ( $M = .40, p = .011$ ); between June ( $M = .14$ ) and August ( $p < .001$ ), September ( $p < .001$ ), and October ( $M = .34, p < .001$ ); between July ( $M = .24$ ) and September ( $p = .008$ ), and December ( $M = .05, p = .008$ ); between August and November ( $M = .21, p = .003$ ) and December ( $p < .001$ ); between September and November ( $p < .001$ ) and December ( $p < .001$ ); between October and December ( $p < .001$ ); and between November and December ( $p = .007$ ). No significant differences were found between a month and the month next to it (e.g., May and June, June and July, July and August, etc.), except for December, the degree of congruence in December was significantly lower than the degree of congruence in November ( $p = .007$ ). It indicates that the change in congruence between people's perceived image and BP's projected image may take time.

**RQ2c: How did the degree of congruence between Facebook users' comments and BP America's messages vary by message sources?** A one-way ANOVA was performed with degree of congruence as the dependent variable, and message sources (news media outlets, social

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<sup>15</sup> Homogeneity of variances was violated, as assessed by Levene's Test of Homogeneity of Variance ( $p < .001$ ). Therefore, Welch's ANOVA results were reported.

media sites, corporate affiliated websites, and government operated websites) as the independent variables. No significant differences were found. Therefore, Facebook users did not comment more positively or more negatively in response to the sources of BP's messages.

**H1: People were more likely to comment favorably when BP America used accommodative strategies.** A simple linear regression was performed to address H1 with the accommodation level of BP's message as the independent variable, and the degree of congruence between Facebook user's comment and BP's message as the dependent variable. The linear regression revealed that the accommodation level of BP's message significantly positively predicted the degree of congruence between comments and messages ( $F(1, 2854) = 46.913, p < .001, R^2 = .016, b = .055$ ). Thus, **H1 was supported.**

**H2: People were more likely to comment favorably when BP America used bolstering strategies.** A series of independent-samples t-test were used. Though the test showed that the degree of congruence was higher when BP used denial strategies and bolstering strategies ( $M = .004$ ) than when BP used denial strategies alone ( $M = -.033$ ), but the result was not statically significant. Similar results were found for using diminishment and bolstering strategies, and using diminishment strategies alone; using rebuilding and bolstering strategies, and using rebuilding strategies alone; as well as using bolstering and other clusters, and using bolstering alone. Therefore, **H2 was not supported.**

Another independent-samples t-test was performed with degree of congruence being the dependent variable, and whether or not using bolstering strategies being the independent variable. Interestingly, the t-test revealed that people were more likely to comment favorably when bolstering strategies were NOT used ( $M = .29$ ) than bolstering strategies were used ( $M = .21, t(2819) = 3.822, p < .001$ ).

## EXPERIMENTAL RESULTS

The survey-based experiment was used to answer RQ3, which examined how BP's messages and Facebook users' comments on BP America's Facebook page influenced people's perceptions of BP.

H3 predicts that the congruence between Facebook users' comments and BP's messages will positively influence people's perceived image of BP, with congruent comments and messages eliciting more positive image of BP than incongruent counterparts. First, a two-way ANOVA was performed with people's perceived image of BP as the dependent variable, and congruence between comments and messages (congruent vs. incongruent), and accommodation level of BP's messages (defensive vs. accommodative) as the independent variables. The analysis revealed a significant main effect of congruence between Facebook users' comments and BP's messages on people's perceived image of BP, with congruent comments and messages engendering more positive perceived image of BP ( $M_{\text{congruent}} = 4.02, SD = 1.007$ ) than incongruent comments and messages ( $M_{\text{incongruent}} = 3.68, SD = .951, (F(1, 161) = 5.292, p = .023, \eta^2 = .032)$ ). There were no significant differences between participants' perceived image of BP when BP used accommodative strategies and when BP used defensive strategies. There was no significant interaction between comment-message congruence and accommodation level of messages either. Therefore, **H3 was supported**. That means only congruence between Facebook users' comments and BP's messages positively influences people's perceived image of BP, whether BP uses accommodative or defensive strategies in messages neither influences people's perceived image of BP nor moderates the main effect of congruence between comments and messages.

In addition, because there was a linear relationship between participants' prior attitudes toward BP before being exposed to the experimental materials and participants' perceived image of BP after reading the materials ( $F(1, 139) = 84.588, p < .001, R^2 = .374, b = .402$ ), prior attitudes toward BP may work as a covariate in the experiment. An ANCOVA was applied to test the effects of congruence on participants' perceived image of BP after controlling for participants' prior attitudes toward BP. Results showed that after adjustment for prior attitudes, there was still significant differences in participants' perceived image of BP between the two experimental conditions (i.e., when comments were congruent with messages, and when comments were incongruent with messages) ( $F(1, 138) = 4.768, p = .031, \eta^2 = .033$ ).

H4 predicts that people's perceived image of BP would positively influence their behavioral intentions toward BP, with individuals perceiving BP more positively showing more favorable reactions than their counterparts. Four simple linear regressions were performed with people's perceived image of BP as the independent variable, and people's Facebook engagement intentions, WOM intentions, purchase intentions of BP's products/services, and overall behavioral intentions as the dependent variables. Results indicated that people were more likely to visit or comment on BP's Facebook page ( $F(1, 163) = 5.188, p = .024, R^2 = .025, b = .240$ ), say positive things about BP ( $F(1, 163) = 91.723, p < .001, R^2 = .356, b = .885$ ), and purchase BP's products or services ( $F(1, 163) = 82.557, p < .001, R^2 = .332, b = .857$ ) when they perceived BP's image positively. Overall, people's perception of BP explained 29.8 percent of the variance in their behavioral intentions ( $F(1, 163) = 70.574, p < .001, R^2 = .298, b = .661$ ). Thus, **H4 was supported**.

H5a and H5b posited that people's prior attitudes toward BP would change after reading the experimental materials, and their attitudes would be improved if the comments were

congruent with BP's messages, while their attitudes would be mitigated if the comments were incongruent with BP's messages. Two paired-samples t-tests were performed to address H5a and H5b. No significant differences were found between participants' attitudes toward BP before and after reading the messages either when the comments were congruent with BP's messages or incongruent with BP's messages. Thus, **H5a and H5b were not supported.**

H6 posited that high social identification would lead to higher perceived credibility of Facebook users' comments, with individuals perceiving tighter social ties with Facebook users tending to trust Facebook users' comments more than BP's messages compared to their counterparts. Two simple linear regressions were conducted to examine the effect of social identification level (independent variable) on difference between perceived credibility of Facebook users' comments and perceived credibility of BP's messages<sup>16</sup> (dependent variable). It was found that when the comments were incongruent with the messages, individuals who felt closer connection to Facebook users were more likely to trust Facebook users' comments than BP's messages ( $F(1, 82) = 5.236, p = .025, R^2 = .049, b = .518$ ). However, no significant differences were found when the comments were congruent with the messages. Thus, **H6 was partially supported.**

H7 posited that people's perceived credibility of BP's messages would positively influence their perceived image of BP, with higher level of perceived credibility eliciting more favorable perceptions. A multiple regression was conducted with perceived credibility of BP's messages, and perceived credibility of Facebook users' comments as the independent variables, and perceived image of BP as the dependent variable. Results showed that only perceived credibility of BP's messages was a significant predictor of people's perceived image of BP ( $F(1,$

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<sup>16</sup> Difference between participants' perceived credibility of Facebook users' comments and perceived credibility of BP's messages = Participants' perceived credibility of Facebook users' comments – Participants' perceived credibility of BP's messages

163) = 146.592,  $p < .001$ ,  $R^2 = .470$ ,  $b = .462$ ). People's perceived credibility of Facebook users' comments did not significantly predict their perceived image of BP. Another simple linear regression was used with perceived credibility difference (difference between participants' perceived credibility of Facebook users' comments and perceived credibility of BP's messages) as the independent variable, and participants' perceived image of BP as the dependent variable. The analysis revealed that people were more likely to perceive BP negatively when they perceived users' comments more trustworthy than BP's messages ( $F(1, 163) = 58.441$ ,  $p < .001$ ,  $R^2 = .259$ ,  $b = -.312$ ). Thus, **H7 was supported**.

### **Mediation and Moderation Analyses**

The researcher conducted additional mediation and moderation analyses to investigate whether the two intervening variables (i.e., prior attitude toward BP, and social identification) moderate or mediate message-comment congruence and one's perceived image of BP.

Before conducting the analyses, the researcher dummy coded message-comment congruence by coding congruence as "1" and incongruence as "0". The researcher also tested the relationship between message-comment congruence and social identification with an independent-samples t-test. Results showed that participants felt more closely connected to Facebook users when they read incongruent information ( $M_{\text{incongruent}} = 3.99$ ) than they did when read congruent information ( $M_{\text{congruent}} = 3.68$ ,  $t(163) = 2.219$ ,  $p = .028$ ). No significant relationship was found between message-comment congruence and prior attitude toward BP.

Two hierarchical regressions were performed to 1) predict perceived image of BP from message-comment congruence (predictor), prior attitude toward BP (moderator), and a product term to represent congruence-by-prior attitude interaction, and to 2) predict perceived image of BP from prior attitude toward BP (predictor), message-comment congruence (moderator), and

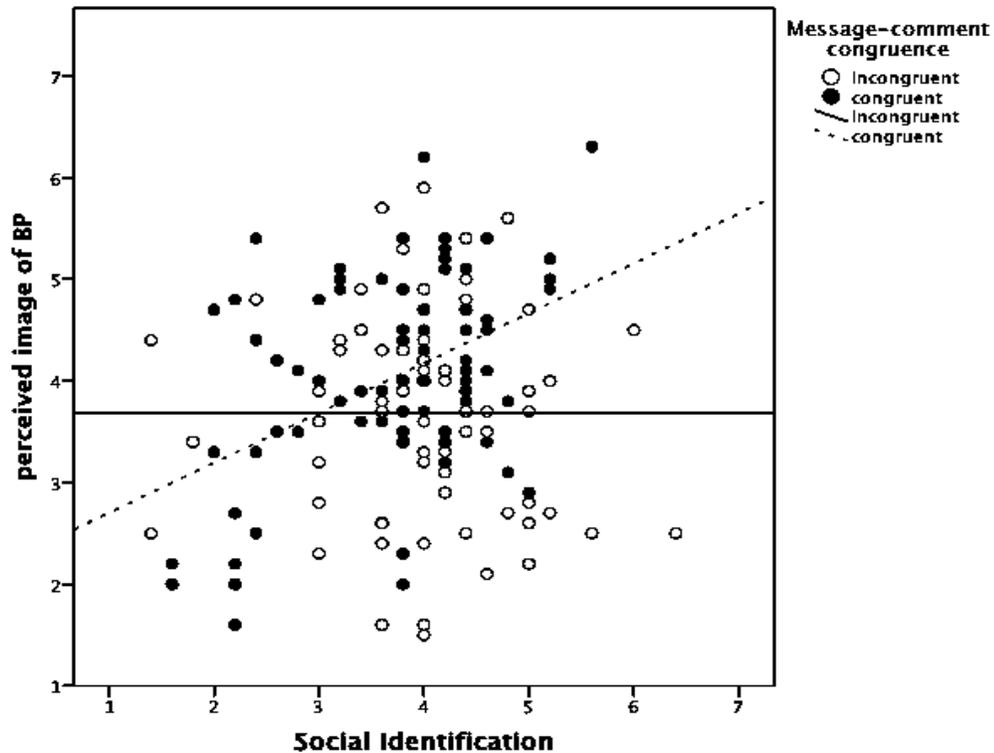
prior attitude-by-congruence interaction. There was no significant interaction in either model. Therefore, the effect of message-comment congruence on one's perceived image of BP did not change significantly because of prior attitudes toward BP. The effect of one's prior attitude toward BP on perceived image of BP did not change significantly because of the congruence or incongruence between Facebook users' comments and BP's messages either.

Another hierarchical regression was performed to predict perceived image of BP from message-comment congruence (predictor), social identification (moderator), and congruence-by-social identification interaction. As showed in Table 8, there was a significant interaction between message-comment congruence and social identification ( $p = .003$ ,  $\Delta R^2 = .048$ ). The overall model ( $F(3, 161) = 7.93$ ,  $p < .001$ ,  $R^2 = .113$ ) and the main effect of message-comment congruence on perceived image of BP ( $p = .026$ ) were also significant. The main effect of social identification on perceived image of BP was no longer significant. Therefore, social identification moderated the effect of message-comment congruence on perceived image of BP. As presented in Figure 4, in the scenario of congruent information, participants perceived BP more positively when they perceived closer connection to Facebook users. Whereas, participants' perceived image of BP did not differ significantly because of different social identification levels in the scenario of incongruent information. In addition, participants' perceived image of BP in the scenario with congruent information and the scenario with incongruent information did not differ significantly when social identification level was "3" on a 7-point scale. When social identification level was lower than three, the perceived image of BP was more positive when Facebook users' comments were incongruent with BP's messages than when the comments were congruent with BP's messages. When social identification level was higher than three, the

perceived image of BP was more positive when the comments were congruent with BP's messages than when the comments were incongruent with BP's messages.

FIGURE 4

Interaction between message-comment congruence and social identification



In addition, given that there are significant relationships between prior attitudes toward BP and perceived credibility difference ( $F(1, 139) = 17.822, p < .001, R^2 = .107, b = -.352$ ), between perceived credibility difference and perceived image of BP ( $F(1, 163) = 58.441, p < .001, R^2 = .259, b = -.312$ ), and between prior attitudes toward BP and perceived image of BP ( $F(1, 139) = 84.588, p < .001, R^2 = .374, b = .402$ ), a hierarchical regression was performed to test whether the influence of one's prior attitude toward BP on perceived image of BP was mediated by perceived credibility difference. Results indicated that the overall model was significant ( $F(2, 138) = 66.559, p < .001, R^2 = .484$ ) (see Table 7). The main effect of prior

attitudes toward BP ( $p < .001$ ) and the main effect of perceived credibility difference ( $p < .001$ ) remained significant. The relationship between prior attitudes toward BP was reduced with the addition of perceived credibility difference ( $\beta = .495$ , see Table 7). Thus, perceived credibility difference worked as a partial mediator between prior attitudes toward BP and perceived image of BP. That means, in addition to influencing perceived image of BP directly, prior attitudes toward BP also influence perceived image of BP indirectly via perceived credibility difference: the more favorable attitudes toward BP before reading BP's messages and users' comments on Facebook, the smaller difference between perceived credibility of Facebook users' comments and perceived credibility of BP's messages, the more positive perceived image of BP.

**TABLE 7**

**Summary of hierarchical regressions results**

Predicting	Model	Predictor	B	$\beta$	$p$	$R^2$	$\Delta R^2$
Perceived image of BP	1	(Constant)	3.681		.000	.023	.029
		Message-comment congruence	.338	.171	.028		
	2	(Constant)	2.664		.000	.070	.052
		Message-comment congruence	.416	.210	.007		
		Social identification	.225	.231	.003		
	3	(Constant)	3.677		.000	.113	.048
		Message-comment congruence	-1.465	-.742	.026		
		Social identification	.001	.001	.993		
		Message-comment congruence*	.490	.965	.003		
Perceived image of BP	1	(Constant)	2.287		.000	.374	.378
		Prior attitudes toward BP	.402	.615	.000		
	2	(Constant)	2.620		.000	.484	.113
		Prior attitudes toward BP	.323	.495	.000		
		Perceived credibility difference	-.223	-.357	.000		

## CHAPTER 5

### DISCUSSION

This study aimed to explore the effects of Facebook in repairing BP's damaged image in Deepwater Horizon oil spill crisis by 1) analyzing BP's crisis communication messages on Facebook to understand BP's projected image, 2) analyzing Facebook users' comments on BP's messages to examine under what situation were Facebook users' comments congruent with BP's messages, which also reflected the congruence between Facebook users' perceived images of BP and BP's projected image, and 3) carrying out an experiment to explore the influence of congruence between BP's messages and Facebook users' comments on people's perceived images of BP. This study generated some intriguing findings.

#### **General Discussion**

**BP's crisis communication on Facebook.** BP projected an image that BP is responsible, concerned about affected Gulf residents, and committed to the restoration of Gulf Coast. Rebuilding strategies dominated BP's crisis responses, but the proportion of messages using rebuilding strategies declined over time.

The results of the analyses of BP's Facebook message volume and sources suggest that BP practiced effective media relations during the crisis. The findings revealed that BP posted 10-20 messages almost every day after the explosion. Heath (2006) suggested that it is necessary for an organization-in-crisis to remain available to media and exhibit openness, otherwise, the misinformation, ambiguous information or lack of information may escalate a crisis because the public may supply their own explanation or being prone to other sources and come to their own conclusions if they cannot get information from the organizations or the media in time. In this

sense, BP did decent job in filling the news hole by keeping publics updated about its efforts in Gulf recovery and restoration.

Approximately 92 percent of BP's Facebook messages analyzed were linked to sources such as social media sites, news media outlets, corporate affiliated websites, and government operated websites. This finding indicates that BP used various communication channels to distribute information to its publics. BP was active on social media. For example, BP posted its first spill-related message on Facebook on April 20, 2010, the same day as the accident occurred, gave its first tweet on April 27, 2010, created its response YouTube channel on May 12, 2010, and launched its blog site on May 18, 2010. BP frequently shared the links to its other social media accounts on its Facebook page, and encouraged publics to check those links for more information about its recovery efforts in the Gulf. BP was also active on print and broadcast media. For example, news media outlets (40%) were the largest source for BP's messages on Facebook with the first news media linked messages posted as early as May 2, 2010. In addition, posting spill-related information from various outside sources (i.e., news media and government websites) indicates BP did a great job in monitoring the environment.

In BP's crisis communication, BP used image repair strategies (84.73%) more frequently than information giving strategies (20.24%). To be specific, rebuilding strategies (61.42%) dominated BP's crisis responses, followed by bolstering (31.74%), denial (8.09%), and diminishment strategies (3.29%). The primary use of rebuilding strategies was consistent with SCCT. Based on the levels of crisis responsibility that crises evoke, SCCT defines three crisis types: victim crisis (very little attribution of crisis responsibility), accidental crisis (low attribution of crisis responsibility), and preventable crisis (strong attribution of crisis responsibility) (Coombs, 2007). The occurrence of the Deepwater Horizon oil spill was due to

failure of cement on the bottom of the well and BP's negligence of early warning, thus, this crisis could be characterized to be both accidental crisis (technical-error accident) and preventable crisis (human-error accident). According to SCCT, crisis communication strategies should match different crisis situations, and the stronger attribution of crisis responsibility, the more accommodative strategies should be used. Especially, rebuilding strategies should be used for any preventable crisis to show the organization's efforts to make the situation right (Coombs, 2007). BP's crisis responses confirmed the SCCT-recommended strategies. It should be noted that though rebuilding cluster was used most frequently by BP, it does not mean all strategies from rebuilding cluster (i.e., rectification, compensation, regret, and apology) were used more often than strategies from other clusters. Over half of BP's messages used rectification, while seven percent used compensation, and only less than one percent used regret and apology. The predominant use of rectification and the rare use of regret and apology may be explained with the messages that BP repeatedly sent to its publics: BP has taken full responsibility for the cleanup in the Gulf, but BP was not solely responsible for the explosion and the oil spill, which was a shared responsibility among a number of different parties (BP America, June 4, September 9, September 29, 2010).

Along with the crisis communication process, the proportion of BP's messages using rebuilding strategies declined from 87.7 percent in May to 54.4 percent in December 2010, while the proportions of messages using bolstering, denial, and diminishment increased by 39.4 percent, 12.7 percent, and 2.1 percent respectively. Correspondingly, BP's crisis responses were getting more defensive as time went on. The significant shift in BP's response strategies may be due to change in BP's perceived external threats. Threat is a situational factor that determines the degree that an organization's stance close or away from accommodation (Cameron, Pang, & Jin,

2007). An organization is more likely to apply more accommodative strategies when there is high level of perceived threat, such as external and long-term threats (Jin & Cameron, 2007). In first months after the explosion, BP's external threat was overwhelming blame from the public for the spill. Therefore, BP's early Facebook strategy was dominated by rebuilding strategies (e.g., rectification) and BP might try to combat negative coverage by reminding its publics of its effort in containing the oil via various communication channels. Along with the cleanup process, in particular, when the well has been successfully sealed and the focus has shifted from recovery to restoration in Gulf coast, the external threat has shifted from publics' blame for the spill to publics' distrust in seafood safety and government investigation of the cause of the disaster. Under this situation, using defensive strategies may work better in-even if not effectively repairing, but at least - preventing further damage to BP's image, especially if the use of dispersants actually did not affect the seafood (showed in numerous official tests) and the spill was not only BP's responsibility (confirmed later by the White House oil spill commission that the oil spill was a management failure between BP, Transocean, and Halliburton).

This study also identified significant change in BP's message source selection during time period analyzed: messages linked to corporate affiliated websites and social media sites decreased by 67.6 percent and 18 percent respectively, while messages linked to news media outlets and government operated websites increased by approximately 45 percent and 11 percent respectively. It was also found that messages linked to corporate affiliated websites and social media sites were more accommodative than messages linked to news media outlets and messages linked to government managed websites. BP used information on corporate affiliated websites (e.g., bp.com) and social media (e.g., BP's accounts on Twitter, YouTube, Flickr etc.) more frequently at the early stage. That is probably because BP has relatively more control over those

sources and could use those sources to distribute favorable information, while less controlled sources such as news media were less likely to portray BP positively at that time. Another possible reason is that early messages were mainly about Gulf Coast recovery, BP knew its response efforts the best (e.g., cleaning beaches, compensating the people and communities affected, rescuing oiled wildlife, etc.) and its affiliated websites and accounts on social media could provide more detailed information. The increasing links to news media outlets and government operated websites at the restoration stage probably because the external environment might have become relatively friendly for BP after several months of effort. BP may have earned more and more favorable coverage on third-party news sources (i.e., news media and government operated websites) through BP's collaboration with experts from the industry, government, and academia on programs such as environmental sampling and monitoring, natural resource damage assessment studies, and other restoration projects, and BP's effort in restoring the Gulf Coast economic recovery by promoting tourism and restoring consumer confidence in seafood from the Gulf of Mexico. BP may also want to use news media and government-operated websites to provide strong endorsement for BP's response efforts (e.g., news reports on the progress made by BP in Gulf restoration) and issues that publics were concerned about (e.g., tests conducted by NOAA and FDA confirmed safety of Gulf seafood) because news media and official sources are believed to have high authoritativeness and reliability (Fico, 1984).

**Facebook users' comments.** Results suggest that the degree of congruence between Facebook users' comments and BP's messages was higher when BP used accommodative strategies, whereas, the degree of congruence decreased when BP's messages were getting defensive. Except for accommodation level, factors in BP's messages such as using bolstering

strategies, third party endorsement, and different sources did not influence Facebook users' comments significantly.

Facebook users' interpretation of BP's messages has polarized, with some believed that the oil spill was an accident, BP was "simply a scapegoat and a victim" (BP America, June 22, 2010), and BP has "succeeded and proved to be honest when they said they would make it right" (BP America, August 9, 2010), while others blamed BP for lying about the scale of the incident and how many barrels of oil were spilled into the Gulf on daily basis (BP America, June 25, 2010) and questioned the credibility of all of BP's messages. Generally, findings of this study showed that Facebook users were more likely to comment favorably when BP used accommodative strategies. This finding is consistent with previous studies. For example, Claeys, Cauberghe, and Vyncke's (2010) experiment indicated that preventable crises have the most negative effects on organizational reputation and that the rebuilding strategy leads to the most positive reputational restoration. Similarly, Sisco (2012) tested the effects of SCCT response strategies from a nonprofit organization, and the findings confirmed that participants had more favorable attitudes toward the organization when it used denial strategies in victim situation, diminishment and rebuilding strategies in accidental situation, and rebuilding strategies in preventable situation.

Contrary to belief, this study found bolstering strategies (i.e., endorsement of outside experts, reminder, ingratiation, concern, and justification) were not as effective as expected. Bolstering was the second most frequently used cluster by BP. Bolstering strategies are usually used to build a positive connection between an organization and its publics, therefore, bolstering strategies are considered to be effective in repairing an organization's image. For example, previous studies found that bolstering was the most effective image repair strategy when the Air Force Academy handled the sexual assault allegations in 2002 (Holtzhausen & Roberts, 2009),

and bolstering was as effective as apology when a politician made a mistake (Sheldon & Sallot, 2009). However, this study found that people did not comment more favorably on BP's messages in response to the bolstering strategies, but oppositely, people were more likely to comment favorably when BP did not use bolstering strategies. This might be explained by the role of bolstering strategies in crisis communication. The bolstering strategies are supplemental to the other three clusters (Coombs, 2007), therefore, bolstering serves for the purpose of the primary crisis communication cluster used in combination with bolstering. People may make judgments based on the primary crisis communication strategies used by BP. Therefore, people did not perceive the combination of denial and bolstering, or the combination of diminishment and bolstering as less defensive than denial or diminishment, and thus had less negative perceptions of BP. Similarly, they did not perceive the combination of rebuilding and bolstering as more accommodative than only using rebuilding, and had more positive perceptions of BP. People seem care more about the organization's attitude, which reflects in its primary crisis communication strategies. In other words, in a crisis, attitude is everything (Bernstein, 2010). Probably for the same reason, Facebook users showed no preference on one message source over another.

Surprisingly, findings of this study revealed that people were more likely to comment negatively when BP used endorsement of outside experts or third party endorsement. Third party endorsement is a relatively less explored strategy in crisis communication literature, but it deserves greater recognition considering how frequently it is used. In the oil spill crisis, BP used endorsements from third parties (e.g., government, experts, Gulf businesses, tourists, celebrities, etc.) in 472 messages (13.5%), more frequently than other strategies except for rectification. Third party endorsement is considered to be effective for defending one's image (Nelson, 1984).

Previous research suggested that in environmental crisis, it is important for an organization to work closely with third-party experts to get corporate communication messages believed (Langford, 2005). However, this study found that Facebook users were more likely to comment negatively when BP's messages engaged third parties ( $M = .11$ ) than when third party bolstering was not used ( $M = .29, t(2819) = -6.267, p < .001$ ). This could be explained by the strength of relationship between Facebook users and those third parties. According to Burt and Knez (1995), trust is likely to occur in close relations, and is unlikely in weak relations. Facebook users' relationships with government, experts, tourist, Gulf businesses, etc. are relatively weaker compared to their relationships with family, friends or those who are around. Therefore, they are less likely to be influenced by those parties.

Another reason for Facebook users' less preference for third party bolstering could be that Facebook users may attribute the third party endorsement to extrinsic motivation, for example, monetary incentives, and thus did not perceive the endorsement credible. People usually explain events based on two categories of causes: internal (dispositional) causes and external (situational) causes (Heider, 1958). Internal attribution implicates characteristics of the individual or group for having caused a particular behavior (e.g., personality, capability, and attitude), whereas external attribution refers to factors related to environment or situation that caused an event or outcome (e.g., competition, and profit seeking, etc.). Research showed that people tend to reduce multiple possible causes of an event or behavior to a single cause based on their preexisting hypotheses, suppositions, and expectation (Folkes, 1988), to be specific, when extrinsic motivation explains an event, intrinsic motivation is often discounted (e.g., Rifon, Choi, Trimble, & Li, 2004). For example, a product endorser may provide favorable comments about a product due to internal reasons (e.g., belief in the quality of the product) or external reasons (e.g.,

monetary incentives). If external reasons are found to account for the positive product comments, consumers often believe that the product is less worthy than when endorsement involves minimal or no monetary incentives (Folkes, 1988). This was confirmed in Wiener and Mowen's (1986) study, which found that second-hand autos were evaluated less positively when the mechanic who endorsed the product received incentives for the endorsement compared to when no incentives were present. Similarly, in the Deepwater Horizon oil spill case, especially on seafood testing issue, some Facebook users questioned the testing results from those third parties, whom they thought had been paid off by BP (e.g., BP America, August 25, October 31, 2010), and called for results from "non-involved, non-paid off independent scientists" (BP America, August 23, 2010).

**Effects of information congruence on image congruence.** Results of this study also empirically explained how information congruence (congruence between Facebook followers' comments and BP's messages) influences people's perceived image of BP. The analysis revealed three predictors of people's perceived image of BP: comment-message congruence, social identification, and prior attitudes toward BP. Perceived credibility of BP's messages partially mediated the influence of prior attitudes on perceived image of BP, and completely mediated the influence of social identification on perceived image of BP. People's perceived image of BP exerted direct positive influence on their behavior intentions. Accommodation level of BP's messages was not found to be a significant factor in this study.

As predicted, findings indicate that comment-message congruence predicted perceived image of BP, with perceived image being positive when comments and messages were congruent, and perceived image being negative when comments and messages were incongruent. This could be explained by the dimension of consensus of Kelly's (1973) covariation principle of the

attribution theory, which suggests that a person feels more confident in making a judgment about an event if all observers perceive the event in the same way. People were more likely to believe that the impression of BP was true reflection of BP's inherent properties when information from Facebook users and information from BP was consistent. Additionally, this finding confirmed the critical influence of relationship strength on trust. Compared with the endorsement of the third parties in BP's Facebook messages, Facebook users' comments seemed to be more persuasive.

Social identification was another predictor of people's perceived image of BP. As found in the current study, when exposed to incongruent information, people felt more closely connected to Facebook users, perceived Facebook users' comments more credible than BP's messages, and thus were more likely to perceive BP negatively. The current study also found that people felt closer connection to Facebook users when the information from Facebook users and from BP was incongruent, but no significant difference in social identification when the information from Facebook users and from BP was congruent. It probably because people do not need to decide which side of information is more credible when the information from the two parties is congruent, but have to weigh in both types of information when the information is incongruent.

Findings of this study revealed a significant interaction effect of comment-message congruence and social identification on perceived corporate image. Though people with high social identification perceived BP more positively when exposed to congruent information than incongruent information, those with low social identification perceived BP more positively when read incongruent information than read congruent information. An explanation could be that people with loose tie with Facebook users looked at Facebook users' comments with distrust (*F*

(1, 163) = 21.377,  $p < .001$ ,  $R^2 = .111$ ,  $b = .509$ ). Therefore, they might perceive BP as a victim when users' comments were incongruent with BP's messages, tended to trust BP's messages and thus formed positive impression of BP. For the same reason, because they are susceptible to Facebook users' comments, when Facebook users' comments endorse BP's messages, they might attribute the motives of those favorable comments to external causes such as monetary incentives, and thus perceived BP negatively.

People's prior attitudes were a strong predictor of their perceived image of BP ( $R^2 = .374$ ). Prior attitudes influenced perceived image of BP both directly and indirectly via perceived credibility of information: the more favorable prior attitudes toward BP, the smaller difference between perceived credibility of Facebook users' comments and perceived credibility of BP's messages, the more positive perceived image of BP. This finding confirmed SCCT's claim that stakeholders' prior attitudes toward an organization have a protecting effect of the organization image (Coombs & Holladay, 2001, 2006; Schwarz, 2012b). In other words, stakeholders who have favorable precrisis relationships with the organization-in-crisis would view the organization as credible, and the more credible the organization is perceived, the more likely that stakeholders would accept and believe the organization's side of story, and lower the levels of attribution of crisis responsibility (Coombs, 2007).

Contrary to predictions, people's attitudes toward BP did not change significantly after being exposed to the information on Facebook, no matter Facebook users' comments were congruent or incongruent with BP's messages. This finding is consistent with the earlier finding of the content analysis of Facebook users' comments, which revealed no significant difference between the degree of congruence in one month and the month next to it. A possible reason is that people's attitudes toward an organization are more relevant to the organization's reputation

than image. Image is the immediate perception of an organization at a single point of time (Sherman, 1999), and reputation is an aggregation of an individual's perception and judgment of how well the organization is meeting stakeholders' demands and expectations over an extended period of time (e.g., Fombrun & Shanley, 1990; Gotsi & Wilson, 2001). This study found that congruent comments and message at a given time (e.g., in the experiment, participants were exposed to one message from BP and ten comments from Facebook users) could exert significant impact on people's perceived image of BP, but was not enough to change people's prior attitudes toward BP. It confirmed Gray and Balmer's (1998) argument that image could be constructed quickly by corporate communication messages, while reputation could only be constructed by an organization's consistent performance.

### **Theoretical and Practical Implications**

Despite the widespread belief that Facebook is a valuable crisis communication tool, there is limited conceptual or empirical research that systematically addresses how to use Facebook effectively in crisis communication, its effects, and factors that influence the effects. With a focus on BP's use of Facebook following the Deepwater Horizon oil spill crisis in 2010, the current study analyzed BP's messages, Facebook users' comments, and the effects of message-comment congruence on people's perceived image of BP to explore the role of Facebook in BP's image restoration. This study offers theoretical contributions and managerial implications in the context of crisis communication on Facebook for academicians and practitioners.

**Theoretical implications.** This study contributes to SCCT by exploring its application in Web 2.0 and supported many of its theoretical claims in Facebook environment, including 1) in a preventable crisis, more accommodative strategies such as rebuilding strategies are more likely to lead to positive attitudes and comments on corporate messages, 2) bolstering strategies are

usually used in conjunction with denial, diminishment, or rebuilding strategies, and 3) precrisis organization-stakeholder relationship positively influences stakeholders' perceived credibility of corporate crisis communication messages, and stakeholders' perceived image of the organization during the crisis.

This study also provides some suggestions for revising the SCCT-recommended strategies. In terms of information-giving strategies, first, this study attempts to operationalize the concepts of instructing information and adjusting information. Though SCCT argues that the two types of information is essential part of crisis responses and must be provided for all kinds of crises (Coombs, 2006), previous research frequently dropped the responses when apply SCCT. One possible reason might be the vague differences between information giving strategies and image repair strategies based on the definitions offered by SCCT. In the current study, the researcher argues that the two types of strategies could be distinguished based on the purpose of using the strategies: to solely provide information (information giving strategy), or to cultivate favorable organization-stakeholder relationship and restore stakeholders' confidence in the organization (image repair strategy). In this sense, instructing information focuses on telling publics what to do, and adjusting information focuses on reducing publics' uncertainty by providing updates on crisis status. What initially classified as information giving strategies, such as corrective actions, expressing compassion and concerns (Coombs, 2007) could be categorized as image repair strategies.

Second, this study suggests that in a preventable crisis, information giving strategies could be used throughout the crisis response rather than before image repair strategies. This study found that BP used information giving strategies throughout the time period analyzed, and used information giving strategies in conjunction with image repair strategies sometimes (4.98%).

This finding is different from what suggested in SCCT and previous research, which argue that different stages of a crisis require communicating different types of information, the first messages must present instructing information, followed by adjusting information, and image repair information, and only after instructing information and adjusting information is provided should crisis managers turn their attention to reputation repair (Coombs, 2007; Sturges, 1994). However, this study found that there were no clear boundaries among the stages using instructing information, adjusting information, and image repair in the Deepwater Horizon oil crisis. BP started using the three types of strategies almost simultaneously. SCCT's recommendation on the order of the three types of information may be more appropriate in victim crises (e.g., natural disasters), in which the organization has very little attribution of crisis responsibility, and publics suffer from high level of uncertainty about the situation. In those cases, information giving strategies may be used more frequently than image repair strategies, as confirmed in Holladay's (2012) study of media coverage of chemical accidents, or as Coombs (2007) argued, some crises can be managed effectively even without using image repair strategies. Whereas, in a preventable crisis with strong attribution of crisis responsibility, an organization may try to repair its image as early as possible, and supplement and reinforce image repairing with instructing and adjusting information to show its concern for its publics, just as what BP did in its handling of the oil spill crisis.

In terms of image repair strategies, first, as aforementioned above, rectification and concern from information giving strategies could be added to image repair strategies. Additionally, previously barely explored strategy such as third party endorsement deserves greater attention because it was used much more frequently than all SCCT-recommended strategies in BP's crisis response except for rectification. "Justification" (not the "justification")

in SCCT strategies), which represents the strategy explaining the reasons for an organization's crisis responses, could be added to SCCT's bolstering cluster.

Second, this study suggests that bolstering could be used alone in crisis communication. According to SCCT, bolstering should be used as supplemental strategies to other three clusters because bolstering strategies focus on the organization, they would seem egocentric if used alone (Coombs, 2007). However, the findings of the present study revealed no significant differences between Facebook users' responses to messages using bolstering alone and to messages using bolstering in conjunction with other strategies. That indicates in a preventable crisis, using bolstering alone does not have significantly negative impact. Similar results were found in victim crisis and accidental crisis (Kim & Liu, 2012). Therefore, in all types of crises, bolstering strategies could be used in isolation to build positive connection between an organization and its publics.

Third, this study suggests, depending on crisis situations, denial strategies could be used in conjunction with diminishment and rebuilding strategies. SCCT recommends that to be consistent, denial should not be mixed with either diminishment or rebuilding strategies (Coombs, 2007). SCCT's recommendation might be more appropriate for a single crisis because an organization cannot both deny and admit the organization's responsibility for the crisis. However, this recommendation does not reflect the complexity of real world crises. A crisis might consist of crises on different levels, and generate new crises during the crisis handling process. Adopting denial on one level of the crisis does not contradict adopting rebuilding or diminishment on other level of the crisis. For example, the Deepwater Horizon oil spill crisis involved crises such as the occurrence of the explosion and oil spill, environmental damage, reports that BP prohibited its employees from speaking to the media, reports that BP used clean

sand to cover oil or oiled sand, cleanup workers' illnesses are oil-related, and safety of Gulf seafood, etc. Claiming that BP did not use clean sand to bury oiled sand (denial) is consistent with reminding publics of BP's Gulf recovery efforts (rebuilding). For the same reason, claiming that the Gulf seafood is safe for consumption (denial) serves the same purpose with informing publics' of BP's efforts in restoring the Gulf economy (rebuilding).

The current study constitutes the first of its kind that investigated the effects of crisis communication information on corporate image through the lens of Kelly's (1973) covariation principle of attribution theory. According to the covariation principle, there are four criteria that a person uses to make an attribution based on multiple observations: distinctiveness, consistency over time, consistency over circumstance, and consensus (Kelly, 1973). The study confirmed the consensus dimension by producing evidence that congruence between corporate Facebook messages and Facebook users' comments (i.e., information congruence) positively influence people's perceived corporate image. Future audience-oriented empirical research on crisis communication could test the effects of other dimensions on corporate image, which include distinctiveness, consistency over time (e.g., consistent information congruence over time), and consistency over circumstances (e.g., consistent information congruence on different media platforms). The study revealed that consensus (information congruence at a point of time) alone did not significantly change people's prior attitudes toward BP. Future research could also examine whether the combinations of two or more of the four dimensions is effective in altering people's prior attitudes toward an organization.

This study confirmed the social identity theory by revealing that people with high identification perceived Facebook users' comments more credible than BP's messages. The finding that strong identification led to high perceived credibility is consistent with Jin and

Phua's (2014) research, which found followers who developed a strong identification with celebrity endorsers on Twitter viewed those celebrities as more credible, trustworthy, attractive, and competent than ordinary Twitter users. However, it should be noted that the current study found that high identification led to high perceived credibility of Facebook users' comments only when BP's messages and Facebook users' comments were incongruent. No significant differences were found when the two types of information were congruent. It might be because part of comments' credibility was transferred to the corporate messages when the comments were congruent with the corporate messages. Future studies may want to further explore the relationship between social identification and perceived credibility of information.

**Practical implications.** The findings of the study also bear practical significance. Given the critical role of people's prior attitudes in crisis communication, practitioners may want to decide whether or not use Facebook in crisis communication based on the organization-stakeholder relationship before the crisis. For those organizations having strong and favorable precrisis organization-stakeholder relationship, using Facebook may have more benefits than risks because those people who have preexisting favorable attitudes are more likely to comment positively on the organization's Facebook page, and those positive comments are more likely to positively influence others' perceived image of the organization, and thus create a virtuous circle. For the same reason, an organization with poor relationship with its stakeholders may want to use Facebook with caution because though not certainly (other factors may also influence a person's intention to write comments), there is still possibility that stakeholders may post unfavorable comments. Moreover, previous research has indicated that extreme dissatisfaction correlates with high propensity to post comments online (Dellarocas & Narayan, 2006).

In a preventable crisis, practitioners may want to primarily adopt accommodative strategies and information-giving strategies, and avoid using defensive strategies on Facebook. When an organization uses defensive strategies, even if the organization told the truth and authorities or experts endorsed the organization's statements, Facebook users might still leave negative comments, and those comments would influence more people's perceptions of the organization. In that case, traditional media might be better choices than social media. For example, BP might want to use newspapers, radios, and corporate website (it does not allow leaving comments) instead of social media to distribute information about controversial issues such as seafood safety.

Removing negative comments on Facebook may not be a good idea. This study found that not all negative comments on Facebook are critical to an organization's image. Negative comments on social media might be a reason why some organizations remain hesitant to use social media for crisis communication. Some organizations using social media in crisis communication try to control unfavorable comments by using methods such as removing those comments. For example, some users complained that BP deleted their comments on BP's Facebook page. However, findings of this study indicate that only those who feel closely connected to Facebook users tend to perceive BP negatively when read negative comments. Those feeling loose connection with Facebook users perceived BP more positively when read negative comments compared to positive comments. In this sense, removing negative comments on Facebook may not guarantee positive corporate image, whereas keeping negative comments may not always lead to negative corporate image.

Practitioners might want to proceed cautiously when using third party bolstering because third party bolstering may not be unconditionally effective in crisis situations. In BP's crisis

response, endorsements from government, experts, tourists, celebrities, local businesses etc. did not work effectively as the publics might be skeptical about their motives. In this sense, if an organization-in-crisis wishes to benefit from the positive things that third parties say about it, it might be better that those parties appear to gain little or nothing by offering their endorsements.

In terms of source selection, corporate affiliated websites and social media sites might be good sources. The study revealed that people do not comment more positively on corporate-related information from news media and government operated websites than on corporate-related information from corporate affiliated websites and corporate social media sites. Therefore, if an organization could not get much coverage on traditional media, the organization may want to use information on corporate websites and social media sites as primary source in the crisis communication.

In conclusion, as found in BP's case, Facebook shows potential to be an effective crisis communication tool, but its effectiveness is limited by an organization's crisis communication strategies, whether Facebook users' comments endorse the organization's messages, and the publics' perceived social connection to Facebook users. The effectiveness is also limited by the publics' prior attitudes toward the organization. BP's case also suggests that the benefits of using Facebook in an organization's crisis communication might be accompanied by some risks. For example, the organization's Facebook page might be full of irrelevant comments with unknown influence on people's perceptions of the organization (in BP's case, during the time period analyzed, only approximately one tenth of comments were relevant comments), and it might be hard to hide once the organization deleted users' comments.

### **Limitations and Future Research**

Notwithstanding the contributions, this study faces several limitations. First, the study only explored the effects of Facebook in a preventable crisis. Though Facebook is found to be the second most frequently used social networking site in crisis planning (Wigley & Zhang, 2011), Facebook is only a small slice of the media used by an organization in crisis communication. For example, in the Deepwater Horizon oil spill crisis, in addition to Facebook, BP also distributed information via channels such as Twitter, blog, YouTube, Flickr, corporate website, search engines such as Google.com, print media, and television etc. Future research could further examine the effects of other social media, combination of two or more social media, or combination of social media and other media forms in crisis communication. Future research could also investigate the effects of Facebook or other social media in other types of crises, such as crises with lower crisis responsibility (i.e., victim crises, and accidental crises).

Second, this study only analyzed BP's messages and Facebook users' comments on BP America's Facebook page. Therefore, future research could consider analyze the two types of information on other BP-related Facebook pages, for example, the Facebook page of BP plc., the parent company. Future research could also analyze BP's responses within a comment stream.

Third, this study only analyzed Facebook users' comments that responded to BP's messages. Future research could also analyze Facebook users' comments responding to other users' comments to get a complete picture of crisis communication on social media, which includes organization-user communication and user-to-user communication.

Fourth, the study only analyzed BP's messages and following Facebook users' comments in 2010, and future studies could explore its long-term crisis communication by including the reputation recovery phase. Crisis management can be divided into four phases: proactive phase (environment scanning and issue management), strategic phase (risk communication), reactive

phase (crisis communication), and recovery phase (reputation management) (Wilcox & Cameron, 2006). It is crucial to understand an organization's crisis communication strategies even years after the crisis because just as the long-term damage caused by a crisis, reputation repair and recovery is a long-term process.

Last, this study used a student sample to examine the impact of information congruence on perceived image of BP. Though undergraduate students were active users of Facebook, and most of them know BP or are BP's customers. Using non-student sample could enhance the generalizability of the research findings. Furthermore, future research could investigate what motivate an organization's publics to write comment on the organization's Facebook page (or other social media) during a crisis.

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## APPENDICIES

### APPENDIX A Coding Sheet

#### **I. BP America's Facebook messages**

1. Number (ID): \_\_\_\_\_
2. Date: \_\_\_\_\_
3. Number of "likes": \_\_\_\_\_
4. Number of comments: \_\_\_\_\_
5. Number of shares: \_\_\_\_\_
6. Type of message:
  - 1) Wall post
  - 2) Event post
  - 3) Note post
  - 4) Hyperlink to other information
7. Source of hyperlink
  - 1) News media outlet
  - 2) Social media site
    - YouTube
    - Flickr
    - Twitter
    - Blog
    - Facebook
  - 3) Corporate affiliated/managed website
  - 4) Government operated website

#### **II. BP's crisis communication strategies**

8. Crisis communication strategies
  - 1) Information giving strategy
  - 2) Image repair strategy
  - 3) Both information giving strategy and image repair strategy
9. Information giving strategies
  - 1) Instructing information
  - 2) Adjusting information
    - Who, what, where, when about the crisis
    - Response efforts
    - Event notice
  - 3) Both instructing information and adjusting information
10. Image repair strategies
  - 1) Denial cluster
    - Attack the accuser (confronting person claiming a crisis occurred)

- Denial (asserting no crisis)
- Scapegoat (shifting the blame to others outside the organization)
- 2) Diminishment cluster
  - Excuse (denying intent to do harm or claiming inability to control)
  - Minimization (minimizing severity of damage)
- 3) Rebuilding cluster
  - Compensation (providing money or other gifts to the victims)
  - Rectification (actions taken to prevent the repeat of the crisis)
  - Regret (feeling bad about the crisis)
  - Apology (taking full responsibility)
- 4) Bolstering cluster
  - Reminder (telling stakeholders about its past good works)
  - Ingratiation (praising stakeholders)
  - Victimization (reminding stakeholders that the organization is a victim of the crisis, too)
  - Endorsement of outside experts (reporting positive reviews from third parties)
  - Justification (explaining reasons for its response)
  - Concern (addressing publics' concerns)

11. Level of accommodation of BP's crisis communication strategy:

Very Defensive	Defensive	Neutral	Accommodative	Very Accommodative
1	2	3	4	5

### III. Facebook users' comments on BP's postings

12. Congruence between Facebook users' comments and BP's messages

Incongruent	Neutral	Congruent
-1	0	1

## APPENDIX B Questionnaire

*Hello! I am Lan Ye, a PH.D student at College of Communication & Information Sciences, the University of Alabama. This questionnaire is designed to understand your perception of corporate Facebook page. I would greatly appreciate your help by providing me with your thoughts on the following questions. All information that you provide will be completely confidential and will be used only for research. Participation is strictly voluntary and you are free to withdraw from the survey at any time. If you have any questions, please feel free to contact me at 859-559-3410 or [lye4@crimson.ua.edu](mailto:lye4@crimson.ua.edu).*

Please choose the answer that is the closest to your opinion.

Please indicate your age

- Under 19
- 19 or older (If 'under 19' is chosen, the survey will be terminated)

1. Do you know that companies have accounts on social media (e.g., Facebook, twitter, etc.)?

- Yes
- No

2. Do you follow or did you ever follow any company's social media sites (e.g., Facebook, twitter, etc.)

- Facebook
- Twitter
- Other (please specify) \_\_\_\_\_
- No (please go to question #4 if you chose "No")

3. If you visited companies' social media site(s), you visited the companies' social media site(s) to:  
(please select all that apply)

- seek information about the company
- look for promotion information or coupons.
- other (please specify) \_\_\_\_\_

4. Do you agree that companies with social media presence are more open than others?

Strongly disagree    1       2       3       4       5       6       7       Strongly agree

5. Do you agree that companies are more trustworthy on social media than on traditional media (e.g., newspaper, television, and radio)?

Strongly disagree    1       2       3       4       5       6       7       Strongly agree

6. Have you heard about British Petroleum (BP), a British multinational oil and gas company?

- Yes (please go to question #7)
- No (please go to question #9)

7. Did you ever fill the tank at a BP gas station?

- Yes
- No

8. How do you think about BP?

Dislike	1	2	3	4	5	6	7	Like
Negative	1	2	3	4	5	6	7	Positive

Unfavorable	1	2	3	4	5	6	7	Favorable
Bad	1	2	3	4	5	6	7	Good

**Please read the given messages and answer following questions.**

9. I have a lot in common with other Facebook users

Strongly disagree	1	2	3	4	5	6	7	Strongly agree
-------------------	---	---	---	---	---	---	---	----------------

10. I feel strong ties to other Facebook users

Strongly disagree	1	2	3	4	5	6	7	Strongly agree
-------------------	---	---	---	---	---	---	---	----------------

11. I find it difficult to form a bond with other Facebook users

Strongly disagree	1	2	3	4	5	6	7	Strongly agree
-------------------	---	---	---	---	---	---	---	----------------

12. I don't feel a sense of being 'connected' with other Facebook users

Strongly disagree	1	2	3	4	5	6	7	Strongly agree
-------------------	---	---	---	---	---	---	---	----------------

13. I feel I belong to the group of Facebook users

Strongly disagree	1	2	3	4	5	6	7	Strongly agree
-------------------	---	---	---	---	---	---	---	----------------

14. I feel BP's messages on Facebook are:

Untrustworthy	1	2	3	4	5	6	7	Trustworthy
Dishonest	1	2	3	4	5	6	7	Honest
Unreliable	1	2	3	4	5	6	7	Reliable
Irresponsible	1	2	3	4	5	6	7	Responsible
Insincere	1	2	3	4	5	6	7	Sincere

15. I feel Facebook users' comments are:

Untrustworthy	1	2	3	4	5	6	7	Trustworthy
Dishonest	1	2	3	4	5	6	7	Honest
Unreliable	1	2	3	4	5	6	7	Reliable
Irresponsible	1	2	3	4	5	6	7	Responsible
Insincere	1	2	3	4	5	6	7	Sincere

16. BP is basically honest.

Strongly disagree	1	2	3	4	5	6	7	Strongly agree
-------------------	---	---	---	---	---	---	---	----------------

17. BP is a reputable organization.

Strongly disagree	1	2	3	4	5	6	7	Strongly agree
-------------------	---	---	---	---	---	---	---	----------------

18. BP is concerned with the well-being of its publics.

Strongly disagree	1	2	3	4	5	6	7	Strongly agree
-------------------	---	---	---	---	---	---	---	----------------

19. I do NOT trust BP to tell the truth about the incident.

Strongly disagree	1	2	3	4	5	6	7	Strongly agree
-------------------	---	---	---	---	---	---	---	----------------

20. I would prefer to have nothing at all to do with BP.

Strongly disagree	1	2	3	4	5	6	7	Strongly agree
-------------------	---	---	---	---	---	---	---	----------------

21. Under most circumstances I would be likely to believe what BP says about the incident.

Strongly disagree	1	2	3	4	5	6	7	Strongly agree
-------------------	---	---	---	---	---	---	---	----------------

22. BP is basically DISHONEST.

Strongly disagree	1	2	3	4	5	6	7	Strongly agree
-------------------	---	---	---	---	---	---	---	----------------

23. The reputation of BP is low.

Strongly disagree	1	2	3	4	5	6	7	Strongly agree
-------------------	---	---	---	---	---	---	---	----------------

24. BP is NOT concerned with the well-being of its publics.

Strongly disagree	1	2	3	4	5	6	7	Strongly agree
-------------------	---	---	---	---	---	---	---	----------------

25. The image of BP is good.

Strongly disagree	1	2	3	4	5	6	7	Strongly agree
-------------------	---	---	---	---	---	---	---	----------------

26. I would like to visit BP's Facebook page in the future.

Very unlikely	1	2	3	4	5	6	7	Very likely
---------------	---	---	---	---	---	---	---	-------------

27. I would like to comment on BP's messages on its Facebook page.

Very unlikely	1	2	3	4	5	6	7	Very likely
---------------	---	---	---	---	---	---	---	-------------

28. I would like to respond to others' comments on BP's Facebook page.

Very unlikely	1	2	3	4	5	6	7	Very likely
---------------	---	---	---	---	---	---	---	-------------

29. I would like to seek more information about BP on BP's other social media sites (e.g., twitter).

Very unlikely	1	2	3	4	5	6	7	Very likely
---------------	---	---	---	---	---	---	---	-------------

30. I will say positive things about BP to others

Very unlikely	1	2	3	4	5	6	7	Very likely
---------------	---	---	---	---	---	---	---	-------------

31. I will speak of BP's good sides

Very unlikely	1	2	3	4	5	6	7	Very likely
---------------	---	---	---	---	---	---	---	-------------

32. I will recommend others buy products of BP

Very unlikely	1	2	3	4	5	6	7	Very likely
---------------	---	---	---	---	---	---	---	-------------

33. I will be proud to say to others that I am BP's customer.

Very unlikely	1	2	3	4	5	6	7	Very likely
---------------	---	---	---	---	---	---	---	-------------

34. How do you think about BP company?

Dislike	1	2	3	4	5	6	7	Like
Negative	1	2	3	4	5	6	7	Positive
Unfavorable	1	2	3	4	5	6	7	Favorable
Bad	1	2	3	4	5	6	7	Good

35. What is your intention to purchase the products of BP?

Never	1	2	3	4	5	6	7	Definitely
Definitely don't intend to buy	1	2	3	4	5	6	7	Definitely intend to buy
Very low purchase	1	2	3	4	5	6	7	Very high purchase

interest								interest
Definitely not buy	1	2	3	4	5	6	7	Definitely buy
Probably not	1	2	3	4	5	6	7	Probably buy

36. Please describe, in as much detail as possible, what this study was about.

---



---

**Please tell us something about your usage of social media**

37. Do you use social media?

- Yes
- No

38. Which kind of social media do you use most frequently?

- Facebook
- Twitter
- LinkedIn
- YouTube
- Other (please specify) \_\_\_\_\_

39. In the past week, on average, approximately how many minutes per day did you spend on social media?

- No time at all
- Less than 10 minutes
- 10 to 30 minutes
- More than 30 minutes, up to 1 hour
- More than 1 hour, up to 2 hours
- More than 2 hours, up to 3 hours
- More than 3 hours

**Please rate your answers to following statements:**

40. Social media are part of my everyday activity

Strongly disagree    1       2       3       4       5       6       7       Strongly agree

41. Social media has become part of my daily routine

Strongly disagree    1       2       3       4       5       6       7       Strongly agree

42. I feel out of touch when I haven't logged onto social media for a while

Strongly disagree    1       2       3       4       5       6       7       Strongly agree

43. I feel I am part of the social network community

Strongly disagree    1       2       3       4       5       6       7       Strongly agree

44. Are you?

- Male
- Female

45. Your age: \_\_\_\_\_ years old

46. What is your status at the university of Alabama?

- Freshman
- Sophomore
- Junior
- Senior

## APPENDIX C

### BP (Defensive Communication Strategies) & Facebook Users (Congruent Comments)

**facebook**

**BP America**  
719,941 likes, 8,007 talking about this

Energy/Utility  
Learn more about BP and our commitment to America's energy security and economy.

About Photos About BP Commenting Careers

**BP America**  
April 20, 2013

After considerable testing, federal and state officials report that none of the Gulf area fish kills were due to the oil spill. Additionally, seafood testing has repeatedly shown that Gulf seafood is safe to eat. "All of the seafood tests have come back with a clean bill of health," said Ewell Smith, president of the Louisiana Seafood Promotion and Marketing Board, "It is the most tested food source in the world right now." Business for seafood distributors around the country is beginning to return to normal. Jimmy Galle of Gulfish LP, a distributor in California has seen his sales grow again after a few lean months. "The shrimp has been nothing less than spectacular lately," he said.

Like · Comment · Share 109

Sharon Bravo, Amanda Hollis, Liza Baker and 215 others like this. Top Comments

**Sarah Lara** Heading to get a shrimp Po'boy!! Good news BP. Thanks for sharing and thanks for all what you are doing!!  
April 20 at 9:00 am

**Anthony Brown** Just eat the food! It's good. It's tasty!  
April 20 at 10:23 am

**Lisa Shelby** I got fresh shrimp from the panhandle last week. It was delicious!!  
April 20 at 3:23 pm

**Katherine Griffin** This is a wonderful news!  
April 21 at 9:36 am

**Terry Collins** I'm happy that the Gulf has the power to restore itself, and the seafood is safe to eat.  
April 21 at 11:06 am

**Lorena Burke** Excellent news!  
April 21 at 11:10 am

**Brian Riley** Fantastic!!  
April 21 at 6:50 pm

**Jeff Litton** That's a good news indeed!  
April 22 at 8:09 am

**Rebecca Harris** Why do REFUSE to accept FACTS. Thousands of tests have shown the seafood to be safe. Have you been eating seafood from the Gulf? If so, then continue.  
April 22 at 7:00 pm

**Andy Moore** I just bought shrimp and it is yummy!! That's all I want to say!  
April 22 at 6:15 pm

view more comments

## BP (Defensive Communication Strategies) & Facebook Users (Incongruent Comments)

**facebook**

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Like · Comment · Share 109

Sharon Bravo, Amanda Hollis, Liza Baker and 215 others like this. Top Comments

**Sarah Lara** I am not eating it .... Still  
April 20 at 9:00 am

**Anthony Brown** I'll take my shrimp with a side of Corexit and a glass of oil. Thanks.  
April 20 at 10:23 am

**Lisa Shelby** BP, I really hate the way you lie. No seafood for me nor am I going into the water. By the way, BP America is BP un-American.  
April 20 at 3:23 pm

**Katherine Griffin** Hmm... they put up this site to put out information to the public and they put out what THEY WANT YOU TO HEAR.  
April 21 at 9:35 am

**Terry Collins** I'll never eat seafood from the Gulf... NEVER!!  
April 21 at 11:05 am

**Lorena Burke** Let us NOT FORGET the 11 LIVES lost in this disaster!!!!!!  
April 21 at 11:10 am

**Brian Riley** It only killed humans.  
April 21 at 6:50 pm

**Jeff Litton** That's right people...BP killed no fish!!! Awesome BP!!  
April 22 at 8:09 am

**Rebecca Harris** BP, please be quiet. You're only embarrassing yourselves. In the long run, the truth of your incompetency will be completely exposed.  
April 22 at 7:00 pm

**Andy Moore** BP just admitted again that the seafood only being tested for hydrocarbons that means oil! In case you didn't know. That's not a dispersant test! Only oil BP is lying to you. All seafood is not safe! DONT EAT IT!!!  
April 22 at 6:19 pm

[view more comments](#)

## BP (Accommodative Communication Strategies) & Facebook Users (Congruent Comments)

**facebook**

**BP America**  
719,941 likes, 8,007 talking about this

Energy/Utility  
Learn more about BP and our commitment to America's energy security and economy.

About Photos About BP Commenting Careers

**BP America**  
April 20, 2013

Today marks the third anniversary of the Deepwater Horizon accident in the Gulf of Mexico. Eleven people died on April 20, 2010 and at BP our thoughts are with their families, friends and colleagues. We deeply regret the loss of their lives and we are continuing to take action to meet our commitments to the Gulf of Mexico community and to implement what we have learned worldwide. Today I have asked all of BP's people to remember the colleagues who died and to take a moment to remind ourselves of why we are continuing to work to make our company safer and stronger for the years ahead.

Bob Dudley, Group Chief Executive, BP

Like · Comment · Share 108

Sharon Bravo, Amanda Hollis, Liza Baker and 215 others like this. Top Comments

**Sarah Lara** I'm glad BP is doing something positive after the accident that happened. Keep up the good work, BP, for a good environment. Thank you!  
April 20 at 9:00 am

**Anthony Brown** Glad to hear that BP is doing their job.  
April 20 at 10:23 am

**Lisa Shelby** Great they're doing something positive to help the ecological system. Everyone makes mistakes and it's sad there are people still complaining and holding grudges when they are the very ones using oil and energy each day...Guit your griping and do something positive too!  
April 20 at 3:23 pm

**Katherine Griffin** BP is doing more and more each day in the Gulf area. I think they want to do the right thing. They want to bring things back if not better than the way they were before the spill took place.  
April 21 at 9:36 am

**Terry Collins** I think it's good that BP is being responsible and also the fact that they are also looking at alternative energies.  
April 21 at 11:05 am

**Lorena Burke** Thank you BP for showing integrity when other petroleum companies care more for the bottom line than the environment!  
April 21 at 11:10 am

**Brian Riley** Most people run from their problems, at least BP continues to try to fix theirs!! Thank you, BP!  
April 21 at 6:50 pm

**Jeff Litton** I think you guys have done a great job in doing the best that you can in dealing with this unprecedented tragedy.  
April 22 at 8:09 am

**Rebecca Harris** BP YOU ARE DOING A GREAT JOB!!! People how about instead of wasting time complaining about BP we all join together in Prayer for the Gulf coast and also the employee's of BP!!! God bless you all.  
April 22 at 7:09 pm

**Andy Moore** This is great, BP!! Thanks for posting!!  
April 22 at 8:15 pm

[view more comments](#)

## BP (Accommodative Communication Strategies) & Facebook Users (Incongruent Comments)

**facebook**

**BP America**  
719,941 likes, 8,007 talking about this

Energy/Utility  
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**BP America**  
April 20, 2013

Today marks the third anniversary of the Deepwater Horizon accident in the Gulf of Mexico. Eleven people died on April 20, 2010 and at BP our thoughts are with their families, friends and colleagues. We deeply regret the loss of their lives and we are continuing to take action to meet our commitments to the Gulf of Mexico community and to implement what we have learned worldwide. Today I have asked all of BP's people to remember the colleagues who died and to take a moment to remind ourselves of why we are continuing to work to make our company safer and stronger for the years ahead.

Bob Dudley, Group Chief Executive, BP

Like · Comment · Share 109

Sharon Bravo, Amanda Hollis, Liza Baker and 215 others like this. Top Comments

**Sarah Lara** The oil is not gone— it has been sprayed with so much dispersant to the bottom of the sea at the well directly that it no longer floats. For BP, "out of sight is out of mind" and BP hopes everyone else will think that way too.  
April 20 at 9:00 am

**Anthony Brown** A lot more than just 11 BP employees died because of your company's mistake. Millions of fish, animals, and plants, the economies of gulf cities, and the livelihoods of thousands of people, you killed them all.  
April 20 at 10:23 am

**Lisa Shelby** Besides the decent job BP has done cleaning the gulf, BP actually spilled the oil that has to be cleaned. After they did that, they lied about how bad the spill was, they lied to get the permits to drill, and God knows what else they lied about.  
April 20 at 3:23 pm

**Katherine Griffin** And they lied about how much OIL IS STILL IN THE GULF also!!!  
April 21 at 9:36 am

**Terry Collins** It's not over, try and tell that the fishermen who have been hit hard. Harvest of shrimp, oysters, clams and various finfish are still down and there is still oil in the bayou. We've been waiting on a "dislike" button for years. Maybe BP should buy one?  
April 21 at 11:05 am

**Lorena Burke** Thank you for the little things you've done, to try and fix the really harmful big thing you did. I will never support BP. Sad that they spend money on promotional videos, but not on keeping our earth safe.  
April 21 at 11:10 am

**Brian Riley** Thank you for the destruction of our Mexican Gulf.  
April 21 at 6:50 pm

**Jeff Litton** 719,941 "LIKES" which YOU BOUGHT! Your lies don't sink deeply with everyone. It floats on the surface like the millions of gallons of toxin you've poured into our ocean. Good Job? No - I'm not that dumb. Bad job BP, bad job.  
April 22 at 8:09 am

**Rebecca Harris** Don't believe everything you read here. Spin spin spin...  
April 22 at 7:00 pm

**Andy Moore** No matter what BP is doing, a couple million barrels did spill, and as a direct result, it hurt the Gulf Coast economically.  
April 22 at 8:15 pm

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## **APPENDIX D**

### **Measure of Variables**

#### **Measure of attitude (Holbrook & Batra, 1987)**

1. Dislike/Like
2. Negative/Positive
3. Unfavorable/Favorable
4. Bad/Good”

#### **Measure of perceived credibility of messages (Tuppen, 1974)**

1. Untrustworthy/Trustworthy
2. Dishonest/Honest
3. Unreliable/Reliable
4. Irresponsible/Responsible
5. Insincere/Sincere

#### **Measure of corporate image (Coombs & Holladay, 1996, 2001)**

1. The organization is basically honesty.
2. The organization is a reputable organization.
3. The organization is concerned with the well-being of its publics.
4. I do not trust the organization to tell the truth about the incident.
5. I would prefer to have nothing at all to do with the organization.
6. Under most circumstances, I would be likely to believe what the organization says.
7. The organization is basically dishonest.
8. The reputation of the organization is low.
9. The organization is not concerned with the well-being of its publics.
10. The image of the organization is good.

#### **Measure of behavioral intention**

##### **Measure of company Facebook page engagement intention (Lee, Kim, & Kim, 2011)**

1. How likely would you visit BP’s Facebook page?
2. How likely would you comment on BP’s messages?
3. How likely would you respond to others’ comments on BP Facebook page?
4. How likely would you seek more information about BP on other social media used by BP (e.g., twitter)?

##### **Measure of product/service purchase intention (Spears & Singh, 2004)**

5. Never/Definitely
6. Definitely do not intend to buy/ Definitely intend to buy
7. Very low purchase interest/Very high purchase interest
8. Definitely not buy it/Definitely buy it
9. Probably not/Probably buy it

##### **Measure of word-of-mouth intention (Goyette, Ricard, Bergeron, & Marticotte, 2010)**

10. How likely you would say positive things about BP to others?
11. How likely you would speak of BP’s good sides?
12. How likely you would recommend others buy products from BP?
13. How likely you would be proud to say to others that he/she is BP’s customer?

##### **Measure of social identification (Cameron, 2004)**

1. I have a lot in common with other Facebook users.
2. I feel strong ties to other Facebook users.
3. I find it difficult to form a bond with other Facebook users.
4. I don’t feel a sense of being ‘connected’ with other Facebook users.
5. I feel I belong to the group of Facebook users.

**APPENDIX E**  
**Timeline of BP's oil spill response in 2010**

April 20	The Deepwater Horizon rig operating in the Gulf of Mexico experienced a well blowout, which resulted in the release of oil into the Gulf. Eleven crew members perished in the explosion.
April 22	Major oil spill response initiated.
May 24	BP Pledged \$500 Million for independent research into impact of spill on marine environment
June 16	BP created \$20 billion fund to meet individual, business and government claims, to cover the costs of state and local response and natural resource damages.
July 15	With well cap in place, oil stops flowing into the Gulf.
August 23	Claims transfer: The independent Gulf Coast Claims Facility, helmed by Ken Feinberg, assumed responsibility for administering the claims process.
September 8	BP published its internal investigation team's report into the Deepwater Horizon accident. The investigation found that no single factor caused the Macondo well tragedy. Rather, a sequence of failures involving a number of different parties led to the explosion and fire
September 19	The well is officially declared dead by the interior Department.
October 1	Tony Hayward stepped down as BP CEO, and Bob Dudley became the new CEO.
October 29	BP announced the results of cement testing that it has conducted and several conclusions it has reached based on the testing and documents provided by Halliburton.
December 15	The federal government filed a civil suit against statutorily defined 'responsible parties' under the Oil Pollution Act.
January 5, 2011	The White House oil spill commission concluded that the oil spill was the result of systematic management failure between BP, Transocean, and Halliburton

## APPENDIX F

**TABLE 8 The crisis communication strategies used by BP America on its Facebook page during the oil spill crisis (May-December, 2010, month-based).**

Strategy		May		Jun		Jul		Aug		Sep		Oct		Nov		Dec		All messages	
		<i>(n = 81)</i>		<i>(n = 303)</i>		<i>(n = 514)</i>		<i>(n = 571)</i>		<i>(n = 538)</i>		<i>(n = 546)</i>		<i>(n = 453)</i>		<i>(n = 434)</i>		<i>(N = 3440)</i>	
		<i>n</i>	<i>%</i>	<i>n</i>	<i>%</i>	<i>n</i>	<i>%</i>	<i>n</i>	<i>%</i>	<i>n</i>	<i>%</i>	<i>n</i>	<i>%</i>	<i>n</i>	<i>%</i>	<i>n</i>	<i>%</i>	<i>n</i>	<i>%</i>
Information Giving <sup>***</sup>	Instructing	7	8.6	32	10.6	42	8.2	54	9.5	47	8.7	65	11.9	67	14.8	40	9.2	361	10.3
	Adjusting	6	7.4	33	10.9	70	13.6	63	11.0	46	8.6	62	11.4	36	7.9	23	5.3	348	10.0
	Total	13		65		112		117		93		127		103		63		708	
Image Repair	Denial <sup>***</sup>	1	1.2	3	1.0	30	5.8	57	10.0	48	8.9	35	6.4	48	10.6	55	12.7	277	8.1
	Diminishment	0	.0	8	2.6	21	4.1	22	3.9	16	3.0	20	3.7	17	3.8	9	2.1	113	3.3
	Rebuilding <sup>***</sup>	71	87.7	245	81.2	345	67.1	337	59.0	355	66.0	307	56.2	231	51.0	236	54.4	2128	61.9
	Bolstering <sup>***</sup>	5	6.2	35	11.6	135	26.3	192	33.6	172	32.0	181	33.2	171	37.7	198	45.6	1089	31.7
	Total	73		261		435		477		467		444		384		381		2963	

Note:

1. This is a dichotomy coding. Some of BP's messages used both information giving strategies and image repair strategies, and within the messages using image repair strategies, some messages used strategies from two or more clusters.
2. Information giving strategies:  $\chi^2 = 40.649$ ,  $df = 14$ ,  $p < .001$
3. Denial cluster in image repair strategies:  $\chi^2 = 50.789$ ,  $df = 7$ ,  $p < .001$
4. Rebuilding cluster in image repair strategies:  $\chi^2 = 122.995$ ,  $df = 7$ ,  $p < .001$
5. Bolstering cluster in image repair strategies:  $\chi^2 = 136.336$ ,  $df = 7$ ,  $p < .001$
6. Messages posted in April 2010 ( $n = 2$ ) and January 2011 ( $n = 55$ ) were omitted from the table.

**TABLE 9 The source of BP America’s crisis communication messages on its Facebook page during the oil spill crisis (May-December, 2010, month-based).**

Source	May		Jun		Jul		Aug		Sep		Oct		Nov		Dec		All messages	
	<i>(n = 59)</i>		<i>(n = 254)</i>		<i>(n = 451)</i>		<i>(n = 542)</i>		<i>(n = 513)</i>		<i>(n = 528)</i>		<i>(n = 419)</i>		<i>(n = 414)</i>		<i>(N = 3180)</i>	
	<i>n</i>	<i>%</i>	<i>n</i>	<i>%</i>	<i>n</i>	<i>%</i>	<i>n</i>	<i>%</i>	<i>n</i>	<i>%</i>	<i>n</i>	<i>%</i>	<i>n</i>	<i>%</i>	<i>n</i>	<i>%</i>	<i>n</i>	<i>%</i>
News media outlets	3	5.1	53	20.9	119	26.4	215	39.7	258	50.3	219	41.5	206	49.2	190	45.9	1263	39.7
Social media sites	5	8.5	116	45.7	163	36.1	175	32.3	141	27.5	156	29.5	99	23.6	115	27.8	970	30.5
Corporate affiliated websites	50	84.7	75	29.5	150	33.3	116	21.4	104	20.3	86	16.3	64	15.3	71	17.1	716	22.5
Government operated websites	1	1.7	10	3.9	19	4.2	36	6.6	10	1.9	67	12.7	50	11.9	38	9.2	231	7.3

Note:  $\chi^2 = 356.174$ ,  $df = 21$ ,  $p < .001$ .

March 21, 2014

Office for Research

Institutional Review Board for the  
Protection of Human Subjects

THE UNIVERSITY OF  
**ALABAMA**  
R E S E A R C H

Lan Ye  
College of Communication and Information Sciences  
The University of Alabama  
Box 870172

Re: IRB # 14-OR-095, "Is Facebook an effective crisis communication tool for companies? An analysis of BP's Facebook usage after the 2010 oil spill"

Dear Ms. Ye:

The University of Alabama Institutional Review Board has granted approval for your proposed research.

Your application has been given expedited approval according to 45 CFR part 46. You have also been granted the requested waiver of written documentation of informed consent. Approval has been given under expedited review category 7 as outlined below:

*(7) Research on individual or group characteristics or behavior (including, but not limited to, research on perception, cognition, motivation, identity, language, communication, cultural beliefs or practices, and social behavior) or research employing survey, interview, oral history, focus group, program evaluation, human factors evaluation, or quality assurance methodologies.*

Your application will expire on March 20, 2015. If your research will continue beyond this date, please complete the relevant portions of the IRB Renewal Application. If you wish to modify the application, please complete the Modification of an Approved Protocol form. Changes in this study cannot be initiated without IRB approval, except when necessary to eliminate apparent immediate hazards to participants. When the study closes, please complete the Request for Study Closure form.

Should you need to submit any further correspondence regarding this proposal, please include the above application number.

Good luck with your research.

Sincerely,

  
Carpantato T. Myles, MSM, CIM, CIP  
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Office for Research Compliance  
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