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Abstract

Human brains are inherently capable of receiving and processing visual messages faster than written text messages. The recent proliferation of internet use, social media platforms, smartphones, and online news media sites facilitated the spread of visual content (e.g., pictures, videos, and data visualizations) online much higher than before. However, visual contents have been largely ignored in crisis communication research, leaving the crisis managers to devise strategic crisis responses and deal with a crisis without sufficient research evidence.

Responding to a recent research call to fill the gap, this dissertation conducts a 2 (picture: action vs. damage) \times 3 (distinctiveness: high vs. low vs. no) between-subject experimental design, informed by attribution theory (AT) and situational crisis communication theory (SCCT). This online experiment aims to see the effects of pictures and an organization's distinctiveness (i.e., an organization's prior good or bad performance) on people's crisis reactions in a real oil-spill crisis phenomenon and how both the pictures and the distinctiveness interact with each other. The effects were tested on people's five reactions: a) crisis responsibility, b) negative emotion, c) negative word of mouth, d) punitiveness, and e) purchase intention. Visual stimuli manipulation was created using pictures relating to actions (e.g., cleaning spilled oil) and damages (e.g., dolphin carcass). Distinctiveness stimuli manipulation was created using written texts relating good or bad performance in the past.

Simple effect results show that the damaging pictures invoke significantly higher negative emotion among participants and their higher punitiveness toward the company than the action pictures. At the same time, the crisis-hit company's prior bad performance information (i.e., low distinctiveness), compared to its prior good performance (i.e., high distinctiveness), leads to people's higher crisis responsibility, higher negative emotion, higher negative word of

mouth, higher punitiveness, and lower purchase intention toward the company. There are significant interaction effects between picture and distinctiveness. In other words, the distinctiveness effects are moderated by or depend on the levels of pictures.

The results contributed to the crisis communication literature by offering evidence supporting visual effects on people's perceptions in a crisis and the roles of framing devices in both visual and textual content in the SCCT model. The insights are provided in the contexts of a social media platform and a real crisis. Overall, this dissertation proposed an extension of the SCCT model offering a more in-depth understanding of a crisis and its management, which is not adequately explained in the old model. Based on the insights, the study also offered practical implications for crisis communication practitioners and future research directions in visual crisis communication.

Keywords: attribution theory, crisis communication, effects of visuals, experimental research, SCCT, strategic communication, Twitter, visual framing, visual public relations

TOWARD EXTENDED SITUATIONAL CRISIS COMMUNICATION THEORY: INCLUDE
VISUALS, PRIOR PERFORMANCE, AND FRAMING DEVICES

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Dedication

To my beloved parents and wife

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Chapter 1: Introduction

This dissertation includes five broad chapters. Chapter I introduces the presence of visuals even from ancient time, the visual power of human senses and brains, pervasive use of visuals in the present days, followed by the scarcity of academic research exploring visuals in crisis communication, and the problem statement for this dissertation. After setting the background and problem statement for this visual crisis communication research in this present chapter, I cover the literature review in Chapter II, the method in Chapter III, results in Chapter IV, and discussion and conclusion in Chapter V.

1.1. Visuals Since Ancient Time

Visuals play a crucial role in human communication and strategic communication to tell a story and persuade people (Galloway, 2017; Collister & Roberts-Bowman, 2018b). Visual dimensions of communication have always been a part of human history (Collister & Roberts-Bowman, 2018b, p. 192). For example, visuals painted by humans were found even in caves and shelters dating back to the Ice age, roughly between 40,000 and 14,000 years ago (Clottes, n.d.). Architectures and arts were found to have been used in ancient Egypt "to impress a particular message on the public" of the pharaohs' greatness (Collister & Roberts-Bowman, 2018b, p. 192). Bayeaux Tapestry, a medieval embroidery on linen cloth, was also used "to commit one account of the importance of the Norman Conquest into history," and these were "strategically designed and deployed to tell a story" (p. 192).

In the last few centuries, quantitative graphics have become central to communicating messages in many disciplines, including public relations (Playfair, 2005; Cope & Wells, 2018). Different graphs, such as bivariate plots, statistical maps, bar charts, and coordinate paper, were used in the 18th century or even before in different parts of the world (Beniger & Robyn, 1978;

Playfair, 2005; Spence & Wainer, 2005). This shows the use of visuals by people from ancient times to the present to convey their messages strategically.

1.2 Power of Vision and Visuals

Inherently, humans have a highly developed ability to receive and process information visually. About 70% of the human body's sense receptors reside in their eyes (Few, 2009), and they “acquire more information through vision than through all of the other senses combined” (Ware, 2013, p. 2). People’s visual capacity is also evidenced in the fact that around “20 billion or so neurons of the brain devoted to analyzing visual information provide a pattern-finding mechanism” (Ware, 2013, p. 2). Such power allows people to visually recognize a picture within only 13 milliseconds (Potter et al., 2014). Seeing also collaborates closely with the cognitive process to make sense of the world (Few, 2009; Flynn & Li, 2019). So, people’s innate power to process visual content rapidly and easily, which is not adequately explored yet in crisis communication research, warrants the need for understanding of how visuals shape people’s perceptions, especially in the long-understudied area of visual crisis communication.

1.3. Pervasive Use of Visuals

In recent years, visual messages are being increasingly generated and consumed even more than ever, mainly because of technological advancement (Collister & Roberts-Bowman, 2018a; Thomson et al., 2020). The internet, social media, and smartphone together brought tremendous changes in how people visually communicate (Graham & Simo, 2016; Kemp-Robertson & Barth, 2018). While explaining the superpower working behind this newly emerged visual culture, Kemp-Robertson and Barth (2018) said:

Today, we each carry a powerful computer in our pockets with more processing power than a room-sized supercomputer used to run missions to the moon in the early days of

black-and-white television. And we use these miracle devices most often to post photos of ourselves on social media (p. 101).

With the majority of people equipped with a powerful smartphone, "the rise of visual communications platforms has profoundly impacted the brand ecosystem. As cited in Kemp-Robertson and Barth (2018), "72 percent of Instagram users have made a purchase based on something they saw in their feed," and this visual culture gave birth to fads "and phenomena based entirely on how things look in photos" (p. 102).

More than 3.2 billion images and 720,000 hours of video are shared on social media platforms daily (Thomson et al., 2020). In terms of data, people are constantly generating an enormous volume of data every day, meanings of which are very hard to understand without visualization. Every minute, people are generating 2.5 quintillion bytes of data ("Data never," n.d.), and a major way "to explore and understand a large dataset is with visualization" (Yau, 2011, p. xvi).

Since a remarkable portion of large-scale data is coming from various social media platforms, understanding large-scale data from social media appeared as a crucial need for public relations (PR) research (Spence et al., 2016; Ewing et al., 2018; "Data never," n.d.). Social media's power to spread a crisis in real-time and escalate it to a complex level made crisis management even more challenging in this era (Gruber et al., 2015). Crisis communication strategies and research have also changed in the last decade due to the newly emerged media landscape (Cheng, 2018).

1.4. Dearth of Visuals' Research in PR

Visuals have long been there in PR practice (Horton, 2018; Kohrs, 2018; Quintana & Xifra, 2016; Sadler-Trainor, 2005). Researchers in PR scholarship have widely focused on text

messages in their academic studies. However, visual content in PR has been understudied academically despite its growing use and influence in shaping people's perceptions and behaviors toward a company. A discussion among academicians about the need for utilizing visual content was traced back to the years of 1947 and 1953 (Jones, 1947; Cooper, 1953). In a 1947 lecture, a University of Illinois professor, Tom Jones, hopes that people "turn [their] attention to finding out how to employ visual media more effectively" (Jones, 1947, p. 327). Interestingly, over seven decades later, scholars are still discussing conducting studies to identify the best possible ways of using visual content in different sectors, including public relations, which adds evidence that visuals remain understudied despite scholars' recognition of its importance.

With the growing use and consumption of visuals, a prominent PR journal, *Public Relations Review*, published a special issue on visual PR in 2018. In this special issue focusing on PR and visual communication, Pressgrove et al. (2018) wrote an editor's note. They reviewed five years of major PR and visual journals, unearthing a dearth of academic research combining PR and visual communication. Therefore, they called for further academic studies in a few specific PR areas, including visual crisis communication that involves much visual content compared to other areas.

On the one hand, there is minimal research exploring and analyzing visual aspects in the overall public relations. On the other hand, studies that focus on visual PR mainly address how various visuals are used and framed in social media platforms and newspapers. Only a few studies looked at the effects of visuals aiming to contribute to the PR theoretical perspectives. These studies, however, failed to identify substantial evidence in support of the effects of visuals in a crisis communication theoretical framework (Coombs and Holladay, 2011). Some studies

utilized the experimental research method in exploring visual content's influence in various crisis contexts. These studies, however, reveal mixed findings. For example, Gibson and Zillmann (2000), Spence and Lachlan (2009), and Fraustino et al. (2018) identified the influence of visuals in various crisis situations, while Coombs and Holladay (2009, 2011) revealed no significant effects of visual content in generating people's crisis responsibility toward an organization. A recent study by Ali and Kinsey (In Press) explored that people perceive pictures containing different visual salience as forgiving or unforgiving of a company in a crisis.

Though academic research reveals mixed findings of the effects of visual content in PR, especially crisis communication, theoretical frameworks like attribution theory (AT) and framing theory suggest considering visuals in understanding how content is framed and shapes people's crisis perception toward a company (Fahmy et al., 2014; Kelley, 1973; Entman, 1993). For example, while developing SCCT, Coombs (2007b) recognized the role of visuals in framing a crisis and reputational threat. From the attribution theory perspective, Lassiter et al. (2002) show how people perceive a suspected person's guiltiness based on which camera focus his/her integration was recorded and watched, indicating different types of crisis attributions shaped following different visual salience.

1.5. Problem Statement & Research

As described above, theoretical propositions and evidence support the influence of visual content and the pervasive use of visuals (e.g., photo, video, data visualization, or emerging augmented reality) in people's daily communication. However, visual aspects have long been overlooked in PR research areas, including crisis communication (Collister & Roberts-Bowman, 2018b, p. 192; Pressgrove et al., 2018). This left a dearth of research and adequate evidence to understand visuals-led crisis scenarios. More importantly, crisis managers are devising crisis

response strategies without sufficient research evidence relating to the effects of visuals in a crisis. Therefore, this dissertation addressed the gap in visual crisis communication research. Specifically, this project utilized an experimental research method to explore how visual content influences people's various crisis reactions and behavioral intentions toward a company in a crisis. Using the attribution theory (Kelley, 1973; Weiner, 2000) and situational crisis communication theory (SCCT) (Coombs, 2007a; Coombs, 2007b), this study investigates the visual aspects of a real-world crisis such as the 2020 Mauritius oil spill aiming to recommend an extension of the SCCT that overlooked visual aspects in understanding and managing a crisis.

Coombs (2007a; 2007b) utilized the attribution theory as a guide in building the SCCT, a dominant crisis communication theory. As one of the key aspects of attribution theory, distinctiveness — how similarly or differently an individual or entity in a crisis behaves in similar situations — works with visual salience in framing a message and shaping people's perceptions toward a company (Kelley, 1973; Weiner, 2000; Entman, 1993; Fahmy et al., 2014; Fairhurst & Sarr, 1996). The SCCT included prior “crisis history” as a node in its crisis situation model (see Figure 1). The theory limited the node to only “similar crisis [incidents of an organization] in the past,” which left other prior historical incidents out of this crisis communication framework (Coombs, 2007b, p. 167). Therefore, in contrast to only “crisis history,” this dissertation also attempts to examine an organization's prior performance, in general, to see how it influences people's crisis reactions and behavioral intentions. So, the distinctiveness in this research was conceptualized as a company's good or bad performance in the past.

In this experimental study, the influence of visuals was tested by stimuli in the form of tweets manipulated with two different groups of real-world crisis pictures. The pictures were

published in different news media outlets covering the 2020 oil spill near Mauritius. The crisis emerged as a Japanese bulk carrier named MV Wakashio ran aground on a coral reef off the Mauritius coast in the Indian Ocean in July 2020 (“Mauritius oil spill: Fears,” 2020). The distinctiveness influence was tested by stimuli that were also created in the form of tweets and manipulated by written texts highlighting the company’s prior hypothetical good and bad performance relating to the oil spill.

This dissertation’s results contribute to gaining better insights into the effects of pictures and distinctiveness on people’s crisis perceptions and behavioral intentions toward the crisis-hit oil tanker company. Importantly, the results provided evidence proposing the extension of the SCCT, especially by including visuals, prior performance, and framing devices in the theoretical framework. I also discussed the implications of the results and proposed extensions to the SCCT for both the crisis communication researchers and the crisis managers.

Chapter 2: Literature Review

2.1. Human Brain and Visual Information Processing

Humans have a remarkable capacity to process visual content and make sense of it. They first start communicating visually even before they learn the alphabet. While exploring the complex cognitive process of human vision, Brain and Cognitive Sciences professor Mriganka Sur said, "half of the human brain is devoted directly or indirectly to vision" ("MIT Research," 1996).

Studies find that people can process and remember visual content much faster than words. Evaluating the minimum viewing time needed to process visual content, Thorpe et al. (1996) explore that people's visual processing system can detect whether an unseen natural picture contains an animal or not within only 150 milliseconds when the picture is flashed for 20 milliseconds. A recent study by Potter et al. (2014) reveals even faster processing of visual information. They find that people can achieve a conceptual understanding of a novel picture when presented as briefly as 13 milliseconds (p. 275).

In recognition memory tests, people have been able to recognize more than 2,000 pictures at over 90% accuracy after three days of the tests even when each picture was seen only 10 seconds (Standing et al., 1970). People's excellent capacity to remember pictures exceeds that to remember words (Paivio, 1971). Human brain processes text and visual content "differently" (Fahmy et al., 2014, p. 128). While making sense of visual information, people's look at "a complex scene activates processes that distinguish target objects, such as people, from the background and then selects which bits of the target to focus on" (Carter, 2009, p. 85). When people focus their attention on a target, it "prevents the[ir] brain from responding to irrelevant stimuli and amplifies information coming from the part of the visual field containing the target of

attention” (Carter, 2009, p. 118). Thus, a visual salience about that target object is achieved in the brain.”

After a salient stimulus attracts people’s attention, it leads to the formation of certain perceptions in their brains based on visual salience. While explaining the linkage between attention and attribution, Fiske et al. (1982) said:

When salient stimuli attract attention, this perceptual focus results in encoding more details about the salient than the situation’s nonsalient aspects. By this argument, salience causes increased attention, which causes differential encoding and recall, which in turn causes disproportionate attributions. (p. 106).

There are various ways of creating salience, including visual perspectives, Gestalt’s figure-ground principle, where eyes generally distinguish an object in the foreground from the background, novelty, duration of a presentation, motion, and graphics (Fiske et al., 1982; Carter, 2009; Fahmy et al., 2014). The issue of visual salience became even more important than before because of the growing visual culture in this internet era.

2.2. Visual Culture

Before the invention of alphabets, visual content like symbols and gestures was a major medium of people’s communication (“Alphabets and writing,” n.d.). They also used to draw various pictures on different surfaces, including cave walls (“Why did prehistoric,” n.d.). People’s communication expanded through written texts with the advancement of alphabets and other modern technology like the printing press. However, with the latest advancement of technology like the internet, smartphones, and social media, a new visual culture started proliferating. For example, over 95 million photos are uploaded daily on Instagram only (“Instagram now,” 2016).

Despite human beings' incredible capacity to process visual messages and increase visual culture, visual content has minimally been analyzed in PR academic research, especially in crisis communication research. Understating visual content is more important than ever in this age of social media, where a crisis could erupt very quickly and harm a company's reputation. The next section highlights the issue of crisis.

2.3. Crisis and crisis research

Crisis communication is a major sub-field of public relations discipline. Coombs (2007b) defined a crisis as "a sudden and unexpected event that threatens to disrupt an organization's operations and poses both a financial and a reputational threat (p. 164). Sellnow and Seeger (2010) said that a crisis is an event that "usually requires some immediate action or response by agencies and groups to limit and contain the harm" (p. 7). They elaborated on Heath's (1995) point – a crisis is a risk manifested—by saying that "a risk occurs before a crisis and is the consequence of a risk continuing to develop without appropriate efforts to manage it" (Sellnow and Seeger, 2010, p. 8). The magnitude of a crisis is best understood when it is seen "as a matter of personal, community, and even cultural perception" (p. 4). In other words, a crisis could be perceived differently by different people or groups of people following differences in their individual, community, and cultural contexts.

According to Coombs (2007b), a crisis is a reputational threat, which develops through the information consumed by stakeholders. They compare what they know about or evaluate an organization to some standard and see if their expectations are met or not. When their expectations are not met, it appears problematic for the organization, driving it toward the reputational threat and, thus, a crisis of the organization. So, the expectation gap is based on how people evaluate the organization's ability to meet their expectations and how they perceive

information about the organization. It is elaborated in the next section of the theoretical framework.

2.4. Situational Crisis Communication Theory (SCCT)

This current research intends to advance the situational crisis communication theory (SCCT) from the perspective of how people's crisis perceptions are created, especially by various visual content. This section provides key insights into the SCCT and highlights a gap that is attempted to fill in this study.

In the public relations discipline, specifically, crisis communication, the SCCT developed by Coombs (2007b) appears as a dominant theoretical framework (Cheng & Cameron, 2018). This theory has been developed based on dispositional- and situational-attribution assumptions of a prominent social psychological theory named attribution theory (Kelly, 1973; Coombs, 2007a). The overall purpose of The SCCT is to provide mechanisms for anticipating 1) how people react to crises and 2) how people react to crisis response strategies utilized to manage crises (Coombs, 2007b). As Coombs argued, SCCT provides an evidence-based guideline to manage a crisis following experimental research methods, while traditional crisis communication was mainly based on case studies.

2.4.1 Perception

The SCCT identifies a crisis as a reputational threat. The perceived reputation is affected by how people perceive the crisis. According to the theory, people's perception of a crisis and a company's reputation develops through the information they receive about the crisis and the company. Coombs (2007b) identifies three ways of receiving such information: 1) interactions with an organization, 2) mediated reports (e.g., news media and advertising), and 3) second-hand

information from other people. As indicated in theory, the information people consume more hold higher importance in understanding crises.

2.4.2. Crisis type

Along with the information consumed by people about a crisis, Coombs (2007b) suggests determining the type of crisis or reputational threat aiming to provide appropriate response strategies for a particular crisis. Three factors shape a crisis type or reputational threat: 1) initial crisis responsibility, 2) crisis history, 3) prior relational reputation. Of the three factors, the first one is related to a crisis just happened or happening, while the other two are related to the past record of an organization.

The initial crisis responsibility is how much people perceive an organization's actions caused the crisis (Coombs, 2007b). The "crisis history is whether or not an organization has had a similar crisis in the past," while the "prior relational reputation is how well or poorly an organization has or is perceived to have treated stakeholders in other contexts" (p. 167). Importantly, it is all about framing. Though Coombs (2007b) mainly explains only the "initial crisis responsibility" from the framing perspective, this current study considers the framing aspect contributing to shaping people's perception of all three factors.

2.4.3. Framing

One of the major components of the SCCT is framing. Coombs (2007b) suggests appropriate crisis response strategies based on the crisis type, which is "how the crisis is being framed" (Coombs, 2007b, p. 166). A framing "determines how much stakeholders attribute responsibility for the crisis to the organization" (p. 167). Since a reputation is largely what people perceive, not what exactly happens, framing of information consumed by people is a key to determining people's perception, reputation threat, and, thus, the type of crisis.

While defining framing, Scheufele and Tewksbury (2007) said, a framing “is based on the assumption that how an issue is characterized in news reports can have an influence on how it is understood by audiences” (p. 11). A prominent definition of framing is given by Entman (1993). He says:

“To frame is to select some aspects of a perceived reality and make them more salient in a communicating text, in such a way as to promote a particular problem, definition, causal interpretation, moral evaluation, and/or treatment recommendation for the item described.” (p. 52)

A key to the framing definitions is the salience – how some aspects of "perceived" reality are highlighted and made prominent. Referring to previous studies, Coombs (2007b) cited that frames operate on two related levels: 1) frames in communication and 2) frames in thought. The first one involves the way of presenting information in a message, such as words, phrases, and pictures. The second one involves cognitive structures like schema used by people to interpret information. Of the two, frames in communication help determine frames in thoughts. Ultimately, how a message is framed influences how people perceive a crisis (Coombs, 2007b).

In order to determine which crisis response strategies (e.g., denial, diminish, rebuild, and bolstering), the SCCT offers two steps – first, identifying initial crisis responsibility, and second, identifying crisis history and prior relational reputation. As shown in the crisis situation model of SCCT, initial crisis responsibility plays a key role, with support from crisis history and prior relational reputation, in determining organizational reputation and emotions, leading to people’s behavior intentions toward an organization.

example, it mentions, “frames in communication involve the way (words, phrases, images, etc.) that information is presented in a message” (p. 167).

Though the framing has been discussed with much importance in shaping the perceived initial crisis responsibility, understanding how various content could frame the initial crisis responsibility has not been incorporated in developing the steps to evaluate a reputational threat and devise an appropriate strategy. Specifically, the SCCT does not adequately address how various types of content (e.g., written texts vs. visuals) contribute to framing a crisis in a particular way and shaping people’s perceptions toward an organization. Accordingly, a question has arisen on whether crisis communication managers should care about visual content or not, especially in this age of visual culture when millions of visual contents (e.g., pictures, videos) are being shared on social media platforms and online news media outlets every day. This current study attempts to address this gap of how visual content (e.g., pictures) is framed and, accordingly, shapes people’s perceptions toward a company experiencing a crisis.

2.4.4. Visual Framing.

Though SCCT is one of the dominant theories in crisis communication research (Avery et al., 2010; Cheng & Cameron, 2018), it still lacks in incorporating some aspects of attribution theory, which is the root of SCCT, including visual salience in framing a crisis (Coombs and Holladay, 2008; Schwarz, 2008). Crisis communication is rarely subjected to more detailed textual or semiotic analyses, including verbal and visual aspects (Frandsen & Johansen, 2010).

Without incorporating visual content in understanding a crisis framing, SCCT’s purpose of identifying a crisis and reputational threat remains inadequately addressed. Aiming to investigate how visual content works in framing a crisis, this current study utilizes SCCT’s building block attribution theory, especially from the visual salience perspective.

2.5. Attribution Theory

In visual PR research, scholars utilized a variety of theoretical approaches. These include the extended parallel process model, which is also called in short EPPM (Avery & Park, 2018), the limited capacity model of motivated mediated message processing (LC4MP) (Avery & Park, 2018; Lee & Chung, 2018), situational crisis communication theory (SCCT) (Coombs & Holladay, 2011; Coombs, W. T., & Holladay, 2009), contingency theory (Coombs & Holladay, 2011), and rhetorical arena theory (RAT) and multivocal approach to crisis communication (Maier et al., 2009). Other theories used in visual PR include visual framing theory (Fahmy, 2010; Garcia & Greenwood, 2015; Goransson et al., 2018; Mundy & Dahmen, 2018), networked crisis communication model (NCC), some-mediated crisis communication model (SMCC) (Fraustino et al., 2018), and agenda building (Garcia & Greenwood, 2015) theory. Some other theories are also used in visual PR, including image-storage theory, accessibility theory, dual-coding theory, schema theory (Gibson & Zillmann, 2000), encoding-decoding theory (Goransson et al., 2018), grounded-theory approach (Janoske, 2018; Seo & Ebrahim, 2016), Benoit's (1995) *Kategoria* approach (Kelley-Romano & Westgate, 2007), expectancy violation theory and Associative network theory (Lee & Chung, 2018), situational theory of publics (Mundy & Dahmen, 2018), and image repair theory (Sandlin & Gracyalny, 2018).

As reflected in the above literature, in addition to the scarcity of visual PR research, there is also a lack of consistency in the use of any particular theoretical framework in visual PR. Of them, SCCT, LC4MP, and visual framing theoretical frameworks have been utilized in multiple studies. Importantly, a common underlined theoretical understanding is among these theories relating to how the human brain processes information and perceives things. The SCCT and visual framing theories seem to have been together rooted in understanding causal attributions by

visual messages, which is originally explained by attribution theory (AT). As a well-known and long-utilized social psychological theoretical framework, attribution theory might better explore and help understand PR research's visual aspects. The SCCT, where the visual aspects of AT have been ignored, can also be further expanded and improved in the new media ecology.

Originally started by Heider (1958), the AT has been further developed into a detailed and testable theory by social psychologists Kelley (1973) and Weiner (1986). As Kelley (1973) said:

Attribution theory is a theory about how people make causal explanations and answer questions beginning with "why?" It deals with the information they use to make causal inferences and what they do with this information to answer causal questions. (p. 107)

According to Kelley (1973), humans generally explain people's behavior in terms of three possible causes. These are: 1) person – this says that there is something about the person in question that might have caused the behavior, 2) entity – this says that there is something about outside the person (e.g., any situation) in question that might have caused the behavior, and 3) time – this says that there is something about a particular occasion in question that might have caused the behavior. These three attributions of behavior are mainly based on three corresponding types of information: consensus (how many people behave in the same way), distinctiveness (how other situations elicit this behavior), and consistency (how repeatedly the behavior occurs). This dissertation's experimental study uses the distinctive component in understanding people's attitudes toward a crisis-hit brand.

2.5.1. Distinctiveness

As the study suggests, a distinctiveness is considered the extent to which an individual or entity behaves in the same way in similar situations. For example, if a company spills oil into the

ocean and its previous records show good performance in its other business operations (e.g., strong CSR activities), it indicates the company's oil-spill incident is high in distinctiveness. Therefore, people are supposed to make external attributions that it is not the company, rather sometimes else (e.g., weather or unintentional mistake) could trigger the oil spill. If the company is known for its bad performance in its other business operations (e.g., unethical management), this indicates the oil spill is low in distinctiveness, activating the internal attribution perception among people. As per the covariation model of Kelley (1973), based on the information of the above three sources, people tend to make two types of attributions: 1) internal attributions (also called dispositional), where people attribute causes to the actor, and 2) external attributions (also called situational), where people attribute causes to the situation.

2.5.2. Visual salience

Application of this AT in the visual PR research is important mainly because of this approach's focus on the salience of information, especially visual salience. Generally, according to the theory, observers tend to make higher internal attributions and lower situational attributions than the actors. In contrast, an actor tends to make lower internal attributions and higher situational attributions than observers. Such discrepant perception is formed mainly because of the salience of information: the actors are more focused than situations to the observers, and the opposite happens to the actors. This causal attribution among actors and observers is not just logical reasoning, rather, so far, a substantial matter of sensory perception. Explaining the literature, Kelley (1973) said that "the [attribution] bias is due to differences between actor and observer in the information available to them and in the salience of that information" (p. 125). The discrepancy of actor-observer reasoning "can be reversed ... by using

videotape to provide the actor with the observer's view of the interaction, and the observer, with the actor's view" (Stroms, 1973 as cited in Kelley, 1973, p. 126).

Taylor and Fiske (1978) reviewed many studies on the link between visual salience and causal attribution. As they noted, such a study by Taylor and Fiske (1975) conducted an experiment where only informational differences were two actors' relative visual salience to the observers. The study found that "the actor who engulfed the visual field was rated as more causal [by observers]. Another study by Lassiter et al. (2002) conducted an experiment where they examined police interrogation in a videotape. Consistency with the previous experiment, this study also provided evidence that people are more likely to see the suspect as guilty when the camera focused on the suspect than when it focused on both the suspect and interrogator. All of these studies show how important visual salience is in understanding internal and external attributions in visual PR research. Utilizing the AT in the crisis communication sub-field of PR is even more important as a lot of visual messages such as pictures and videos are spreading nowadays in this age, thanks to the widespread use of social media and the internet.

2.6. Visuals in PR Research

Despite the above theoretical propositions of visual salience in framing a crisis and a reputational threat, visual aspects remain understudied for long in PR, specifically in crisis communication research. This section reviews prior literature of visual content research in public relations highlighting the crisis communication research.

2.6.1. Visual communication research

In general, visual communication research has received considerable attention from academic scholars. Aligned with news media's editorial decision to prefer publishing emotional photographs, most academic studies on visual content also "focused on the coverage of

massacres, disasters, conflicts, or terrorist attacks” (Fahmy et al., 2014, p. 51). Foci of the visual content studied in such studies include Gulf War pictures published in the U.S, newsmagazines (Moriarty & Shaw, 1995; Griffin & Lee, 1995), and Iraq War visuals published in *The New York Times* and *The Guardian* (Fahmy & Kim, 2008), and Hurricane Sandy visuals posted on Facebook (Janoske, 2018). Visual communication studies with other foci include understanding democracy through visuals (Seo & Kinsey, 2012).

2.6.2. Visual PR research

Specifically in the field of public relations, “non-textual domains of media and communication have been left largely unexamined” despite the recent tremendous growth of visual content in both social media platforms and news media outlets (Collister & Roberts-Bowman, 2018a; Ebrahim & Seo, 2019; Jakus, 2018). Reviewing about five years of major PR and visual communication journals, Pressgrove et al. (2018) recently discovered a scarcity of academic research involving both PR and visuals. A minimal number of studies on visual PR have been identified, but these studies “mainly focused on how to use a social media tool, rather than the role of visuals and visual narratives in the larger scope of public relations theory and practice” (p. 316).

Mentioning the pervasive use of visual content by all manner of communication, including infographics, photos, videos, and emerging augmented reality, academicians called upon conducting additional research at least in the areas that already have strong visual elements, such as health, science, risk, and crisis communication. Collister and Roberts-Bowman (2018a) emphasize connecting visuals and PR, aiming to explore the much-needed opportunity for furthering PR theories.

Responding to their calls, this current study explores how visuals shape people's perceptions of a company that is hit by a crisis. Crisis communication research is a major sub-field of public relations. Compared to the overall PR discipline, crisis communication research faces even more scarcity of academic studies involving visual content. The body of visual crisis research varies in terms of using research methods, theoretical frameworks, types of visual content, research contexts, and findings as well.

2.6.3. Why visuals are understudied in PR

As mentioned above, visuals remain largely understudied in especially crisis communication and, overall, in PR. Though I did not find any scholarly articles elaborating on why visuals in PR did not get adequate attention from researchers, the following three points might shed light on its potential reasons and help with extending the discussion. The reasons are 1) the surge of visuals in recent years, 2) challenges in visual content analysis, and 3) visual research methods in communication schools.

Recent surge of visuals. Though visuals have always been a part of human communication (Collister & Roberts-Bowman, 2018b), generation and use of visuals surged in the last two decades due to mainly the widespread penetration of the internet, smartphones, and social media platforms (Graham & Simo, 2016; Kemp-Robertson & Barth, 2018). Therefore, a potential reason might be that PR scholars did not feel much need for PR research involving visuals, although PR practitioners have long been using visual content in their interactions with stakeholders (Wiesenberg & Verčič, 2021). This argument is supported by the recent turn of academic scholars and journals towards PR research focusing on visuals (Pressgrove et al., 2018; Wiesenberg & Verčič, 2021). In 2018, the *Public Relations Review*, one of the top prestigious journals in PR, published a special issue on visual PR. Identifying a dearth in visual PR research,

Pressgrove et al. (2018) called for harnessing the recent surge of visuals, especially on social media platforms in this discipline. As the above evidence indicates, earlier PR researchers might not have felt the need for visual PR research as much as they are in recent years.

Challenges in visual analysis. Another reason could be that analyzing visual content (e.g., pictures, videos, emojis) is more challenging than written texts. As Kenney (2010) said, analyzing messages become more challenging when visuals are combined with written texts. "With visuals, meaning is often implied rather than stated directly" (Kenney, 2010). For example, one of the pictures in the Mauritius oil spill incident includes a dolphin carcass, seawater mixed with oil, and a person standing beside the dead dolphin. Such multiple contents in a single picture make the picture challenging to analyze and interpret compared to a written description of the same picture. The complicated process of analyzing visuals could be another reason behind the lack of PR research using visual content.

Visual research methods in communication schools. Aligned with the above reason, another point needs to be explored on how much the doctoral programs in communication schools emphasize visual research methods, especially for the students focusing on public relations. As per my knowledge based on personal communication with some faculties and doctoral students in communication schools, the doctoral programs so far do not formally train their Ph.D. students on specific visual research methods as much as they train them on various other qualitative and quantitative research methods. Such inadequate hands-on training on utilizing visual research methods might have restricted the doctoral students with PR focus to analyze visuals content in their PR-related research work even after their graduation.

The above three reasons need further exploration with systematic academic research to better understand the potential reasons behind the lack of visual PR research. A more insightful

understanding of the reasons might help offer an effective way forward for promoting visual research work in PR. However, further exploration into these reasons is beyond the purpose of this current research.

2.6.4. Research method

Three main research methods were used in the body of visual crisis communication research: experiment, quantitative content analysis, and qualitative textual analysis. For example, an experimental method was used in the studies by Gibson and Zillmann (2000), Spence and Lachlan (2009), Coombs and Holladay (2009), Brantner et al. (2011), Coombs and Holladay (2011), Liu et al. (2017), and Fraustino et al. (2018). While the quantitative content analysis was used by Fahmy (2010) and Sandlin and Gracyalny (2018), and qualitative textual analysis was used by Bazigos (2009), Schüring (2013), and Janoske (2018). A few other studies that are not directly related to crisis communication but with branding and consumer engagement utilized the survey research method as well. Studies that used experimental research methods investigated the effects of visual content in shaping people's perceptions of a company differently.

2.6.5. Theoretical framework

In terms of theoretical frameworks applied in visual crisis communication research, scholars utilized mainly SCCT (e.g., Coombs & Holladay, 2009; Coombs & Holladay, 2011). Other theories used in this research area include Benoit's (1997) image repair theory (e.g., Sandlin & Gracyalny, 2018), social-mediated crisis communication model (e.g., Fraustino et al., 2018), and framing theory (e.g., Fahmy, 2010). Visual PR studies in the area of corporate social responsibility (CSR) also used framing theory (e.g., Garcia & Greenwood, 2015) and the limited capacity model of motivated mediated message processing (LC4MP) (e.g., Lee & Chung, 2018). For this current study, SCCT, rooted in attribution theory and framing theory propositions, fits

well for an investigation into the effects of visuals because both attribution theory and framing deal with saliences, especially in visual content.

2.7. Visuals & Crisis Perceptions

This current study aims to look at visual content (e.g., pictures) in shaping people's crisis perceptions toward an organization. Therefore, this section specifically reviews how prior research sheds light on visual content literature and people's crisis perceptions. There are only a small number of studies that address this specific research issue.

For example, in an experimental study, Coombs and Holladay (2009) investigated whether various types of images influence people's perceptions of crisis responsibility, organizational reputation, anger, and negative word-of-mouth toward an organization. Conducted in the United States, this one-way experimental study was designed with three conditions (victim image, neutral image, and no image). All three conditions include a news report describing a 2007 airline crash of Brazil and firefighting efforts, while the only difference was a photograph in each condition. The "no image" condition did not have any photo, while the victim image condition includes a photo that shows the airline's tail section and numerous firefighters at the scene, and two of them were carrying a victim's body. The neutral condition includes a photo showing the airliner on the ground. Both photos had relevant captions. The study, however, did not find significant differences in people's crisis responsibility and relevant behavioral intentions among the three conditions. With the results, this research concludes that compared to the neutral image, the inclusion of victim image did not increase threats to the airline experiencing a crash crisis. They, accordingly, suggested that crisis managers not worry if news organizations use any victim images in their news reports.

Another experimental study by Coombs and Holladay (2011) tested the same proportions of how various images shape people's perceptions of crisis responsibility and a few other behavioral intentions (e.g., organizational reputation, anger, and negative word-of-mouth) toward an organization. This experiment was also designed with one-way same three conditions (victim image, neutral image, and no image) but from the perspective of two separate product harm crisis scenarios – Menu Food and Taco John, instead of the Brazilian airline crash incident. Their results show the victim visuals did not significantly affect people's crisis perceptions and behavioral intentions toward the situations. Accordingly, the crisis managers are again advised not to worry about the inclusion of victim visuals in the news stories.

In contrast to the results of these two studies, Gibson and Zillmann (2000) identified evidence in support of visual content's power in influencing people's perceptions. This experimental study was designed to explore the influence on issue perception of photograph information in news reports. They found that information contained in photographs accompanying news stories "exerted considerable influence on the readers' perception of the issue addressed in the story" (p. 364). Though this experimental design is not in a PR scenario, rather in a journalistic perspective, the results reiterated that "use of images amounts to additional storytelling" even if people who use it may not be aware of that (p. 365).

Supporting Gibson and Zillmann's (2000) results, a recent study by Fraustino et al. (2018) also revealed how traditional video and 360-degree video influence people's crisis perceptions differently. Their experimental study explored the effects of the media modality on people's attitudes toward flood content. They professionally created a 360-degree video using a 360-degree camera in a real-world flood disaster. A traditional video was captured from the 2:55-minute 360-degree video. Two groups of participants watched the two videos, followed by

completing a questionnaire. Compared to traditional video, a 360-degree video was found more effective in generating a stronger sense of spatial presence and stronger attitudes toward the flood-disaster content as credibly helpful and impactful (Fraustino et al., 2018).

So far, no other studies were found in the record that is directly related to this study's purpose. However, echoing the above two studies' results, Spence and Lachlan (2009) found that visual news consumption devices influence men and women differently in a natural disaster context. They also conducted an experiment where participants viewed a news story about Hurricane Katrina's devastation to the Gulf Coast on three visual news consumption devices: a standard-definition TV, a high-definition TV, or a video iPod. Similarly, two experiments (N1 = 767, N2 = 550) by Liu et al. (2017) tested how at-risk publics respond to warning messages with and without maps during three disasters: a tsunami, an active shooter incident, and a radiological disaster. They found that maps marginally improve message understanding. Though these two papers are not directly related to visual content's influences on people's crisis perception and relevant behavioral intentions, these studies' results indicate that visual content matters in better understanding a message.

The above literature review indicates mixed findings on visual content's effects on people's crisis perceptions and behavioral intentions. However, studies find that newspapers differently portray the visual content of a disaster differently, and it changes over the years (e.g., Daniela et al., 2019). Given the importance of visuals in this age of visual culture and social media use in crisis communication and the scarcity of such research, this current study explores how post-crisis pictures toward a crisis-hit company shape people's crisis perceptions and various behavioral intentions.

Specifically, the experimental study intends to look into visual content's influence and attribution theory's distinctiveness proposition in generating people's perceptions and attitudes toward a crisis-hit Japanese company. Importantly, this study's stimuli will be used from a social media (e.g., Twitter) perspective, which will help understand how such visuals shared on Twitter might influence people in this social media.

As prior studies indicate, visual salience of a crisis is associated with people's perceptions of crisis responsibility and negative emotion and the following behavioral intentions: negative word-of-mouth, punitiveness, and purchase intention (Coombs & Holladay, 2002, 2008; Jorgensen, 1996). So, this paper explores people's crisis responsibility, negative emotion, negative WoM, punitiveness, and purchase intention in response to two different visual content (action vs. damage) and AT's distinctiveness proposition. More specifically, this experimental research proposes:

H1: People's exposure to damaging pictures (vs. volunteer pictures) of the Mauritius oil-spill crisis is more likely to elicit—

- a. Higher crisis responsibility
- b. Higher negative emotion
- c. Higher negative WoM
- d. Higher punitiveness
- e. Lower purchase intention

H2: People's exposure to high distinctive (vs. low distinctive) messages of Mauritius crisis-hit MV Wakashio is more likely to elicit their—

- a. Lower crisis responsibility
- b. Lower negative emotion

- c. Lower negative WoM
- d. Lower punitiveness
- e. Higher purchase intention

Since enough literature is not available to see how the distinctiveness proposition (i.e., prior good or bad performance) of attribution theory works together with visual content to shape people's crisis perceptions and behavioral intentions, this study intends to explore it through a research question. As such, the following research questions is proposed to see the interaction effects between pictures and distinctiveness.

RQ: To what extent is the relationship between distinctive messages and people's attitudes moderated by pictures in the Mauritius oil-spill incident?

3. Method

3.1. Introduction

This dissertation utilized the experimental research method aiming to test the hypotheses and answer the research question mentioned above. A 2x3 between-subject online experiment was conducted to test the effects of visual content and a crisis-hit company's prior good or bad performance information (also called "distinctive" messages in this study) on people's crisis perceptions and behavioral intentions toward a company. Two types of visual content (action visuals and damage visuals) and three levels of distinctive messages (high, low, and no) were used for testing the effects. This section sheds light on the concept of the experimental research method and elaborates on the research instruments utilized in this study, such as design and participants, stimuli, procedure, independent variables, dependent variables, manipulation check, pretest, and finally, data analysis.

3.2. Experimental research method

3.2.1. What is experimental research?

Babbie (2016) identifies an experiment as "a mode of observation that enables researchers to probe causal relationships" (p. 224). It can be conducted in different settings, including 1) controlled lab experiment, 2) natural experiment, and 3) web-based experiment. Broadly, an experiment involves two aspects – first taking action and then observing the consequences of that action (Campbell & Stanley, 1963). "Social researchers typically select a group of subjects, do something to them, and observe the effect of what was done" (Babbie, 2016, p. 225). Typically, an experiment examines "the effect of an independent variable on a dependent variable," where the independent variable is identified as an experimental stimulus (p. 226). An independent variable can be manipulated in three broad ways: 1) environmental:

manipulation in aspects of the research settings, 2) instructional: manipulation in instructions that subjects receive, and 3) invasive: manipulation in subjects' body through physical simulation (Leary, 2012).

Since this dissertation intends to understand the causal relationship, such as the effects of visual content and an organization's crisis distinctiveness on people's crisis responsibility perception and other behavioral intentions toward the company, a controlled lab experimental research design best fits to serve the study purpose. The independent variables or stimuli in this study were manipulated using environmental manipulation techniques.

3.2.2. Reliability

The reliability of a research method refers to the consistency in getting the same results when it is conducted with the same research instruments again and again (Babbie, 2016). The experiment research method generally has higher reliability compared to many other research methods. If all instruments and research design of an experiment is used in a replication of the same study, it is supposed to provide the same results. For example, Milgram's well-known obedience experiment was replicated later in Europe and the United States (with a little modification to get IRB approval). These replications gave the same results (Milgram, 1974; Burger, 2009).

3.2.3. Validity

Validity is a crucial issue in an experimental design. There are two types of validity issues: internal validity and external validity.

Internal validity. The internal validity “refers to the possibility that the conclusion drawn from experimental results may not accurately reflect what went on in the experiment itself” (Babbie, 2016, p. 234). It generally happens when factors other than the intended stimulus affect

the dependent variable(s). Citing Campbell and Stanley (1963) and Cook and Campbell (1979), Babbie (2016) mentioned some sources of internal invalidity. The sources include history, maturation, testing, instrumentation, statistical regression, selection bias, experimental morality, and demoralization. The measures that can be taken to prevent internal "invalidity" include doing pre-test, the inclusion of a control group in the study, random assignment of subjects to each group of the between-group experiment, randomization of group order in a within-group experiment, placebo, and treating all groups equally.

External validity. Along with internal validity, external validity also needs to be considered while conducting experimental research. The external validity "refers to the possibility that conclusions drawn from experimental results may not be generalizable to the 'real' world" (Babbie, 2016, p. 236). Since an experiment generally includes a small sample that is not representative, questions arise that its results might not be the same in other situations. Actually, a representative sample is not essential in most experiments. Taking that opportunity of experimental studies, researchers are increasingly using different online platforms to conduct experiments (Ramsey et al., 2016; Babbie, 2016).

Leary (2012) noted that internal and external validity are inversely related – that means the higher level of internal validity tends to reduce the level of external validity in the experimental research. So, what is the solution, then? As Leary (2012) mentioned, internal validity must be considered first because without internal validity, external validity cannot be achieved anyway. Another thing is that the goal of an experiment is seldom to generalize its results. Rather, it intends to test a hypothesis. So, if that hypothesis is proposed based on a theory, research can claim that the experiment's results provided additional evidence that supports the particular theoretical framework(s). And any single experiment cannot generalize

any results. To strengthen, not necessarily fully ensure, the validity of an experiment, researchers can do a few things that include conducting the same experiment with multiple stimuli, combining stimulus in an experiment, replicating an experiment in other places or different times. "Replication [of an experiment] tells us about the generality of our hypotheses" (Leary, 2012, p. 206).

3.2.4. Advantages, Challenges, and Ethical Issues

A major advantage in a controlled lab experiment is that it keeps the experimental groups isolated, allowing only the stimuli to influence subjects' behaviors (Babbie, 2016; Leary, 2012). As no research method is perfect, the experimental method is mainly limited to its generalizability. The laboratory-controlled experiment findings might not occur in natural settings. However, along with understanding causal relationships, an experiment can be replicated easily in another time or place using the same research instruments, strengthening its validity and generalizability (Babbie, 2016; Leary, 2012). The experiment can be between-subjects and within-subjects. The within-subject design needs an even lower number of subjects than the between-subject design. The within-subject design might, however, be limited with "order effect." So, a randomized order of the groups needs to be assigned to the subjects in this within-subject experiment. However, the biggest weakness of this method is the artificiality of its research setting. Because of the artificial study setting, its results might not occur in natural settings.

When it comes to an online experiment setting, it is relatively easier than an offline setting in creating and running the studies (Barchard & Williams, 2008). Because of the option to include subjects from distant geographical areas in an online setting, it can have greater external validity and generalizability. Online experimental research also poses some disadvantages and

ethical issues. For example, due to the potential drop-out rates and questions about internet-based sample's representativeness, it might be challenging to obtain high-quality data (Barchard & Williams, 2008).

Barchard and Williams (2008) identified four main differences and relevant ethical challenges in online research compared to in-person one. First, since researchers do not have any direct contact with subjects, they (researchers) can ensure complete anonymity. However, they cannot use visual or verbal cues to let subjects understand consent and debriefing, and they cannot provide any instant clarifications if subjects need them. Second, since online research is often advertised more widely, it may be more difficult to get any clarification. Third, different subjects use different types of devices (e.g., desktop, cellphone), and it is difficult to get signatures on informed consent. Fourth, electronic data transfer in online study poses an ethical challenge to protecting their confidentiality.

Recognizing ethical issues in both online and offline settings are almost the same, the authors suggested researchers adopt methods to fit the technology-driven environment. For example, a few measures could include preparing a clear informed consent so that subjects can understand it easily, allowing them to ask for any clarifications, documenting an appropriate signature or alternative to that, debriefing subjects in case of any deception allowed by a minimal risk, allowing subjects to withdraw data, maintain data security, and avoiding harm (Barchard & Williams, 2008).

3.3. Experiments in visual crisis communication research

As mentioned in the literature review section above, prior research in visual communication mainly used three research methods: experiment, quantitative content analysis, and qualitative textual analysis. A small number of research studies utilized experimental

methods to directly investigate the causal relationship between visual content and people's behavior toward a company. Such studies include Gibson and Zillmann (2000), Coombs and Holladay (2009, 2011), Brantner et al. (2011), and Fraustino et al. (2018).

Given the few research using experiments and contradictory results highlighted in the literature review, this dissertation utilized the experimental research method to understand the visuals-caused attitudes in a crisis scenario. In contrast to previous experimental research, this current study also incorporated a social media context, such as Twitter, run by a reputed news media outlet, in constructing its stimuli. Another distinction is that pictures used in the stimuli were published by various news media in a real crisis of a company.

3.4. Study design and participants

A 2 (pictures: action vs. damage) \times 3 (distinctiveness: high vs. low vs. no) between-subject design of experiment was conducted. An online English-language survey questionnaire designed on Qualtrics, an online survey tool, was used for this experiment. After receiving approval to the experimental design from the Institutional Review Board (IRB), this study recruited participants from Prolific, an online crowdsourcing platform that provides access to participants in terms of different demographic profiles and work. Eligible participants included the United States nationals who were fluent in English and from 18 – 40 years of age. The use of Twitter was also included as another eligibility criterion since this study's stimuli were constructed as Tweet(s). Additional participation criteria included the approval rate (95% or greater) and the number of prior submissions of work (500 or greater).

The study recruited a total of 240 participants. Of them, the responses of 210 participants were finally identified as valid for analysis. The rest of the responses were excluded due to

mainly missing values and outliers. Six outliers were detected using Mahalanobis distance (Mahalanobis, 1936; Meyer et al., 2006).

Table 1. Demographic information

Characteristics	%
Age	
18-25	19.6
26-30	30.8
31-35	32.9
36-40	16.7
Gender	
Male	63.3
Female	35.2
Other	1.4
Educational level	
Grade 1-8	.5
High school incomplete	.5
High school graduate	11.4
Technical, trade, or vocational school after high school	1.4
Some college	16.7
College graduate	45.7
Post-graduate training or professional schooling after college	23.8
Political views	
Conservative	15.7
Moderate	21.9
Liberal	61.4
Don't know/ others	1.0

All the participants used Twitter in the previous week of their participation in this study. Their age ranged from 18 – 40 ($M = 30.43$, $SD = 5.02$). Of them, 63.3% was male, 35.2% was female, and 1.4% was others. Most of them identified themselves as liberal (61.4%) while 21.9% was moderate and 15.7% was conservative. Most of the participants completed higher education such as college degree and post-graduate degree. Details of the demographic information are presented in Table 1.

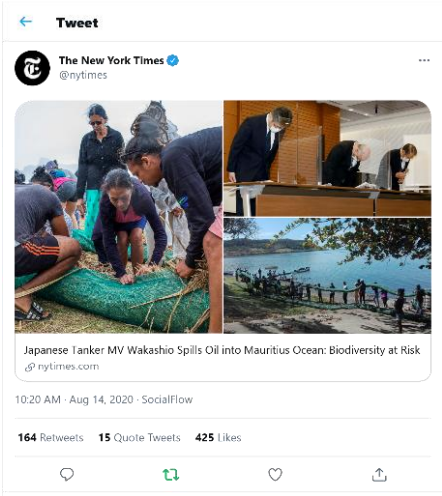

3.5. Stimuli

Four tweets were constructed for using as stimuli in this study (see Appendices II for the four tweets). Two of the four tweets were used for action and damage conditions of picture factor. Two other tweets were used for the high and low conditions of distinctiveness factor. Another condition of this factor was designed as having no distinctive tweets. In other words, four tweets were used to prepare a total of six groups of the experimental design. Distribution of the picture and distinctive tweets in six conditions were presented in Figure 4 of Appendices II.

As Figure 4 shows, all the six groups of stimuli were presented in the form of news tweet(s) as if these were posted by a national U.S. newspaper, *The New York Times*, on its official Twitter account. The damage and action pictures highlighted the visual salience of the 2020 Mauritius oil spill that happened in the Indian Ocean near Mauritius. Both tweets include the same text message that informs the audience about the oil tanker's spill. Keeping everything the same, only the pictures have been manipulated in these two tweets. In the action condition, a group of three similar pictures depicted people's volunteer work to prepare make-shift ropes and clean oil and company officials' apology at a press conference. While in the damage condition, another group of three similar pictures showed carcass of marine lives (e.g., dolphins), the broken tanker, and its oil spread across the coastal area. For making stronger visual salience in

these two stimuli, three similar pictures were combined in each stimulus. The pictures were selected following a prior study (Ali & Kinsey, In Press) that investigated the pictures of the same oil-spill crisis incident and identified people's perception of visual salience in those pictures in terms of forgiving and unforgiving of the company.

Figure 2. Final stimuli (tweets with picture content vs. distinctiveness messages) that have been used in six conditions.

Picture (Action)	Picture (Action Damage)
 <p>The tweet shows a collage of four images: top-left shows people cleaning up a spill; top-right shows a meeting; bottom-left shows a boat on a beach; bottom-right shows a coastline with a spill. The text below the images reads: "Japanese Tanker MV Wakashio Spills Oil into Mauritius Ocean: Biodiversity at Risk" with a link to nytimes.com. The tweet is dated 10:20 AM - Aug 14, 2020 - SocialFlow and has 164 Retweets, 15 Quote Tweets, and 425 Likes.</p>	 <p>The tweet shows a collage of four images: top-left shows people cleaning up a spill; top-right shows a dead whale on a beach; bottom-left shows a dead whale in a boat; bottom-right shows a coastline with a spill. The text below the images reads: "Japanese Tanker MV Wakashio Spills Oil into Mauritius Ocean: Biodiversity at Risk" with a link to nytimes.com. The tweet is dated 10:20 AM - Aug 14, 2020 - SocialFlow and has 164 Retweets, 15 Quote Tweets, and 425 Likes.</p>
Distinctiveness (High)	Distinctiveness (Low)



Two other tweets in distinctiveness factor highlighted "distinctive" messages that is identified as the company's past record of good performance or bad performance, following the attribution theory (Kelley, 1973). Both the tweets have the same content, except the written texts indicating the company's good and bad performance information. For the company facing the oil-spill crisis, its previous good performance information was used as "high" distinctive messages. The text used to prepare the high distinctiveness tweet is:

“Japan’s MV Wakashio tanker company again gets high marks from industry groups for ethical management in crude oil transportation. The company also receives an award for maintaining a record of zero violations in environmental safety regulations since 2010.”

Previous bad performance information was used as “low” distinctive messages. The text used to prepare the low distinctiveness tweet is:

“A shipping industry report has again slammed Japan’s MV Wakashio tanker company for unethical management in crude oil transportation that has contributed to at least 50 violations of environmental safety regulations since 2010.”

As mentioned above, the “no distinctiveness” level was manipulated by not providing any distinctive tweets. The distinctive texts were prepared as news tweets with the help of a former professional journalist, who is now an Assistant Professor researching journalism issues at a U.S. university. Appendices II shows the four tweets and their distribution in six conditions in its Figure 4. Here, Figure 2 also presents the four tweets in one place.

3.6. Procedure

Participants were randomly assigned to one of the six conditions (see Figure 4 in Appendices II). The random assignment was used to ensure participants’ initial homogeneity in all the six conditions, where they were exposed to the tweet stimuli before responding to questions relating to the dependent variables.

In the Qualtrics questionnaire, participants were first asked to read an informed consent. They were told that they were going to participate in a study to help understand how people think about news content on Twitter. After they agreed with the informed consent to participate in this study, they were exposed to the tweet(s) in one of the six conditions. For the “no distinctiveness” level, participants in both action and damage conditions did not see any distinctiveness stimuli. Rather, they saw only the action picture stimulus or the damage picture stimulus, respectively. In four other conditions, they first saw a distinctiveness stimulus (either high or low distinctiveness) and then a picture stimulus (e.g., action or damage pictures). Thereafter, they responded to a series of questions that included items to measure the dependent variables, check manipulation, and ask some demographic questions. Finally, they were debriefed after the completion of their required tasks. Table 2 shows the number of valid participants in each of the six conditions and the number of total participants in each level of the two factors.

Table 2. The number of participants in each of the six conditions.

		Picture		Total participants
		Action	Damage	
Distinctiveness	High	31	37	68
	Low	37	37	74
	No	32	36	68
Total participants		100	110	

3.6. Measures

3.6.1 Independent Variables

As mentioned above, this experimental design includes two independent variables or factors. One is the picture factor, and another one is the distinctiveness factor. The picture factor has two levels such as action picture and damage picture. The pictures used in preparing the two groups of levels were published by the news media outlets covering the 2020 Mauritius oil-spill crisis. At the same time, the distinctiveness factor has three levels such as high distinctiveness, low distinctiveness, and no distinctiveness. Distinctiveness factor levels were prepared by written texts about the company's past record focusing on either good or poor performance.

3.6.2 Dependent Variables

Crisis Responsibility. People's perceived crisis responsibility toward MV Wakashio was measured with a 7-point, five items Likert-type scale ranging from 1 = "strongly agree" to 7 = "strongly disagree." The items include "The cause of the oil spill was something MV Wakashio could have prevented" (reverse coded) and "Circumstances, not MV Wakashio, are responsible for the oil spill" (Coombs and Holladay, 2002, 2008). The mean value of the five items was

calculated into the crisis responsibility scale. Here, the higher value indicates the higher level of perceived crisis responsibility toward the company (Cronbach's $\alpha = .90$, $M = 5.56$, $SD = 1.02$).

Negative Emotion. Negative emotion toward the company was measured using four items adapted from Jorgensen (1996, p. 348). Participants responded to four items on a 7-point Likert-type scale ranging from 1 = "strongly agree" to 7 = "strongly disagree." The items include: "I feel annoyed toward the organization for what happened" (reverse coded) and "I feel sorry toward the organization." The mean value of the four items was calculated into the negative emotion scale, and the higher score indicates the higher level of people's negative emotion toward the company (Cronbach's $\alpha = .85$, $M = 5.50$, $SD = 1.12$).

Negative Word of Mouth Intention. The extent of people's intention to spread negative word of mouth (WoM) against MV Wakashio was measured using a 7-point, three items Likert-type scale ranging from 1 = "strongly agree" to 7 = "strongly disagree." The items include: "If I had a chance, I would encourage my friends or relatives NOT to buy services from MV Wakashio?" (reverse coded) and "If I had a chance, I would recommend MV Wakashio's services to someone who asked my advice?" Scores of the items were averaged where the higher mean indicates the higher level of intention to spread negative word of mouth against the company (Cronbach's $\alpha = .88$, $M = 5.19$, $SD = 1.28$). The scale is adopted from Coombs and Holladay (2007) with modification.

Punitiveness. Punitiveness of the company was measured by a 7-point, three items Likert-type scale ranging from 1 = "strongly agree" to 7 = "strongly disagree." The items include: "the company should be fined due to the oil spill," and "the company should be forgiven" (reverse coded) (Jorgensen, 1996, p. 348). Here, all items' scores were averaged,

where the higher score shows the higher level of punitiveness toward the company (Cronbach's $\alpha = .85$, $M = 5.70$, $SD = 1.06$).

Purchase Intention. People's purchase intention was evaluated by using a 7-point, three items Likert-type scale ranging from 1 = "strongly agree" to 7 = "strongly disagree," adapted from Taylor and Baker (1994) and Putrevu and Lord (1994). The items include: "the next time I need the services of an oil tanker, I will choose MV Wakashio tanker" (reverse coded) (Cronbach's $\alpha = .94$, $M = 2.10$, $SD = 1.12$).

3.7. Manipulation Check

I resorted to two options to manipulate the picture content tweets (e.g., action tweets or damage tweets). First, the manipulation was adapted from a recent study (Ali & Kinsey, In Press) that identified various pictures people perceived as most forgiving or unforgiving of the crisis-hit company in the Mauritius oil spill. Pictures perceived as the most forgiving include the company's apology, commitment, and actions to repair the damages caused by the oil spill. Three similar pictures were used in the action picture tweet. While pictures perceived as the most unforgiving highlights damages. Three similar pictures were used in the damage picture tweet. Since the pictures were adapted from a previous study, the two groups of pictures were reasonably considered to be manipulated to convey different intended meanings.

Second, to check the manipulation in this experiment, participants exposed to the picture tweets were asked to answer a question relating to what they saw in the tweets: 1) losses of marine lives; 2) company apologized and is working to repair; 3) people are drinking seawater. A total of 78 participants failed to pass the picture manipulation question. In terms of their distribution among conditions, only one participant failed to pass the damage picture manipulation. The rest of the 77 participants failed to pass the action picture manipulation.

However, I did not exclude them from analysis. The purpose of not excluding them from the data analysis is to see how the participants' reactions differ between the action picture and damage picture groups despite their failure to notify them consciously because human brains might unconsciously process and react to the nuances embedded in visual content (Thorpe et al., 1996; Standing et al., 1970).

Distinctiveness manipulation in the tweets was checked by asking the participants one question: “what performance record of the oil-tanker company did you see in the Tweet?” Among the answer choices to this question, “ethical management” and “unethical management” indicate high distinctiveness and low distinctiveness, respectively. Only two participants failed to pass the distinctiveness manipulation check and were removed from the analysis.

3.8. Analysis

A two-way multivariate analysis of variance (MANOVA) was conducted to test the effects of pictures and distinctiveness on five dependent measures — a) people's crisis responsibility, b) negative emotion, c) negative word of mouth, d) punitiveness, and e) purchase intention. The MANOVA test was performed to avoid Type I error in a series of ANOVA and post-hoc comparisons (Cramer & Bock, 1966). Since an interaction effect was found between picture and distinctiveness factors, the MANOVA analysis was followed by a simple effect analysis.

Chapter 4: Results

First, I tested whether there are significant differences in the distribution of various demographic variables (e.g., age, gender, and race) across the experimental conditions. Since age is a continuous variable and experimental conditions are nominal variables, a one-way ANOVA was conducted to see if there is any difference in age across the six experimental conditions. Separate chi-square tests of independence were conducted to see the differences in the distribution of gender and race since these variables and experimental conditions (e.g., types of picture content and levels of distinctiveness) are nominal variables.

The descriptive statistics in ANOVA showed that different experimental conditions were associated with the numerical variety of means of age, such as action picture with the high distinctive message ($M=30.52$, $SD = 5.56$), action picture with the low distinctive message ($M=29.35$, $SD = 4.37$), action picture only ($M=31.37$, $SD = 4.93$), damage picture with high distinctive message ($M=31.41$, $SD = 5.56$), damage picture with low distinctive message ($M=29.97$, $SD = 4.85$), and damage picture only ($M=30.11$, $SD = 4.82$). The ANOVA test revealed no statistically significant difference in mean of age across the six experimental groups, $F(5,204) = .939$; $p = .457$. The chi-square results yielded that the percentage of participants in the six experimental conditions did not significantly differ by gender, $\chi^2(10, N=210) = 9.68$, $p = .47$. So, there is no significant difference in the distribution of gender across the experimental conditions. The chi-square results also revealed that the percentage of participants in the six experimental conditions did not significantly differ by race, $\chi^2(30, N=210) = 33.85$, $p = .29$. So, no significant difference appeared in the distribution of race across the experimental conditions.

This experimental study includes two independent variables that are nominal categories. One of them has two conditions, and another has three conditions. Their effects on five

dependent variables have been tested. Each of the dependent variables is a continuous variable. To test the hypotheses and answer the research question, I conducted a two-way multivariate analysis of variance (MANOVA) using SPSS. Prior to conducting the MANOVA, the assumptions of multicollinearity and multivariate normality were tested. The assumption of covariance matrices was tested along with the MANOVA analysis on SPSS.

Multicollinearity. Pearson correlation was performed between all the dependent variables to test the multicollinearity assumption that the dependent variables would be correlated with each other with a moderate range (Meyer et al., 2006). As shown in Table 3, there are enough relationships among the dependent variables, but they are not multicollinear, indicating the appropriateness of multicollinearity assumption for MANOVA analysis.

Table 3. Correlations of the Five Dependent Variables.

	1	2	3	4
1. Crisis Responsibility				
2. Negative emotion	.674			
3. Negative word of mouth	.687	.760		
4. Punitiveness	.698	.790	.744	
5. Purchase intention	-.552	-.625	-.698	-.620

Multivariate normality. The assumption of multivariate normality of each dependent variable was evaluated within each group of the independent variables and determined to be not satisfied as the six groups' distributions in all the five dependent variables were associated with p values that include $< .05$.

Homogeneity of covariance matrices. Furthermore, the Box's M value of 130.806 was associated with a p -value of $<.001$, which is significantly based on $p < .001$ as a criterion (Huberty & Petoskey, 2000). So, the covariance matrices between the groups were assumed to be not equal for the purpose of MANOVA analysis. Since the assumptions — multivariate normality and covariance matrices— are violated, the analysis requires Pillai's trace as an appropriate test to use in this MANOVA analysis (Meyer et al., 2006).

Table 4. MANOVA results show multivariate effects of picture and distinctiveness factors on the combination of five dependent variables.

IVs	Pillai's					Partial	Observed
	trace	F	df	Error df	P	η^2	power
Picture	.024	.988	5.000	200.000	.426	.024	.349
Distinctiveness	.190	4.221	10.000	402.000	<.001*	.095	.999
Picture * Distinctiveness	.100	2.114	10.000	402.000	.022*	.050	.902

*Statistically significant difference: $p < 0.05$

The descriptive statistics of the MANOVA analysis showed that people's reactions in response to pictures and distinctiveness messages generally varied in different conditions (see Table 7 in Appendices II). The multivariate tests in MANOVA revealed that the main effect of the picture variable on the combination of the five dependent variables was not significant, $F(5,200) = .988, p = .426$; Pillai's trace = .024. There was a significant effect of distinctiveness on the combination of dependent variables, $F(10,402) = 4.221, p <.001$; Pillai's trace $< .190$. The effect size was medium (partial $\eta^2 = 0.09$), and the observed power was .99, indicating that

there was an almost 100% chance that the results could have come out significant (see Table 4). However, these main effects were qualified by a significant interaction between picture and distinctiveness, $F(10,402) = 2.114, p = .02$; Pillai's trace = .100.

Since the interaction is significant between distinctiveness and pictures, I further investigated into their effects on dependent variables by exploring simple effects in order to identify where the effects lie. The simple effect analyses aimed to test H1 and H2.

Hypothesis 1

H1 predicts that people's exposure to damaging pictures (vs. action pictures) of the Mauritius oil-spill crisis is more likely to elicit a) higher crisis responsibility, b) higher negative emotion, c) higher negative word of mouth, d) higher punitiveness, and e) lower purchase intention. Fisher's least significant difference (LSD)-adjusted pairwise comparisons explored the simple effects, indicating that when no distinctive messages were provided, the damaging pictures elicited significantly higher negative emotions among participants compared to action pictures, ($p = .025, 95\% CI = 0.076$ to 1.108). Similarly, when no distinctive messages was exposed to participants, their punitiveness attitude toward the company was significantly higher in response to damaging pictures compared to action pictures, ($p = .047, 95\% CI = 0.008$ to 0.992). In four other conditions where either high or low distinctive messages were provided together with pictures, people's reactions did not significantly differ based on pictures. A total of five dependent variables were tested in this analysis. However, this study did not identify significant influence of pictures on three other dependent variables — crisis responsibility ($p = .351$), negative word of mouth ($p = .076$), and purchase intention ($p = .835$). Therefore, the H1 was partially accepted, where H1(b) and H1(d) were accepted and H1(a), H1(c), and H1I were rejected (see Table 5).

Table 5. Pairwise comparison results showing the simple effects of action pictures and damaging pictures on five DVs based on three separate levels of distinctiveness (i.e., no, low, and high).

DV	IVs		Mean Difference (I-J)	Std. Error	<i>p</i> value ^b	95% CI for Difference ^b		
	Distinctive ness	(I) Picture				(J) Picture	Lower Bound	Upper Bound
Crisis	No	Damage	Action	.220	.236	.351	-.244	.685
Responsibility	Low	Damage	Action	.222	.225	.327	-.223	.666
	High	Damage	Action	-.306	.236	.197	-.771	.160
Negative Emotion	No	Damage	Action	.592*	.261	.025	.076	1.108
	Low	Damage	Action	.378	.250	.132	-.115	.872
	High	Damage	Action	-.239	.262	.364	-.755	.278
Negative Word of Mouth	No	Damage	Action	.523	.293	.076	-.055	1.101
	Low	Damage	Action	-.027	.281	.923	-.580	.526
	High	Damage	Action	-.023	.294	.937	-.603	.556
Punitiveness	No	Damage	Action	.500*	.250	.047	.008	.992
	Low	Damage	Action	-.054	.239	.821	-.525	.417
	High	Damage	Action	-.241	.250	.336	-.735	.252
Purchase intention	No	Damage	Action	.054	.261	.835	-.459	.568
	Low	Damage	Action	-.261	.249	.296	-.753	.230
	High	Damage	Action	.104	.261	.692	-.411	.619

*. The mean difference is significant at the .05 level.

b. Adjustment for multiple comparisons: Least Significant Difference (equivalent to no adjustments).

Hypothesis 2

H2 predicts that people's exposure to high distinctive (vs. low distinctive) messages is more likely to elicit their a) lower crisis responsibility, b) lower negative emotion, c) lower negative word of mouth, d) lower punitiveness, and e) higher purchase intention.

Fisher's least significant difference (LSD)-adjusted pairwise comparisons of simple effects revealed that as hypothesized, high distinctive messages (vs. low distinctive messages) led participants to express lower crisis responsibility ($p < .001$, 95% $CI = 0.566$ to 1.455), lower negative emotion ($p < .001$, 95% $CI = 0.432$ to 1.419), lower negative word of mouth ($p < .001$, 95% $CI = 0.483$ to 1.589), lower punitiveness ($p = .009$, 95% $CI = 0.157$ to 1.100), and higher purchase intention ($p < .001$, 95% $CI = 0.571$ to 1.555) for damaging picture condition.

Similarly, for action picture condition, high distinctiveness messages (vs. low distinctive messages) led to people's lower crisis responsibility ($p = .042$, 95% $CI = 0.018$ to 0.949), lower negative word of mouth ($p < .001$, 95% $CI = 0.460$ to 1.620), and higher purchase intention ($p = .008$, 95% $CI = 0.183$ to 1.213). However, in this condition of action picture, this study did not find significant difference in people's reactions for negative emotion ($p = .240$) and punitiveness ($p = .080$). Therefore, H2 was partially accepted. Specifically, H2(a), H2(c), and H2(e) were accepted while H2(b) and H2(d) were partially accepted (see Table 6).

Table 6. Pairwise comparison results showing the simple effects of high distinctiveness and low distinctiveness on five DVs based on two separate levels of pictures (i.e., action pictures and damage picture).

DVs	Picture	IVs		Mean Difference (I-J)	Std. Error	p value ^b	95% CI for Difference ^b	
		(I) Distinctiveness	(J) Distinctiveness				Lower Bound	Upper Bound
Crisis Responsibility	Damage	No	Low	-.635*	.227	.006	-1.08	-0.19
		Low	High	1.011*	.225	<.001	0.57	1.46
		High	No	-.375	.227	.100	-0.82	0.07
	Action	No	Low	-.634*	.234	.007	-1.10	-0.17
		Low	High	.483*	.236	.042	0.02	0.95
		High	No	.151	.244	.538	-0.33	0.63
Negative emotion	Damage	No	Low	-.332	.252	.189	-0.83	0.16
		Low	High	.926*	.250	<.001	0.43	1.42
		High	No	-.593*	.252	.019	-1.09	-0.10
	Action	No	Low	-.546*	.260	.037	-1.06	-0.03
		Low	High	.309	.262	.240	-0.21	0.83
		High	No	.237	.271	.382	-0.30	0.77
Negative word of mouth	Damage	No	Low	-.424	.283	.135	-0.98	0.13
		Low	High	1.036*	.281	<.001	0.48	1.59
		High	No	-.612*	.283	.031	-1.17	-0.06
	Action	No	Low	-.974*	.291	<.001	-1.55	-0.40
		Low	High	1.040*	.294	<.001	0.46	1.62
		High	No	-.066	.304	.829	-0.67	0.53
Punitiveness	Damage	No	Low	-.187	.241	.437	-0.66	0.29
		Low	High	.628*	.239	.009	0.16	1.10
		High	No	-.441	.241	.068	-0.92	0.03
	Action	No	Low	-.742*	.248	.003	-1.23	-0.25
		Low	High	.441	.250	.080	-0.05	0.94
		High	No	.300	.259	.248	-0.21	0.81
Purchase intention	Damage	No	Low	.497*	.251	.049	0.00	0.99
		Low	High	-1.063*	.249	<.001	-1.56	-0.57
		High	No	.566*	.251	.025	0.07	1.06
	Action	No	Low	.182	.259	.484	-0.33	0.69
		Low	High	-.698*	.261	.008	-1.21	-0.18
		High	No	.516	.270	.057	-0.02	1.05

* The mean difference is significant at the .05 level.

^b Adjustment for multiple comparisons: Least Significant Difference (equivalent to no adjustments).

Note. This table shows the effects of “no distinctiveness” as well, but it was not reported and interpreted as H2 focuses on only high distinctiveness and low distinctiveness.

Research question

The RQ aims to explore the extent to which pictures in the oil spill moderate the relationship between distinctive messages and people's attitudes. The interaction effects yielded that the relationship between distinctiveness and people's attitudes was moderated by picture content, with a small effect size (partial $\eta^2 = .05$). The observed power was 0.902, indicating that there was a 90% chance that the results could have come out significant. Such moderation effect was identified in all dependent variables, except crisis responsibility. For damaging picture content, when people are exposed to only damaging content (vs. a combination of damaging content and high distinctive messages), they have higher negative emotions toward the company ($p = .008$, 95% $CI = 0.183$ to 1.213). While for action picture content,

The patterns of interaction effects of picture and distinctiveness on crisis responsibility, negative emotion, negative word of mouth, punitiveness, and purchase intention are illustrated in Graphs 1-5 in Appendices II. Though the figures cannot yield whether a particular interaction is significant or not, the figures provided a quick idea of the interaction patterns.

Chapter 5: Discussion and Conclusion

5.1. Introduction

This dissertation examines the effects of picture and an organization's prior performance (i.e., distinctiveness) on people's various reactions toward the organization in crisis. Five reactions tested in this study are a) crisis responsibility, b) negative emotion, c) negative word of mouth, d) punitiveness, and e) purchase intention. A central idea of this investigation is that visuals have been largely ignored in prior crisis communication studies, which lacks research evidence relating to visual content in understanding a crisis and devising evidence-guided crisis response strategies. Thanks to the human brain's power of analyzing visual content (Ware, 2013) and the pervasive use of visuals in this era of social media and the internet (Thomson et al., 2020), the crisis communication field needs, even more urgently than before, further exploration of and insights from visual influence.

Aiming to contribute to the visual crisis communication, this study conducted a 2 (pictures: action vs. damage) \times 3 (distinctiveness: high vs. low vs. no) between-subject experimental design, informed by the SCCT (Coombs, 2007b) and attribution theory (Kelly, 1973; Weiner, 1986; Coombs, 2007a). Along with the effects of pictures, distinctiveness (i.e., company's prior good or bad performance information) has also been tested in this study to see its effects and how both pictures and distinctiveness interact with each other to influence people's reactions in the Mauritius oil-spill crisis. The test of distinctiveness is based on the literature that demonstrates its power to frame people's causal responsibility (Kelly, 1973; Coombs, 2007a) and contribute to how news media content is framed in PR contexts (Hallahan, 1999), influencing the process of perceiving attribution about a company in crisis.

5.2. Picture Effects

Visual stimuli manipulation was created using pictures (i.e., action pictures and damaging pictures). Compared to the action pictures, the damaging pictures elicit significantly higher negative emotion among participants and their higher punitiveness toward the company. Two broad aspects of the picture effects appear in the results. One is the effect of pictures without distinctiveness, and another is the effect of pictures on two reactions (i.e., negative emotion and punitiveness) out of five ones tested in this study. Both aspects are elaborated on below.

5.2.1. Picture effect without distinctiveness

The effect of pictures on these two reactions appears statistically significant when the pictures are presented alone, without combining them with the company's prior performance information (i.e., distinctiveness messages). In other words, when the distinctiveness messages, either high or low, are presented along with pictures to participants, pictures' influence in eliciting their negative emotion and punitiveness reactions became non-significant. Investigating its reasons was beyond this study's purpose. Two explanations, however, might shed light on the potential reasons:

1) One probable explanation is related to distinctiveness stimuli that pictures' influence was wiped out by distinctiveness effect. For this study's purpose, distinctiveness texts were deliberately constructed as highly salient, making a wider difference between the high and low distinctiveness of the company. Such extreme distinctiveness differences between its high and low conditions might have wiped out the effect of pictures, resulting in the drop of visual content's influence to the non-significant level when pictures are combined with distinctiveness.

2) Another potential explanation is related to the picture stimuli. Both stimuli (i.e., action and damage) of pictures were constructed using pictures that were published by various news

media outlets. Though pictures of the two conditions were divided into action and damaging categories following a prior study (Ali & Kinsey, In Press), all the pictures were of the Mauritius oil-spill crisis. Pictures in the damaging condition show the spill's negative content, like dolphin carcass. At the same time, pictures in the action condition might still have contained some visual elements that activate people's brain nodes relating to the oil spill's negative aspects, as the pictures somehow remind the oil spill. Though the study by Ali and Kinsey (In Press) identified pictures into two opposite categories (i.e., action and damage), the cognitive arousal difference between the categories might not be stronger enough to elicit significantly different reactions in some cases, especially when stronger distinctiveness texts are combined with them.

5.2.2. Picture effect on two reactions

Only two reactions, such as negative emotion and punitiveness, were significantly influenced by pictures. Three other reactions, such as crisis responsibility, negative word of mouth, and purchase intention, did not significantly differ based on pictures.

As per the SCCT (Coombs, 2007b), a crisis is first weighed based on initial crisis responsibility that is influenced by crisis history (e.g., distinctiveness), prior relationship reputation, and crisis response strategies. People's emotion is influenced by crisis responsibility and crisis response strategies. The SCCT's final outcome is people's behavioral intentions (e.g., punitiveness). This study's picture effect apparently is not consistent with the SCCT's propositions as pictures impact emotion (i.e., negative emotion) and one behavior intention (e.g., punitiveness), not the crisis responsibility. A potential explanation for this inconsistent result might be that the relevant scale items used in this study were not appropriate enough to measure visuals-led crisis responsibility. This argument looks supported by this study's other result that shows distinctiveness effect on crisis responsibility. The explanation indicates that the scale

items appropriately measured the crisis responsibility in textual perspective (i.e., distinctiveness), but not in visual perspective, in this study.

Considering the picture effect already identified on two variables, this article argues that there might have been some weaknesses in running the online experiment and/or the scale items, resulting in the p -value slightly higher from the significant level. For the negative word of mouth reaction, the p -value ($p = .076$) is close to the significance level with 95% confidence interval. The current p -value appears as significant with 92% confidence interval. For the purchase intention scale's items, participants were suggested to imagine themselves as crude oil traders. This argument argues that putting on oil traders' shoes during the survey might not have elicited participants' appropriate reactions to the purchase intention items.

5.2.3. Overall effects of pictures

Prior literature provides mixed results about visuals' effects on people's perception and reaction toward a company in a crisis. This study's results contradicted with results of Coombs and Holladay (2009, 2011) that advised crisis managers not to worry about the damaging visuals' effects as those studies did not find sufficient evidence in favor of pictures' influence on crisis responsibility, organizational reputation, anger, and negative word-of-mouth. However, this study's results align with a few other research works, including Gibson and Zillmann (2000), Fraustino et al. (2018), and Spence and Lachlan (2009) that accrue research evidence supporting the effects of visuals on people's perception toward a company during a crisis.

The picture effects demonstrate that when people's attention is more drawn to visuals depicting the company's actions to mitigate the crisis-led damages, compared to visuals showing the spill's harmful consequences, people elicit lower negative perceptions (i.e., negative emotions and punitiveness) toward a company, and vice versa. As explained by attribution

theory (Kelley, 1973; Weiner, 1986), the foci of visual salience are different between action pictures and damaging pictures. The results suggest that action pictures' salience invokes lower internal and higher external attributions while the attributions are opposite for the damaging pictures' salience. The higher internal attributions indicate higher negative reactions to the company and vice versa. Thus, people in this study eventually attribute higher negative reactions toward the company when they consume damaging visuals than those who consume action visuals. The results are supported by Taylor and Fiske (1978), who identified a link between visual salience and causal attribution by reviewing many studies. As evidenced by Kelley (1973) and argued by Coombs (2007b), this study's picture reaction bias was due to differences between people of action and damaging picture conditions in the pictures available to them and in the visual salience of those pictures. This study's results also concur with how the SCCT (2007b) discussed the role of visual framing in understanding a crisis. Though the SCCT did not elaborate on how visual content frames can influence particular people's crisis reactions, this study provided evidence of how people's reactions differ by visual framing and salience.

5.3. Distinctiveness Effects

In contrast to visual manipulation in picture stimuli, distinctiveness stimuli were created using written texts. The effect of distinctiveness was tested on the same five reactions. The effects tested between high and low distinctiveness on each reaction for both action picture and damaging picture conditions resulted in a total of 10 simple effect results. The negative emotion and punitiveness results for the action picture condition are not significant. Eight other significant simple effect results show a company's prior bad performance information, compared to its good performance, leads to people's higher crisis responsibility, higher negative emotion, higher negative word of mouth, higher punitiveness, and lower purchase intention.

As explained by attribution theory (Kelley, 1973; Weiner, 1986) and framing theory (Entman, 1993), the distinctiveness effect results show that participants in the low (vs. high) distinctiveness group tended to show a higher level of internal attributions, which finally leads them to perceive that the company, not the environment, is more responsible for the crisis. In other words, participants in the high distinctiveness group tend to have external attributions, which eventually leads them to perceive that the company is less responsible for the crisis. Thus, the distinctiveness effect as evidenced in attribution theory (Kelley, 1973) is further reinforced in this study. Following propositions of framing theory and attribution theory, the high distinctiveness stimulus exposes the company's prior good performance (e.g., zero violations in environmental safety regulations since 2010) by omitting its bad performance (e.g., at least 50 violations of environmental safety regulations since 2010), where people receive the good performance over another one. Similarly, the low distinctiveness stimulus also highlighted the bad performance message hiding another. Such specific framing and salience in the two distinctiveness groups drew people's attention to the Tweet content and the company differently, arousing their internal and external attributions to the company differently.

Thus, the framing capacity of [written] distinctiveness texts, as argued by (Hallahan, 1999), is demonstrated in crisis communication. Eventually, two groups of people express their behavioral intentions differently, such as negative emotion, negative word of mouth, punitiveness, and purchase intention, as predicted by the attribution theory (Kelley, 1973) and framing theory (Entman, 1993; Fairhurst & Sarr, 1996). In the SCCT, the distinctiveness is considered part of the history that influences crisis responsibility and organizational reputation (Coombs, 2007b).

Though this study did not investigate the distinctiveness concerning organizational reputation, its influence on crisis responsibility is identified in this study, as propositioned in the SCCT (Coombs, 2007b). This study also found the effects of distinctiveness on emotion and three behavioral intentions, which indicates its effects in various stages—from the initial crisis stage to people's behavioral intentions—of the theoretical framework. Significantly, as answered to the RQ, the distinctiveness is moderated by pictures, which was not explored by the SCCT (Coombs, 2007b).

5.4. Interpretation and Contribution

Reading together all simple effects and interaction effects suggests that both visual and textual content contributes to the construction of crisis frames, saliences of selected crisis aspects, and people's perception of a particular crisis. In other words, both text and visual contents frame a crisis type and thus help people assess the crisis causality and develop crisis perceptions toward a company. This dissertation, thus, argues that analyzing either only text messages or only visual messages might not provide full insights into a crisis frame and its type. Identifying a particular crisis type is crucial in crisis communication because such identification determines how severe the crisis is and what crisis responses strategies might need to be applied to manage the crisis (Coombs, 2007a; Coombs, 2007b).

As mentioned in the method chapter, 78 participants could not pass the picture stimuli manipulation check but were not excluded from the analysis. In terms of their distribution among conditions, participants who failed the picture manipulation checks are significantly higher in the action picture groups than damage picture groups. Specifically, only one participant failed the damage picture manipulation, and 77 others failed the action picture manipulation. Despite their failure to pass this manipulation check, the results indicate that the participants' overall reactions

varied by pictures, at least for negative emotion and punitiveness. They expressed higher negative emotions and punitiveness in response to damaging pictures than action pictures. It seems that even though people do not "consciously" notice visual content, their reactions may still matter. The results indicate participants' larger capacity of temporary memory and "unconscious" processing of visual elements existed in the pictures even though they did not notice "consciously," which is supported by previous studies (Sahraie et., 1997; Endress & Potter, 2014). If people would have succeeded in identifying the picture manipulation more explicitly, their reactions might have been stronger than when they failed to do so.

As the SCCT (Coombs, 2007b) says, initial assessment of a crisis and categorization of the crisis type are highly based on how the crisis-related content frames the crisis. Though the SCCT acknowledges the role of pictures in how a crisis is framed, the theoretical model did not elaborate on exactly what types of content (e.g., damaging visuals or written low distinctiveness messages) might frame a crisis in a particular way and elicit internal or external attributions, finally turning it into a certain crisis type (e.g., accidental crisis). In subsequent studies (e.g., Coombs & Holladay, 2009, 2011), crisis managers were suggested not to worry about victim pictures while some other studies (e.g., Gibson & Zillmann, 2000), Fraustino et al., 2018) supported the role of visuals in a crisis. Amid mixed literature, this dissertation responded to the call from Pressgrove et al. (2018) and conducted this experiment testing the effects of visuals in a crisis, along with a company's prior performance. Building on the prior literature, this dissertation offers the following six major contributions to visual crisis communication research.

5.4.1. Visuals matter

Referring to the SCCT's background that crisis managers were employing crisis strategies without research evidence-based guidelines, this dissertation argued that lack of

research evidence is still there, especially from the perspective of how a crisis is framed using visual content. For example, people's crisis reactions (e.g., punitiveness) differ by picture. Therefore, a major contribution of this dissertation is that this research advanced evidence in support of "visuals matter" in crisis communication practice and research.

5.4.2. Damaging pictures elicit negative reactions

The SCCT discussed the overall framing aspect and its importance for assessing a crisis and identifying its type but did not adequately detail what specific framing of various textual and visual content can lead to escalating a crisis into a severe type. This dissertation's results filled the gap in the SCCT's crisis-framing propositions by providing evidence that damaging pictures (vs. action pictures) elicit people's higher negative reactions (i.e., negative emotion and punitiveness), leading to the elevation of a crisis to a more severe level.

5.4.3. Framing devices

Following the results identifying how the picture frames of action and damaging content influence people's crisis reactions, this dissertation argued that not only the framing device of damaging and action pictures, but also other framing devices of visuals (e.g., videos, extended reality, and placement and other uses of visuals) could influence people's crisis perceptions. So, this dissertation's other contribution is that it unearthed the role of visuals and how different visual frames lead to different reactions. From the framing analysis perspective (Entman, 1993; Fairhurst & Sarr, 1996), this research extended evidence in support of further investigating other visual frames in crisis communication. The present media landscape overwhelmed with many visuals (Thomson et al., 2020) indicated the urgent need for further research of visual frames in a crisis.

Along with various framing devices of visual crisis, framing theory (Goffman, 1974; Entman, 1993) indicate that such frames can be there in various levels of communications relating to a crisis —media content, people’s responses (e.g., comments on social media), a company’s strategic crisis responses, and its prior performance (i.e., history). Therefore, framing devices construct meanings of not only a crisis itself but also relevant other aspects of a crisis (e.g., a company's crisis response strategies). A frame, accordingly, needs to be examined from both the perspectives of framing types and its use in all communication levels of a crisis. Coombs (2007b) highlighted framing mostly for initial crisis assessment in the SCCT, leaving the gap in understanding what types of frames influence constructing meanings of a company’s strategic responses, prior performance, and other relevant messages, and how. Filling the gap is beyond the purpose of this research.

However, following the above results, arguments, and framing theory, this dissertation builds on Coombs’ (2007b) framing argument and modifies the SCCT model by extending the use of frames to three nodes of the model such as initial crisis responsibility, prior performance (renamed from “crisis history), and crisis response strategies. The extension comes in two broad dimensions — use of all framing devices and frames’ use of all relevant communication in a crisis— for a fuller understanding of the SCCT model and better crisis management.

To indicate the modification, this dissertation first drew a dotted line in the middle of the SCCT model, which left the above three nodes in the upper part. The upper part is then marked with “frames” on its background (See the upper left side of figure 3). Here, the word “frames” indicates that all three aspects — initial crisis responsibility, crisis responses strategies, and prior performance—are constructed through frames. At the same time, the first bullet point, devices, shows that the frames can be of various devices, including written texts, visual content, and

others. The second bullet point, model nodes, indicates the use of framing devices in all nodes situated in the model's upper part. The extended three nodes are arguably illustrated or constructed through various forms of content, in contrast to the lower part's nodes that are the outcome of people's perceptions constructed through the upper part's frames.

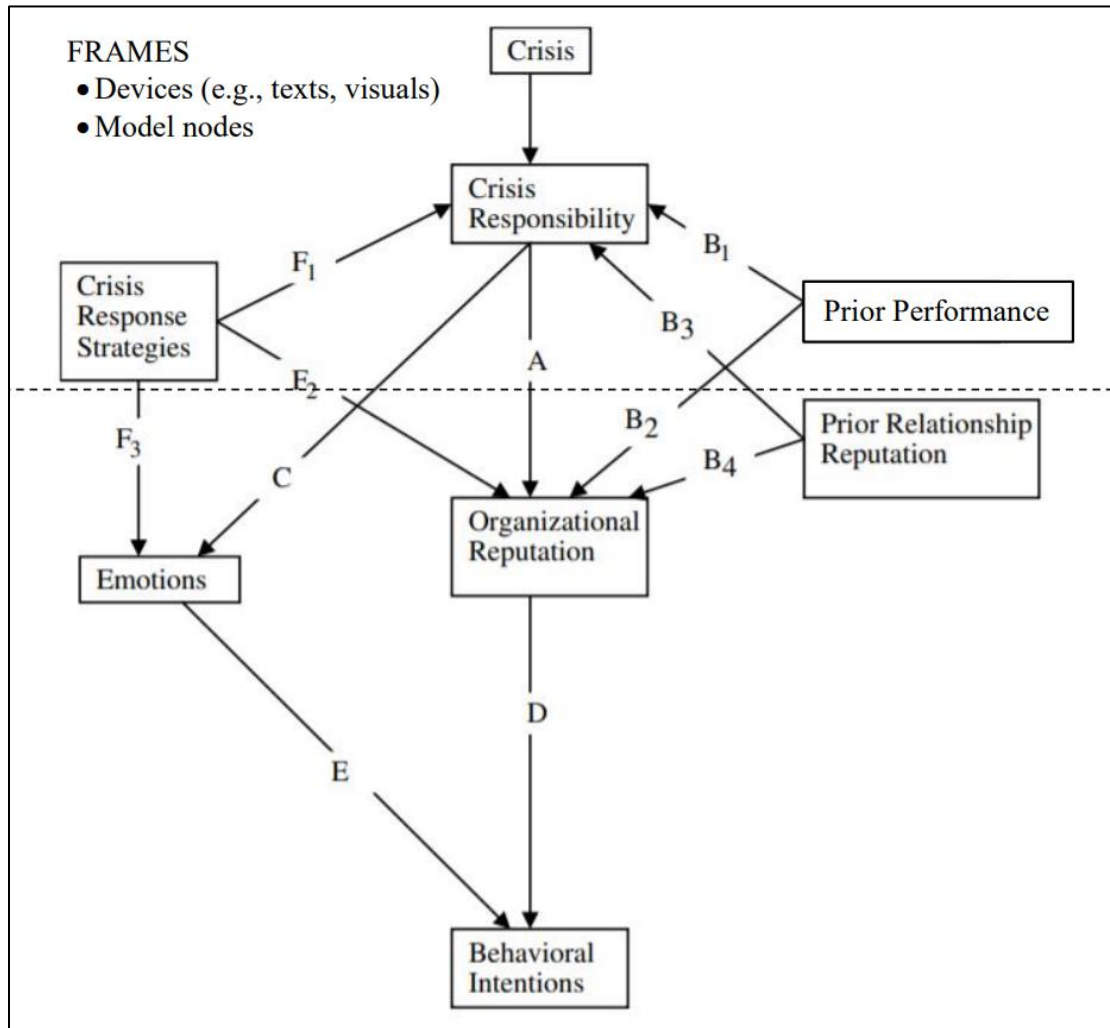
5.4.4. Crisis history

In the SCCT (see Figure 1), "crisis history" is defined as "whether or not an organization has had a similar crisis in the past" (Coombs, 2007b, p. 167). As a role of crisis history, the SCCT states, "an organization that experienced a similar crisis in the past is attributed greater crisis responsibility and suffers more direct and indirect reputational damage than an organization with no history of crises." This dissertation argues that the spectrum of "crisis history" has been drawn narrowly in the SCCT. As evidenced in this research, not only "prior crisis" history, but also relevant other "prior performance" can influence people's perception of an organization's new crisis. For example, this dissertation's distinctiveness stimuli were constructed manipulating using prior performance information that includes both (un)ethical management and performance in complying with the environmental safety regulations. People's crisis responsibility and other behavioral intentions differ by the prior performance content in this dissertation. Therefore, this dissertation suggested bordering the "crisis history" node by incorporating an organization's prior overall management performance. As such, the node "crisis history" is renamed as "prior performance" in the extended model (see Figure 3).

Additionally, a company's crisis responses and relevant media content shaping people's crisis perceptions in an ongoing crisis can contribute to (re)shaping the company's performance perceptions that can be counted as its perceived "prior performance" when another crisis happens

in the future. In other words, actions and frames used in a current crisis can be considered as a company's performance record for a future crisis.

Figure 3. Crisis situation model of extended SCCT.



5.4.5. Twitter context

The experiment's stimuli were constructed in the context of a Twitter account of a company in crisis. This dissertation did not find any other studies that utilized a social media context such as Twitter in experimental research on visual crisis communication. From that perspective, this dissertation added new insights into how people's crisis perceptions and reactions are influenced by various visual frames deployed by a crisis-hit company on its official

tweets. The use of Twitter context used in this research extended the crisis communication knowledge.

5.4.6. Real crisis visuals

Though I constructed the stimuli for this particular study, the pictures here are of the real oil-spill crisis in the Indian Ocean near the Mauritius coast in 2020. After the Mauritius oil spill, the selected pictures were published in various news media outlets. People's reactions to the picture stimuli are important in understanding the news media-constructed frames in a crisis. Thus, this dissertation enriched the crisis communication literature by adding insights from the news media's visual frames in a real crisis scenario.

5.5. Implications

Results of this study can benefit both professional crisis managers and crisis communication researchers, as elaborated below.

5.5.1. Crisis management practice

Crisis managers can benefit from the picture effect identified in this study. In contrast to Coombs and Holladay's (2009, 2011) suggestions not to worry about victim pictures in a crisis, this dissertation recommends crisis managers utilize the picture effect knowledge in two of their crisis management-related works.

First, crisis managers can understand how a crisis is framed using visual content (e.g., damaging and action pictures) and prior performance information, leading to the construction of people's reactions toward their company and turning a crisis into a severe type.

Second, crisis managers can also utilize the knowledge of picture effect and prior performance effect in devising their own strategies aiming to manage a crisis. Additionally, they can benefit from the insights that framing devices can shape content in all three major nodes of

the SCCT model's upper part, such as initial crisis responsibility, crisis response strategies, and prior performance. Since pictures in both action and damaging groups were taken from news media outlets, the results indicate that the news media outlets might not have published extremely positive pictures. In that case, the strategic communication professionals might need to be careful in depending on news media-published pictures when they devise their strategic messages. Rather, they might want to distribute their own pictures instead of fully relying on news media pictures during a crisis. They can supply their pictures to news media outlets and, also, share these visuals to customers via various other channels such as social media platforms (e.g., official Twitter account).

Overall, the extended SCCT model can better inform the strategic communication managers about how a crisis is framed and how they can frame their strategic messages.

5.5.2. Crisis communication research

Future crisis communication research can benefit from this dissertation's results in a few ways, as explained below. First, the modified model of the SCCT offers the need for and opportunities of additional research focusing on frames (e.g., visual and textual frames) from the perspectives of initial crisis assessment, a company's prior performance, and crisis response strategies. Second, the picture effects identified in this study provide evidence for further examination into other forms of visuals in crisis communication. Future research can build on and expand the study's results of picture effects, distinctiveness effects, and, importantly, the use of various forms of framing devices in all three nodes situated in the upper part of the modified SCCT model.

5.6. Limitations & Future Research

Like other research works, this dissertation is not beyond limitations. As an online experimental study in the United States, its causal effect environment was constructed for this research only. So, the effects identified in this research setting might not be the exact same in other contexts and scenarios. The stimuli were constructed as tweets, creating the experimental design as a Twitter, which suggests that saliences and frames in other social media posts (e.g., Facebook, Instagram, TikTok) or news media outlets might be different from those in the tweet(s).

The participants were recruited from a crowdsourcing platform (i.e., Prolific), which might have included people of diverse characteristics. However, randomized assignment of participants to the six conditions was used to mitigate the threats to this validity. Though 78 participants could not correctly answer the picture stimuli manipulation check questions, they were not excluded from the study. This seems to be a limitation of this study, but despite their failure to pass the picture manipulation check, their overall reactions appeared significantly different in at least two dependent variables.

Two limitations are related to the scales used for measuring people's crisis responsibility and purchase intention. The purchase intention questions were constructed as hypothetical because the participants were asked to imagine themselves as crude-oil businessmen while answering the items. As explained above, the crisis responsibility scale's items seem to have been appropriate enough to capture people's crisis responsibility in a visual context, which might have restricted to have a more refined outcome for these two variables. In many visuals-focused studies, people's reactions are measured from the spatial presence perspective.

Therefore, future research is recommended to pay attention to exploring more robust scales and items for measuring people's crisis responsibility in a visual context. The experimental study can be replicated using other social media-led stimuli and in other regions of the world, aiming to have a generalized understanding of the visuals' effects in a crisis situation. As outlined in the sub-section of implications for crisis communication research, this research calls for further examination of visuals in other crisis contexts and with other visuals, including videos, 360-degree videos, virtual reality, augmented reality, 180-degree pictures, interactive infographics, and data visualization. Other crisis contexts that might be used in future research include health misinformation, people's attitudes toward COVID-19 vaccination, advertisement of a product, and water level rising due to global warming. Since people's attention span reduced in the recent years, especially on smartphone contexts due to their quick scrolling habit (Egan, 2016), this dissertation suggests further studies explore how visuals on smartphones influence the users' attitudes and behavior even if they are exposed to such visuals for a few seconds. Future studies can also construct the distinctiveness of stimuli and even the crisis response strategies stimuli utilizing visual content to see how visuals in different nodes of the extended SCCT model frame the content and, thus, influence people's perceptions in a crisis. In this dissertation, the distinctiveness stimuli were constructed using textual messages.

Overall, this dissertation again brought the visual effects and distinctiveness effects on people's reactions in a crisis to the forefront of academic discussion. Despite the limitations, the results and insights explored in this study offer a crucial shape to the crisis communication practice and research.

Appendix I

Scales of Measures

Crisis responsibility

The crisis responsibility was measured using a 7-point, 5 items Likert type scale ranging from 1 = “strongly agree” to 7 = “strongly disagree.” As used by Coombs and Holladay (2002, 2008), the first two items are adopted from McAuley et al. (1992) and the last three items were adopted from Griffin et al., (1992). Scores are averaged in the scale, where the higher score means higher crisis responsibility and lower score means lower crisis responsibility. The five items are:

1. The cause of the oil-spill incident was something the organization could have prevented (reverse coded)
2. The cause of the oil-spill incident is something over which the organization had no power
3. Circumstances, not the organization, are responsible for the oil-spill incident
4. The blame for the oil-spill incident lies with the organization (reverse coded)
5. The blame for the oil-spill incident lies in the circumstances, not the organization

Negative Emotion

The negative emotion scale was measured using a 7-point Likert-type scale ranging from 1 = “strongly agree” to 7 = “strongly disagree.” Four items – two of anger and two of sympathy – used in this study were adapted from Jorgensen (1996). The items are:

Anger

1. I feel annoyed toward the tanker company for what happened. (reverse coded)
2. I feel angry toward the tanker company. (reverse coded)

Sympathy

3. I feel sorry toward the tanker company
4. I feel sympathetic toward the tanker company

Finally, scores are averaged, where higher score means higher negative emotion and lower score means lower negative emotion.

Negative Word of Mouth (NWoM)

Adapted from Coombs and Holladay (2008) with modification, the offline negative word of mouth was measured using a 7-point, three items Likert-type scale ranging from 1 = “strongly agree” to 7 = “strongly disagree.” Subjects were asked to answer this question: please tell us how strongly you agree or disagree with the following statements:

1. If I had a chance, I would encourage my friends or relatives NOT to buy services from MV Wakashio? (reverse coded)
2. If I had a chance, I would say negative things about MV Wakashio and its services to other people. (reverse coded)
3. If I had a chance, I would recommend MV Wakashio’s services to someone who asked my advice?

Finally, scores are averaged, where higher score means higher offline NWoM and lower score means lower offline NWoM.

Punitiveness

The punitiveness scale is measured using a 7-point, four items Likert-type scale ranging from 1 = “strongly agree” to 7 = “strongly disagree.” The four items adapted from Jorgensen (1996, p. 348) were utilized to measure this variable. The items are:

Punishment

1. The company should be fined due to the oil spill (reverse coded)
2. The company should be punished due to the oil spill. (reverse coded)

Forgiveness

3. The company should be forgiven
4. The company should be pardoned

Finally, scores were averaged, where higher score means higher punitiveness and lower score means lower punitiveness.

Purchase Intention

The purchase intention was measured using a 7-point, three items Likert-type scale ranging from 1 = “strongly agree” to 7 = “strongly disagree,” adapted from Taylor and Baker (1994) and Putrevu and Lord (1994). The three items are:

Imagine, you have an oil-trading business that needs to rent a bulk oil carrier for shipping your crude oil. In this situation, how would you agree or disagree with the following statements?


1. The next time I need the services of an oil tanker, I will choose MV Wakashio tanker.
(reverse coded)
2. It is very likely that I will choose MV Wakashio tanker. (reverse coded)
3. I will definitely try MV Wakashio tanker. (reverse coded)

Finally, the scores are averaged, where higher score means higher purchase intention and lower score means lower purchase intention.

Appendix II (Experimental stimuli)

1. Action picture stimulus

← **Tweet**

 **The New York Times** 
@nytimes 



Japanese Tanker MV Wakashio Spills Oil into Mauritius Ocean: Biodiversity at Risk
[nytimes.com](https://www.nytimes.com)

10:20 AM · Aug 14, 2020 · SocialFlow

164 Retweets **15** Quote Tweets **425** Likes

2. Damaging picture stimulus

← **Tweet**

 **The New York Times** 
@nytimes 



Japanese Tanker MV Wakashio Spills Oil into Mauritius Ocean: Biodiversity at Risk
[nytimes.com](https://www.nytimes.com)

10:20 AM · Aug 14, 2020 · SocialFlow

164 Retweets **15** Quote Tweets **425** Likes

3. High distinctiveness stimulus

← **Tweet**

 **The New York Times** 
@nytimes 

Japan's MV Wakashio tanker company again gets high marks from industry groups for ethical management in crude oil transportation. The company also receives an award for maintaining a record of zero violations in environmental safety regulations since 2010.



Global Shipping Industry Report 2019 Released
nytimes.com

11:00 AM · Dec 31, 2019 · SocialFlow

215 Retweets **20** Quote Tweets **540** Likes

4. Low distinctiveness stimulus

← **Tweet**

 **The New York Times** 
@nytimes 

A shipping industry report has again slammed Japan's MV Wakashio tanker company for unethical management in crude oil transportation that has contributed to at least 50 violations of environmental safety regulations since 2010.




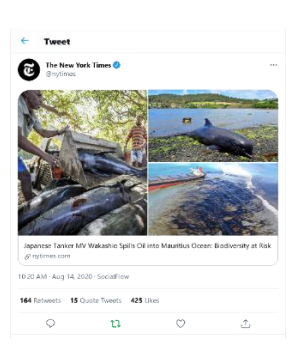

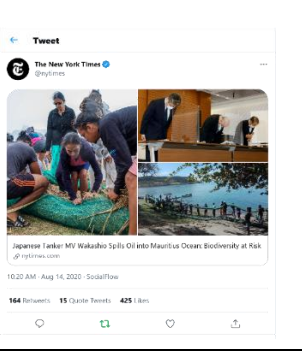

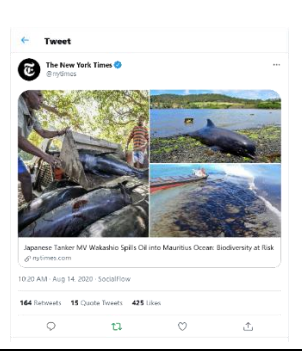
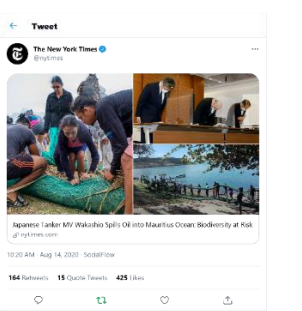
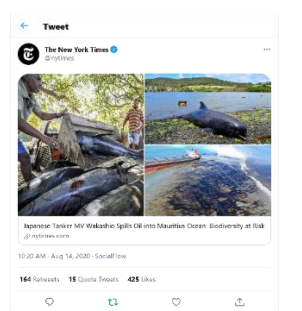


Global Shipping Industry Report 2019 Released
nytimes.com
11:00 AM · Dec 31, 2019 · SocialFlow

215 Retweets **20** Quote Tweets **540** Likes

Figure 4. Participants were randomly assigned to one of these six conditions created using the above four tweets stimuli.

		Action		Picture		Damage	
Distinctiveness	High						
	Low						
	No						

Appendix III

Tables and Graphs

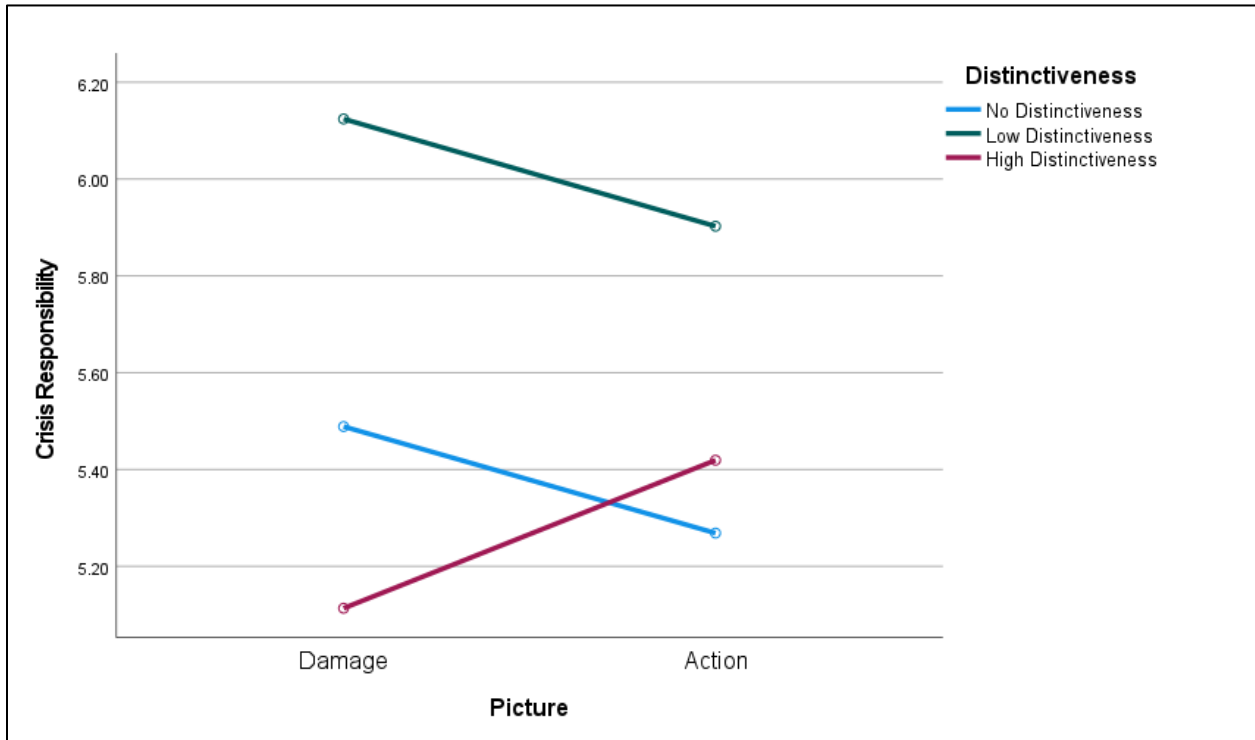
Table 7. Descriptive statistics of participants in each group and the means and standard deviations of their reactions by dependent and independent variables.

DVs	IVs		Mean	SD	N
	Picture	Distinctiveness			
Crisis Responsibility	Damage	No Distinctiveness	5.50	0.94	36
		Low Distinctiveness	6.12	0.72	37
		High Distinctiveness	5.11	1.07	37
		Total	5.58	1.00	110
	Action	No Distinctiveness	5.27	1.22	32
		Low Distinctiveness	5.90	0.83	37
		High Distinctiveness	5.42	1.02	31
		Total	5.55	1.05	100
	Total	No Distinctiveness	5.39	1.08	68
		Low Distinctiveness	6.01	0.78	74
		High Distinctiveness	5.25	1.05	68
		Total	5.56	1.02	210
Negative emotion	Damage	No Distinctiveness	5.70	1.01	36
		Low Distinctiveness	6.03	0.88	37
		High Distinctiveness	5.11	1.12	37
		Total	5.61	1.07	110
	Action	No Distinctiveness	5.11	1.22	32
		Low Distinctiveness	5.66	1.18	37
		High Distinctiveness	5.35	1.02	31
		Total	5.39	1.16	100
	Total	No Distinctiveness	5.42	1.15	68

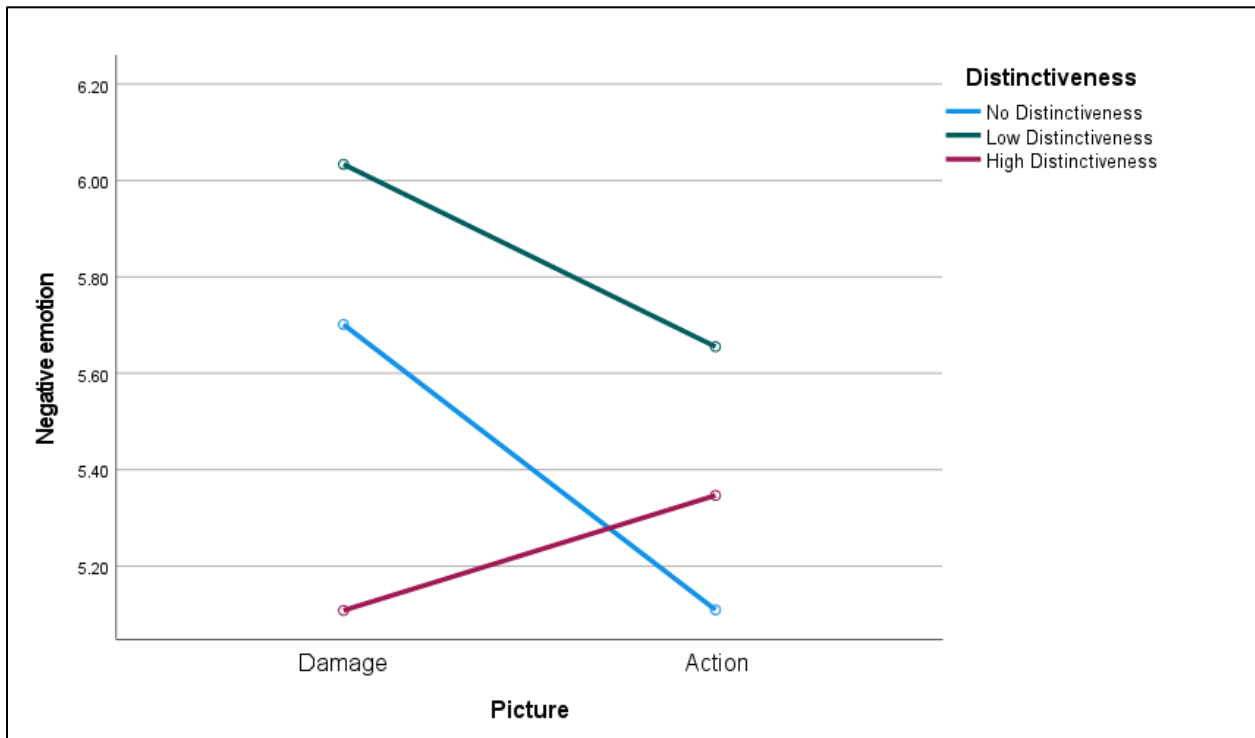
		Low Distinctiveness	5.84	1.05	74	
		High Distinctiveness	5.22	1.07	68	
		Total	5.50	1.12	210	
Negative word of mouth	Damage	No Distinctiveness	5.31	1.18	36	
		Low Distinctiveness	5.74	0.98	37	
		High Distinctiveness	4.70	1.43	37	
		Total	5.25	1.28	110	
	Action	No Distinctiveness	4.79	1.23	32	
		Low Distinctiveness	5.77	1.07	37	
		High Distinctiveness	4.73	1.31	31	
		Total	5.13	1.29	100	
	Total	No Distinctiveness	5.07	1.23	68	
		Low Distinctiveness	5.75	1.02	74	
		High Distinctiveness	4.71	1.37	68	
		Total	5.19	1.28	210	
	Punitiveness	Damage	No Distinctiveness	5.81	0.88	36
			Low Distinctiveness	6.00	0.94	37
			High Distinctiveness	5.37	1.09	37
Total			5.73	1.00	110	
Action		No Distinctiveness	5.31	1.30	32	
		Low Distinctiveness	6.05	0.93	37	
		High Distinctiveness	5.61	1.01	31	
		Total	5.68	1.12	100	
Total		No Distinctiveness	5.58	1.11	68	
		Low Distinctiveness	6.03	0.93	74	
		High Distinctiveness	5.48	1.06	68	
		Total	5.70	1.06	210	
		Damage	No Distinctiveness	2.06	0.97	36

Purchase intention	Low Distinctiveness	1.57	0.76	37
	High Distinctiveness	2.63	1.24	37
	Total	2.09	1.09	110
Action	No Distinctiveness	2.01	1.16	32
	Low Distinctiveness	1.83	0.91	37
	High Distinctiveness	2.53	1.34	31
	Total	2.10	1.17	100
Total	No Distinctiveness	2.04	1.06	68
	Low Distinctiveness	1.70	0.84	74
	High Distinctiveness	2.58	1.28	68
	Total	2.10	1.12	210

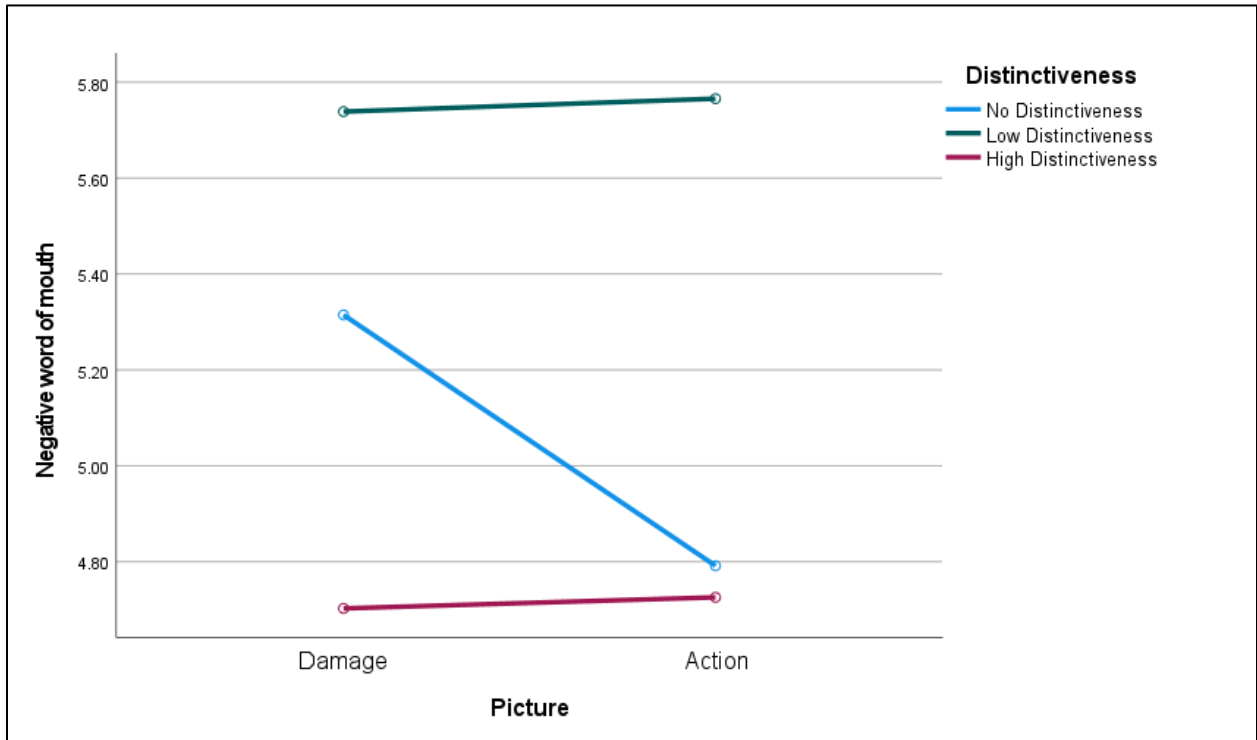
Graph 1. Effects of picture and distinctiveness on crisis responsibility.



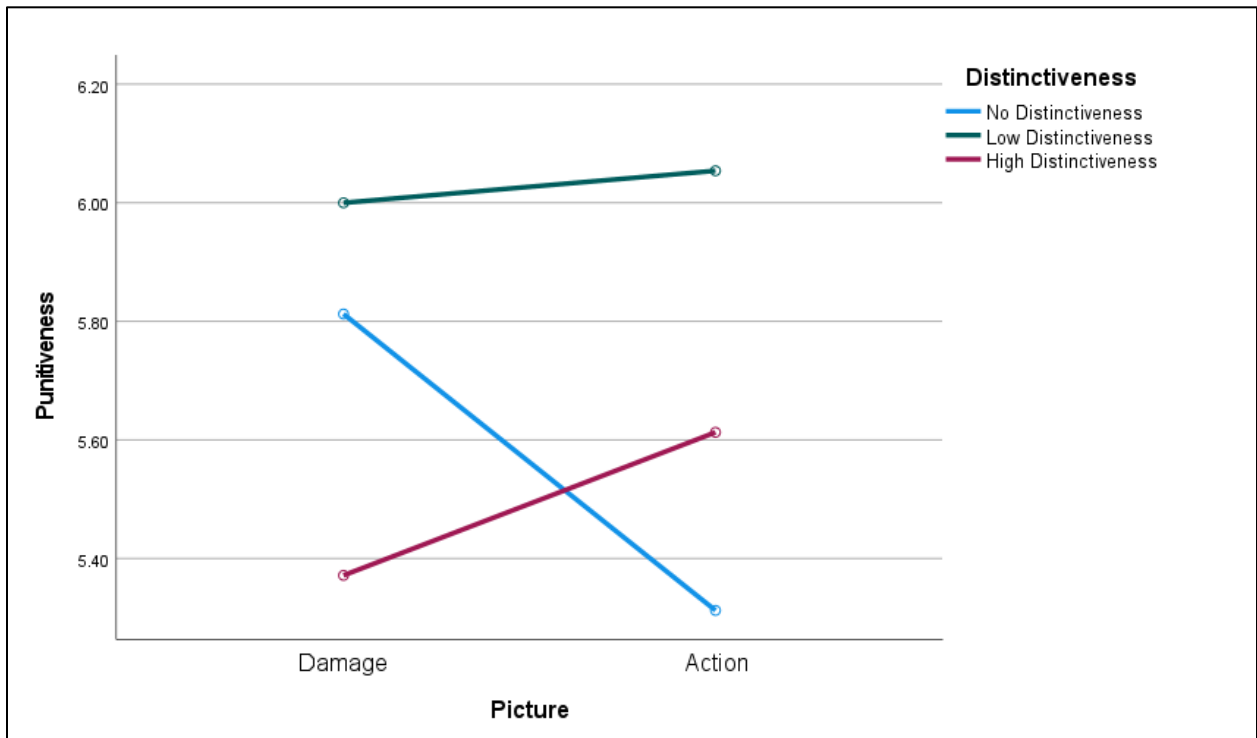
Graph 2. Effects of picture and distinctiveness on negative emotion.

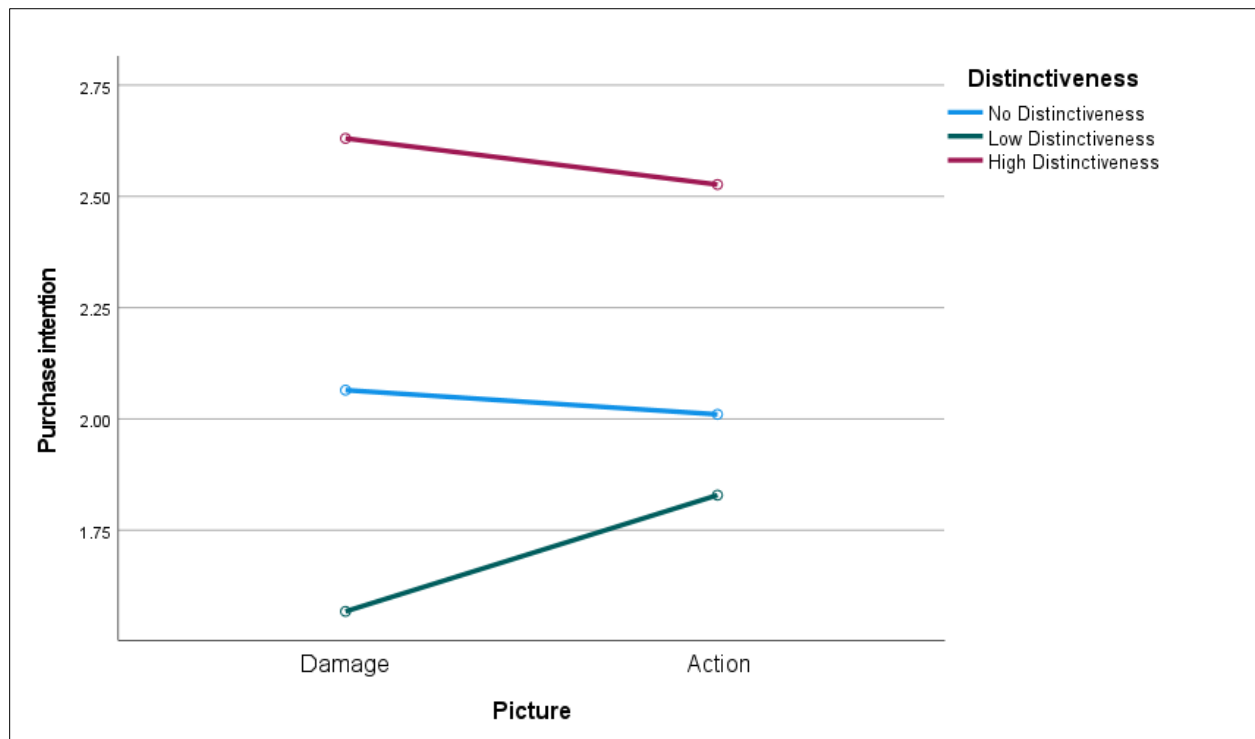


Graph 3. Effects of picture and distinctiveness on negative word of mouth.



Graph 4. Effects of picture and distinctiveness on punitiveness.



Graph 5. Effects of picture and distinctiveness on purchase intention.

Appendix IV (Questionnaire)

Questionnaire created on Qualtrics

Standard: Block 1 - Informed consent (2 Questions)

Standard: Block 2.1 - DoB (1 Question)

Standard: Block 2.2 - Twitter use (1 Question)

BlockRandomizer: 1 - Evenly Present Elements

Block: Block 3.1 - Stimulus HIGH Distinctiveness + Action Tweet (6 Questions)

Block: Block 3.2 - Stimulus LOW Distinctiveness + Action Tweet (6 Questions)

Standard: Block 3.3 - Stimulus Action Tweet (3 Questions)

Block: Block 3.4 - Stimulus HIGH Distinctiveness + Damage Tweet (6 Questions)

Block: Block 3.5 - Stimulus LOW Distinctiveness + Damage Tweet (6 Questions)

Standard: Block 3.6 - Stimulus Damage Tweet (3 Questions)

Standard: Block 4.2 - Manipulation check (picture condition) (1 Question)

Standard: Block 5.1 - Crisis Responsibility scale-1-5 (5 Questions)

Standard: Block 5.2 - Sincerity after crisis (1 Question)

Standard: Block 5.3 - negative emotion (1 Question)

Standard: Block 6 - Attention check question (1 Question)

Standard: Block 7 - Punitiveness (1 Question)

Standard: Block 8.1 - Offline - Negative WoM intentions (3 Questions)

Standard: Block 8.2 - Online - Negative Behavioral Intentions (2 Questions)

Standard: Block 9.1 - Retweet intention (1 Question)

Standard: Block 9.2 - Purchase intention (3 Questions)

Standard: Block 10 - Check if participants saw Tweet content before (1 Question)

Standard: Block 11 - env care & activism (2 Questions)

Block: Default Question Block 12 (9 Questions)

Start of Block: Block 1 - Informed consent

Q1 Dear Respondent:

Thank you for considering taking this survey as part of an important study about oil-spill news reports on Twitter. You are one of the randomly selected participants in the United States. The purpose of this study, which is funded by Syracuse University, is to explore how citizens like you think about oil-spill news content on Twitter. This online survey should take about 8-10 minutes to complete. Please be assured that your responses will remain completely confidential. Your participation in this research is voluntary. You have the right to withdraw at any point during the study, for any reason, and without any prejudice. To better study news content on Twitter, a piece of information about this research design will be withheld from you. We will debrief you at the end.

For questions about the study, please contact the Principal Investigator of this study Dr. Dennis F. Kinsey at dfkinsey@syr.edu. For questions about your rights as a research participant or to

discuss problems, complaints or concerns about a research study, or to obtain information, or offer input, contact the SU Human Subjects office at orip@syr.edu. Whenever one works with e-mail or the internet there is always the risk of compromising privacy, confidentiality and/or anonymity. Your confidentiality will be maintained to the degree permitted by the technology being used. It is important for you to understand that no guarantees can be made regarding the interception of data sent via the internet by third parties.

By clicking the button below, you acknowledge that your participation in the study is voluntary, you are at least 18 years of age, and that you are aware that you may choose to terminate your participation in the study at any time and for any reason.

We very much appreciate your time.

Mohammad Ali
Doctoral Candidate
S.I. Newhouse School of Public Communications
Syracuse University, New York, USA.
Email: mali12@syr.edu

Q2 Please indicate below:

- I agree to participate in this survey (press next >> button on lower right) (1)
- I do not agree to participate in this survey (2)

Skip To: End of Survey If Q2 != 1

End of Block: Block 1 - Informed consent

Start of Block: Block 2.1 - DoB



Q3 In what year were you born?

▼ 2003 (1) ... before 1920 (85)

Skip To: End of Survey If Q3 = 1

End of Block: Block 2.1 - DoB

Start of Block: Block 2.2 - Twitter use

Q4 First, tell us how many days in the PAST MONTH did you use Twitter?

- 0 (1)
- 1 (2)
- 2 (3)
- 3 (4)
- 4 (5)
- 5 (6)
- 6 (7)
- 7 (8)
- More than 7 days (9)

Skip To: End of Survey If Q4 = 1

End of Block: Block 2.2 - Twitter use

Start of Block: Block 3.1 - Stimulus HIGH Distinctiveness + Action Tweet

Q5 The following is a 2019 Tweet posted by *The New York Times* on its official Twitter account about the performance of the Japanese oil-tanker MV Wakashio. Please see the tweet carefully. When you complete, go to the next page.



Q6 Timing

Page Break

Q7 What performance record of the oil-tanker company did you see in the Tweet?

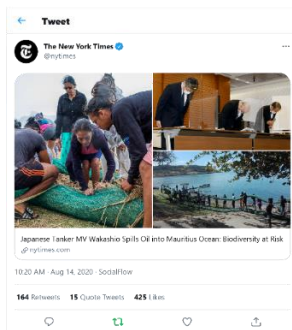
- Ethical management (1)
- Unethical management (2)
- Higher profit (3)
- Fishing (4)
- Don't know (5)

Page Break

Q8 In the next page, you will see another *New York Times*' Tweet posted around one year later in 2020 about the same oil tanker. Please see the Tweet carefully. When you complete, go to the next page

Page Break

Q9



Q10 Timing

End of Block: Block 3.1 - Stimulus HIGH Distinctiveness + Action Tweet

Start of Block: Block 3.2 - Stimulus LOW Distinctiveness + Action Tweet

Q11 The following is a 2019 Tweet posted by The New York Times on its official Twitter account about the performance of the Japanese oil-tanker MV Wakashio. Please see the tweet carefully. When you complete, go to the next page



Q12 Timing

Page Break

Q13 What performance record of the oil-tanker company did you see in the Tweet?

- Ethical management (1)
- Unethical management (2)
- Higher profit (3)
- Fishing (4)
- Don't know (5)

Page Break

Q14 In the next page, you will see another *New York Times*' Tweet posted around one year later in 2020 about the same oil tanker. Please see the Tweet carefully. When you complete, go to the next page.

Page Break

Q15

Q16 Timing

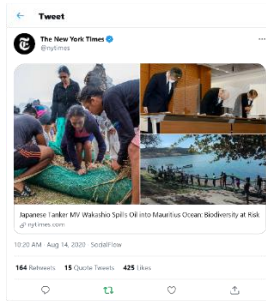
End of Block: Block 3.2 - Stimulus LOW Distinctiveness + Action Tweet

Start of Block: Block 3.3 - Stimulus Action Tweet

Q17 In the next page, you will see a *New York Times*' Tweet on a Japanese oil tanker. Please see the Tweet carefully. When you complete, go to the next page.

Page Break

Q18



Q19 Timing

End of Block: Block 3.3 - Stimulus Action Tweet

Start of Block: Block 3.4 - Stimulus HIGH Distinctiveness + Damage Tweet

Q20 The following is a 2019 Tweet posted by The New York Times on its official Twitter account about the performance of the Japanese oil-tanker MV Wakashio. Please see the tweet carefully. When you complete, go to the next page



Q21 Timing

Page Break

Q22 What performance record of the oil-tanker company did you see in the Tweet?

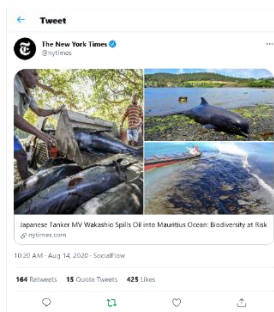
- Ethical management (1)
 - Unethical management (2)
 - Higher profit (3)
 - Fishing (4)
 - Don't know (5)
-

Page Break

Q23 In the next page, you will see another New York Times' Tweet posted around one year later in 2020 about the same oil tanker. Please see the Tweet carefully. When you complete, go to the next page.

Page Break

Q24



Q25 Timing

End of Block: Block 3.4 - Stimulus HIGH Distinctiveness + Damage Tweet

Start of Block: Block 3.5 - Stimulus LOW Distinctiveness + Damage Tweet

Q26 The following is a 2019 Tweet posted by The New York Times on its official Twitter account about the performance of the Japanese oil-tanker MV Wakashio. Please see the tweet carefully. When you complete, go to the next page



Q27 Timing

Page Break

Q28 What performance record of the oil-tanker company did you see in the Tweet?

- Ethical management (1)
 - Unethical management (2)
 - Higher profit (3)
 - Fishing (4)
 - Don't know (5)
-

Page Break

Q29 In the next page, you will see another New York Times' Tweet posted around one year later in 2020 about the same oil tanker. Please see the Tweet carefully. When you complete, go to the next page.

Page Break

Q30



Q31 Timing

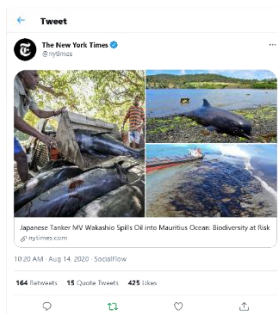
End of Block: Block 3.5 - Stimulus LOW Distinctiveness + Damage Tweet

Start of Block: Block 3.6 - Stimulus Damage Tweet

Q32 In the next page, you will see a *New York Times*' Tweet on a Japanese oil tanker. Please see the Tweet carefully. When you complete, go to the next page.

Page Break

Q33



Q34 Timing

End of Block: Block 3.6 - Stimulus Damage Tweet

Start of Block: Block 4.2 - manipulation check (picture condition)

Q35 What did you see in this Tweet's pictures?

- Losses of marine lives due to the oil-spill (1)
- The company apologized and is working to repair the oil-spill damages. (2)
- People are drinking sea water (3)
- Don't know (4)

End of Block: Block 4.2 - manipulation check (picture condition)

Start of Block: Block 5.1 - Crisis Responsibility scale-1-5

Q36 Now, please tell us how strongly you agree or disagree with the following statements: The cause of the oil-spill incident was something the company could have prevented but was careless.

- Strongly agree (1)
 - Agree (2)
 - Somewhat agree (3)
 - Neither agree nor disagree (4)
 - Somewhat disagree (5)
 - Disagree (6)
 - Strongly disagree (7)
 - Don't know (8)
-

Q37 The cause of the oil-spill incident is something over which the company had no power to control.

- Strongly agree (1)
 - Agree (2)
 - Somewhat agree (3)
 - Neither agree nor disagree (4)
 - Somewhat disagree (5)
 - Disagree (6)
 - Strongly disagree (7)
 - Don't know (8)
-

Page Break

Q38 Circumstances, not the company, are responsible for the oil-spill incident.

- Strongly agree (1)
 - Agree (2)
 - Somewhat agree (3)
 - Neither agree nor disagree (4)
 - Somewhat disagree (5)
 - Disagree (6)
 - Strongly disagree (7)
 - Don't know (8)
-

Q39 The blame for the oil-spill incident lies with the company.

- Strongly agree (1)
- Agree (2)
- Somewhat agree (3)
- Neither agree nor disagree (4)
- Somewhat disagree (5)
- Disagree (6)
- Strongly disagree (7)
- Don't know (8)

Q40 The blame for the oil-spill incident lies in the circumstances, not the company.

- Strongly agree (1)
- Agree (2)
- Somewhat agree (3)
- Neither agree nor disagree (4)
- Somewhat disagree (5)
- Disagree (6)
- Strongly disagree (7)
- Don't know (8)

Page Break

End of Block: Block 5.1 - Crisis Responsibility scale-1-5

Start of Block: Block 5.2 - Sincerity after crisis



Q41 How strongly do you agree or disagree that:

The company seems _____ in mitigating the oil-spill's damages?

	Strongly agree (1)	Agree (2)	Somewhat agree (3)	Neither agree nor disagree (4)	Somewhat disagree (5)	Disagree (6)	Strongly disagree (7)
> Honest (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
> Active (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
> Sincere (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
> Pretending (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
> Fake (5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

End of Block: Block 5.2 - Sincerity after crisis

Start of Block: Block 5.3 - negative emotion



Q42 Please tell us how strongly you agree or disagree with the following statements:

	Strongly agree (1)	Agree (2)	Somewhat agree (3)	Neither agree nor disagree (4)	Somewhat disagree (5)	Disagree (6)	Strongly disagree (7)
> I feel annoyed toward the tanker company for what happened. (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
> I feel angry toward the tanker company. (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
> I feel sorry toward the tanker company. (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
> I feel sympathetic toward the tanker company. (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

End of Block: Block 5.3 - negative emotion

Start of Block: Block 6 - Attention check question

Q43 Here, please select both "Extremely likely" and "Not at all likely" just to make sure you are paying attention to questions.

- Extremely likely (1)
- Very likely (2)
- Somewhat likely (3)
- Not at all likely (4)
- Don't know (5)

End of Block: Block 6 - Attention check question

Start of Block: Block 7 - Punitiveness



Q44 Please tell us how strongly you agree or disagree with the following statements:

	Strongly agree (1)	Agree (2)	Somewhat agree (3)	Neither agree nor disagree (4)	Somewhat disagree (5)	Disagree (6)	Strongly disagree (7)
> The company should be fined due to the oil spill. (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
> The company should be punished due to the oil spill. (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
> The company should be forgiven. (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
> The company should be pardoned. (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

End of Block: Block 7 - Punitiveness

Start of Block: Block 8.1 - Offline - Negative WoM intentions

Q45 Suppose you got a chance to talk about MV Wakashio tanker company with someone. Please tell us how strongly you agree or disagree with the following statements:

If I had a chance, I would encourage someone, who asked my advice, NOT to buy services from MV Wakashio?

- Strongly agree (1)
 - Agree (2)
 - Somewhat agree (3)
 - Neither agree nor disagree (4)
 - Somewhat disagree (5)
 - Disagree (6)
 - Strongly disagree (7)
 - Don't know (8)
-

Q46 If I had a chance, I would say negative things about MV Wakashio and its services to other people.

- Strongly agree (1)
 - Agree (2)
 - Somewhat agree (3)
 - Neither agree nor disagree (4)
 - Somewhat disagree (5)
 - Disagree (6)
 - Strongly disagree (7)
 - Don't know (8)
-

Q47 If I had a chance, I would recommend MV Wakashio's services to someone who asked my advice?

- Strongly agree (1)
- Agree (2)
- Somewhat agree (3)
- Neither agree nor disagree (4)
- Somewhat disagree (5)
- Disagree (6)
- Strongly disagree (7)
- Don't know (8)

End of Block: Block 8.1 - Offline - Negative WoM intentions

Start of Block: Block 8.2 - Online - Negative Behavioral Intentions

Q48 I would sign an online petition to boycott this tanker company.

- Strongly agree (1)
 - Agree (2)
 - Somewhat agree (3)
 - Neither agree nor disagree (4)
 - Somewhat disagree (5)
 - Disagree (6)
 - Strongly disagree (7)
 - Don't know (8)
-

Q49 I would write negative comments about this tanker company below this oil-spill Tweet.

- Strongly agree (1)
- Agree (2)
- Somewhat agree (3)
- Neither agree nor disagree (4)
- Somewhat disagree (5)
- Disagree (6)
- Strongly disagree (7)
- Don't know (8)

End of Block: Block 8.2 - Online - Negative Behavioral Intentions

Start of Block: Block 9.1 - Retweet intention

Q50 Suppose you came across the oil-spill Tweet of MV Wakashio on Twitter.

How likely or unlikely would you retweet this oil-spill tweet?

- Very likely (1)
- Likely (2)
- Somewhat likely (3)
- Neither likely nor unlikely (4)
- Somewhat unlikely (5)
- Unlikely (6)
- Very unlikely (7)
- Don't know (8)

End of Block: Block 9.1 - Retweet intention

Start of Block: Block 9.2 - Purchase intention

Q51 Imagine, you have an oil-trading business that needs to rent a bulk oil carrier for shipping your crude oil. In this situation, how much do you agree or disagree with the following statements?

The next time I need the services of an oil tanker, I will choose MV Wakashio company.

- Strongly agree (1)
 - Agree (2)
 - Somewhat agree (3)
 - Neither agree nor disagree (4)
 - Somewhat disagree (5)
 - Disagree (6)
 - Strongly disagree (7)
 - Don't know (8)
-

Q52 It is very likely that I will choose MV Wakashio company.

- Strongly agree (1)
- Agree (2)
- Somewhat agree (3)
- Neither agree nor disagree (4)
- Somewhat disagree (5)
- Disagree (6)
- Strongly disagree (7)
- Don't know (8)

Q53 I will definitely try MV Wakashio company.

- Strongly agree (1)
- Agree (2)
- Somewhat agree (3)
- Neither agree nor disagree (4)
- Somewhat disagree (5)
- Disagree (6)
- Strongly disagree (7)
- Don't know (8)

End of Block: Block 9.2 - Purchase intention

Start of Block: Block 10 - Check if participants saw Tweet content before

Q54 Did you see Tweets or news reports regarding MV Wakashio's oil spill before taking this survey?

- Yes (1)
- No (2)

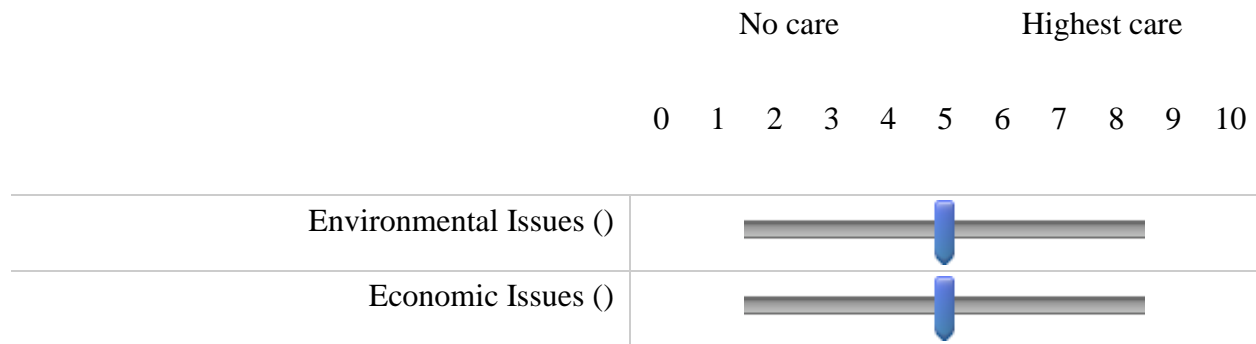
Page Break

End of Block: Block 10 - Check if participants saw Tweet content before

Start of Block: Block 11 - env care & activism

Q55 Following questions are NOT about the oil-spill. In general, how much do you care about environmental issues and economic issues?

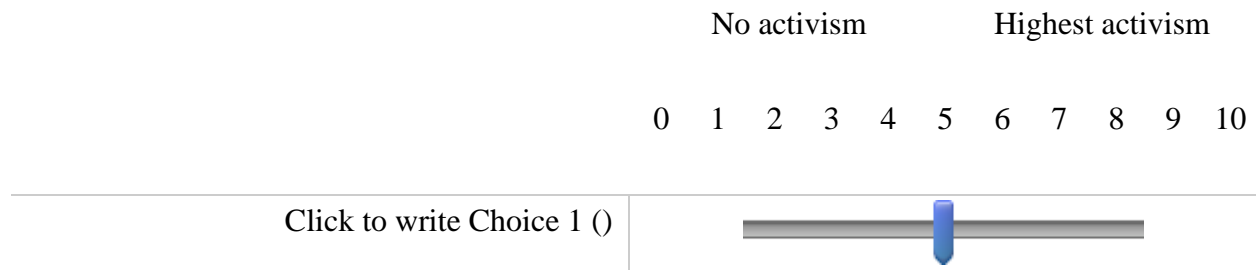
Indicate by sliding the following scale, where 0 (zero) means no care and 10 (ten) means the highest care .



Page Break

Q56 How much do you consider your presence on Twitter as environmental activism.

Indicate by sliding the following scale, where 0 (zero) means no activism and 10 (ten) means the highest activism.



End of Block: Block 11 - env care & activism

Start of Block: Default Question Block 12

Q57 The following couple of questions are asked for statistical purposes only.

What is your gender identity:

- Male (1)
- Female (2)
- Other (3) _____

Q58 What is the last grade or class that you completed in school?

- Grade 1-8 (1)
- High school incomplete (2)
- High school graduate (3)
- Technical, trade, or vocational school after high school (4)
- Some college (5)
- College graduate (6)
- Post-graduate training or professional schooling after college (7)
- Don't know (8)

Page Break



Q59 In general, would you describe your political views as:

- Conservative (1)
 - Moderate (2)
 - Liberal (3)
 - Don't know/ others (4)
-

Page Break



Q60 In which one of the following racial groups would you place yourself?

- White (Caucasian) (1)
 - Black or African-American (2)
 - Asian or Asian-American (3)
 - American Indian or Alaska Native (4)
 - Pacific Islander (5)
 - More than one (6)
 - Other, please specify (7) _____
 - Don't know (8)
-

Q61 In which state do you currently reside?

▼ Alabama (1) ... I do not reside in the United States (53)

Page Break



Q62 Finally, we'd like to ask you one financial question. The information you provide will be treated in strict confidence.

Would you please tell us what your total family income was, before taxes, during 2020?

▼ Less than \$15,000 (1) ... Don't know (30)

Page Break

Q63

Please give your unique Prolific ID here:

Q64 Your unique Completion Code is: #####

Q65

To complete the survey, please select the next >> button below.

End of Block: Default Question Block 12

Thank you for participating in this study.

The Tweets are actually made up for this study to understand how people perceive a crisis-hit company following various types of content in a Tweet. Please do not tell anyone else about this deception of the study. By keeping this to yourself, you can help advance communication research. If you want to withdraw your data, please contact researcher Mohammad Ali (mali12@syr.edu). Thank you so much again!

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VITA
MOHAMMAD ALI

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APPOINTMENTS

- 2021– **University of Maryland**, College Park, MD, USA
Present - Research Assistant, Computational Journalism Lab
- 2019– **Syracuse University**, Syracuse, NY, USA
2021 - Adjunct Instructor, S.I. Newhouse School of Communications
- Instructor Associate, S.I. Newhouse School of Communications
- Research Team Member, Semantic Forensics DARPA project
- Research Assistant for *Dr. Dennis Kinsey*
- 2015– **University of Texas at Tyler**, Tyler, TX, USA
2017 - Teaching Assistant, Department of Communication

EDUCATION

- 2018– **Ph.D. in Mass Communications** (defended), Syracuse University, NY, USA
2022 *Dissertation*: Toward extended situational crisis communication theory: Include visuals, prior performance, and framing devices
Advisor: Dennis F. Kinsey
- 2021– **Ph.D. in Information Studies**, University of Maryland, College Park, MD, USA
present *Concentrations*: Misinformation, health informatics, machine learning
Advisor: Naeemul Hassan
- 2020 **C.A.S. in Data Science**, Syracuse University, Syracuse, NY, USA
- 2017 **M.A. in Communication**, University of Texas at Tyler, Tyler, TX, USA
- 2011 **M.S.S. in Public Administration**, University of Dhaka, Dhaka, Bangladesh
- 2009 **B.S.S. in Public Administration**, University of Dhaka, Dhaka, Bangladesh

TRAININGS & CERTIFICATIONS

- 2021 **Certificate in University Teaching**, Syracuse University, USA
- Two-year Future Professoriate Program
- Trained under a teaching faculty mentor

HONORS & AWARDS

Awards

- 2021 Feinberg Dissertation Award
- 2020 Public Relations Certificate of Achievement Award, Syracuse U

Honors & Distinctions

- 2017 One of the top 10% graduate students, UT Tyler
- 2016 First prize (jointly), Tyler Hackathon, Texas

GRANTS & FELLOWSHIPS

Grants

- 2021: Dissertation grant, Syracuse University \$2,000
- 2018: Class research project grant, Syracuse U \$500

Fellowships & Scholarships

- 2020: AEJMC Presidential Diversity & Inclusion Fellowship
- 2018: Syracuse University Graduate Fellowship Tuition & stipend for 1 year
- 2016: Talent Scholarship, UT Tyler \$500
- 2015: New Graduation Fellowship, UT Tyler \$1,000

PEER-REVIEWED JOURNAL ARTICLES

Ali, M. (2022). Fake-news network model: A conceptual framework for strategic communication to deal with fake news. *International Journal of Strategic Communication*, 16(1), 1–17. <https://doi.org/10.1080/1553118X.2021.1988616>

Ali, M. & Kinsey, D.F. (In Press). Crisis management in this visual era: How people perceive a crisis-hit brand through news media pictures. *Visual Communication Quarterly*.

Shi, J., Ali, M., & Chew, F. (In Press). Understanding gratifications for engaging with short-video: A comparison of Tiktok use in the U.S. and China. *International Journal of Mobile Communications*.

Yousuf, M. & Ali, M. (In Press). Competition in the telecom sector on Facebook in Bangladesh: Building customer relationships. *Journal of Quantitative Description: Digital Media*.

Munno, G., Richards, A., Craig, M., & Ali, M. (2022). Student journalists exhibit different mindsets but agree on the need for truthful reporting. *Media Practice and Education*, 23(1), 55–72. www.tandfonline.com/doi/full/10.1080/25741136.2021.2015817?journalCode=rjmp21

Ali, M. (2021). Donald Trump's immigration speech: How metaphors function to convey messages. *Atlantic Journal of Communication*, 29(1), 1–14. doi.org/10.1080/15456870.2019.1709463

Ali, M. & Velten, J. C. (2017). Relationships between human beings and objects: An extension of parasocial interaction. *The Journal of Communication and Media Studies*, 2(1), 1-9. doi: <https://doi.org/10.18848/2470-9247/CGP/v02i01/1-9>

Ali, M. (2017). Ethical dilemmas in reporting the 1989 Tiananmen Square riot: A case study analysis. *The International Journal of Interdisciplinary Cultural Studies*, 12(2), 13-21. doi: <https://doi.org/10.18848/2327-008X/CGP/v12i02/13-21>

BOOK CHAPTERS

Ali, M. & Kinsey, D.F. (2022). Deceptive power of fake news: Perception of believability centers around visuals, news media, social media and shared values. In J.C. Rhoads, D.B. Thomas, & S.E. Ramlo (Eds.), *Cultivating Q Methodology: Essays Honoring Steven R. Brown* (pp. 269-297). International Society for the Scientific Study of Subjectivity.

MANUSCRIPTS UNDER REVIEW

Ali, M. & Altawil, A. (Under Review). Affective polarization and political engagement in the United States: What factors matter?

PRESENTATIONS

Peer-Reviewed Conference Presentation

Ali, M. & Kinsey, D.F. (2021, August). *Deceptive power of fake news: Perception of believability centers around visuals, news media, social media, and shared value*. Poster presented at the Association for Education in Journalism and Mass Communication (AEJMC) virtual conference.

Ali, M. (2021, August). *Understanding COVID-19-related stigma: A topic modeling and exploratory analysis of tweets*. Poster presented at the Association for Education in Journalism and Mass Communication (AEJMC) virtual conference.

Ali, M. & Kinsey, D.F. (2021, August). *Crisis management in this visual era: How people perceive a crisis-hit brand through news media pictures*. Paper presented at the Association for Education in Journalism and Mass Communication (AEJMC) virtual conference.

Munno, G., Richards, A., Craig, M., & Ali, M. (2021, August). *Student journalists exhibit different mindsets, agree on the need for truthful reporting*. Paper presented at the Association for Education in Journalism and Mass Communication (AEJMC) virtual conference.

Ali, M. (2021, July). *COVID-19 stigmatization on Twitter: A social network analysis*. Paper presented at the Australian & New Zealand Communication Association (ANZCA) Virtual Conference, Melbourne, Australia.

Ali, M. & Kinsey, D.F. (2021, March). *Visuals matter: How people perceive a crisis-hit brand through news media pictures*. Paper presented at the AEJMC Southeast Colloquium (virtual) at Elon University, USA.

- Ali, M.** (2021, May). *I wish “fake news” would be true: A cognitive analysis of how fake news functions and (re)shape social realities of a brand*. Paper presented at the International Communication Association (ICA) virtual conference.
- Ali, M.** & Altawil, A. (2020, August). *Affective polarization and political engagement in the United States: What factors matter?* Paper presented at the Association for Education in Journalism and Mass Communication (AEJMC) virtual conference.
- Ali, M.,** Haque, M. R., & Islam, K. (2020, August). *News media in crisis: “Stealing thunder” needs to be faster*. Paper presented at the Association for Education in Journalism and Mass Communication (AEJMC) virtual conference.
- Shi, J., **Ali, M.,** & Chew, F. (2020, May). *Understanding gratifications for engaging with short-video: A comparison of TikTok use in the U.S. and China*. Paper presented at the International Communication Association (ICA) virtual conference.
- Ali, M.** & Kinsey, D.F. (2019, September). *Fake news: Perceptions of platform and type*. Paper presented at the 35th Annual Q Conference for the Scientific Study of Subjectivity in Naples, Italy.
- Ali, M.** (2019, August). *Joining politics while playing cricket in Bangladesh: How the brand reputation of a cricket hero is (re)shaped on social media*. Paper presented at the Association for Education in Journalism and Mass Communication (AEJMC) conference in Toronto, Canada.
- Ali, M.** & Uddin, J. (2019, August). *How hospitals in Bangladesh use facebook to convey health messages: An analysis of top ranked public hospitals’ Facebook pages*. Paper presented at the Association for Education in Journalism and Mass Communication (AEJMC) conference in Toronto, Canada.
- Yousuf, M. & **Ali, M.** (2019, May). *Building relationships through ‘software of the mind’: How corporations in Bangladesh use cultural elements to engage consumers on Facebook*. Paper presented at the International Communication Association (ICA) conference in Washington D.C., USA.
- Ali, M.** (2018, April). *Political harmonization in Bangladesh: An inductive mixed-methods analysis of the role of traditional print media*. Paper accepted at the 60th annual conference of the Western Social Science Association, San Antonio, USA.
- Ali, M.** (2017, August). *Use of Facebook in Bangladesh public relations: A case study analysis*. Paper presented at the AEJMC Conference in Chicago. Retrieved from <http://www.aejmc.org/home/wp-content/uploads/2017/07/South-Asia-Research-Mircotalks-2017.pdf> (pp. 66-69)
- Ali, M.** (2017, July). *Donald Trump’s speech on immigration: A metaphorical analysis*. Paper accepted at the annual conference of the International Association for Media and Communication Research (IAMCR), Cartagena, Colombia. Retrieved from <https://iamcr.app.box.com/s/2lrd208ej2m3tzip371uwnw1553sjb99l>

Ali, M. (2017, July). *Ethical dilemmas in reporting the 1989 Tiananmen Square Riot: A case study analysis*. Paper presented at the Twelfth International Conference on Interdisciplinary Social Sciences, Hiroshima, Japan.

Ali, M. (2017, April). *Facebook effects on social relationships in Bangladesh: A media ecological analysis*. Paper presented at the annual student research showcase at The University of Texas at Tyler, USA.

Ali, M. & Velten, J. C. (2016, September). *Relationships between human beings and objects: An extension of parasocial interaction*. Paper presented at the Communication and Media Studies Conference, University Center, Chicago, USA.

Ali, M. (2016, February). *Mediated texts in the film Lagaan: A Marxist analysis on perpetuation of hegemonic power structure in the Indian subcontinent*. Paper presented at the LSU Shreveport Student Scholars Forum, Shreveport, LA, USA.

Guest Lectures

- Brown bag lunch lecture on fake-news network model, University of Maryland College Park, Spring 2022
- Guest class lecture on social media analytics in PR, Syracuse University, Spring 2021
- Guest class lecture on social media and communication, Syracuse University, Spring 2020

SELECTED MEDIA APPEARANCES

- Ali, M. (2015, January 8). Output of most audit firms lacks quality: ICABs own assessments reveal. *The Financial Express*. Retrieved from <http://today.thefinancialexpress.com.bd/public/first-page/output-of-most-audit-firms-lacks-quality>
- Ali, M. (2015, July 28). Philips pressing ahead with expansion into Bangladesh. *The Financial Express*. Retrieved from <http://today.thefinancialexpress.com.bd/public/trade-market/philips-pressing-ahead-with-expansion-into-bangladesh>

RESEARCH EXPERIENCE

University of Maryland	College Park, MD
<i>Research Assistant</i> at Computational Journalism Lab	Fall 2021-present
<ul style="list-style-type: none"> • Assisting in health-related misinformation research • Exploring computational framing analysis approaches 	
Syracuse University	Syracuse, NY
<i>Research Team Member</i> , Semantic Forensics DARPA project	Mar-Aug 2021
<ul style="list-style-type: none"> • Created training data for machine learning algorithm on fake news • Assisted PI and Co-PI 	
Syracuse University , S.I. Newhouse School of Public Communications	Syracuse, NY
<i>Research Assistant</i> for Dr. Dennis Kinsey	May 2020-May 2021

- Co-authored in investigating fake news & people's deception
- Assisted in exploring how visuals shape people's perception of a crisis-hit brand

Syracuse University, S.I. Newhouse School of Public Communications
Research Assistant for Professor Shaina Holmes

Syracuse, NY
 Summer 2019

- Assisted in preparing research instruments for an interview study
- Assisted in visual effects research projects

University of Texas at Tyler, Department of Communication
Research Assistant

Tyler, TX
 Fall 2015

- Assisted writing literature review for health communication projects
- Collected grant opportunities on Pivot for research projects

TEACHING EXPERIENCE

Adjunct Instructor, Newhouse School, Syracuse University, NY

COM 107: Communications and Society

- Co-taught as instructor of record. Taught face-to-face & online during COVID-19

Instructor Associate, Newhouse School, Syracuse University

COM 107: Communications and Society

- Taught a class, graded assignments, assisted preparing syllabus, prepared exam questions, quizzes, and addressed students' questions & concerns

Teaching Assistant, Department of Communication, University of Texas at Tyler

MCOM 2375: Principles of PR

MCOM 3395: Writing for PR and Advertising

SPCM 1311: Introduction to Communication Studies

MCOM 2306: Media Design and Production

- Taught some classes, graded student papers, assisted preparing class materials

Teaching Observation, Newhouse School, Syracuse University, NY

PRL 315: Public Relations Research

PRL 206: Public Relations Principles and Concepts

INDUSTRY EXPERIENCE

The Financial Express

Business Reporter

Dhaka, Bangladesh

2012-2015

- Covered corporate sector, Supreme Court. Maintained liaison with companies
- Interviewed national and multinational business personalities
- Covered local and international events on business and development

The New Nation

Staff Reporter

Dhaka, Bangladesh

2008-2012

- Covered news of Supreme Court, International Crimes Tribunal
- Covered press conferences and seminars
- Pitched stories

The Patriot Talon*Staff Writer*

UT Tyler, TX

Fall 2016

- Wrote news report on campus issues
- Pitched stories

PROFESSIONAL SERVICE

Ad hoc Reviewer (# reviewed articles)

- | | |
|---|---------|
| ○ International Journal of Strategic Communication (1) | 2022 |
| ○ Journalism & Mass Communication Quarterly (4) | 2020-21 |
| ○ Public Relations Review (3) | 2021 |
| ○ Atlantic Journal of Communication (2) | 2020 |
| ○ Journal of Communication & Media Studies (1) | 2017 |
| ○ International Journal of Interdisciplinary Cultural Studies (1) | 2017 |

Trainee Reviewer (# reviewed articles)

- | | |
|---|---------|
| ○ Journalism & Mass Communication Quarterly (2) | 2019-20 |
| ○ Journal of Advertising (1) | 2020-21 |

Ad hoc Conference Reviewer

- Association for Education in Journalism and Mass Communication
- International Communication Association

Discussant & Leadership

- Discussant at an AEJMC conference session, Aug 2020
- Digital Media & Strategic Communication Chair, South Asia Comm. Association, 2017-2018

UNIVERSITY SERVICE

- Member, GSG Diversity & Inclusion Committee, University of Maryland, 2022
- Contributed to develop Faculty Information System (FIS) project, Syracuse University, 2021
- Public Relations Officer, Communication Club at UT Tyler, 2016-17
- Joint Secretary, Rotaract Club at UT Tyler, 2016-17
- Bangladesh Students' Association, UT Tyler, 2016-17
- Member, Rover Scout, University of Dhaka, 2005-08

PROFESSIONAL AFFILIATIONS

- | | |
|--|--------------|
| • Associate Member, Public Relations Society of America (PRSA) | 2019-present |
| • Member, Association for Computational Linguistics (ACL) | 2020-present |
| • Member, International Communication Association (ICA) | 2019-present |
| • Member, Association for Education in Journalism and Mass Communication (AEJMC) | 2017-present |
| • Member, American Academy of Advertising | 2020-present |
| • Member, International Society for the Scientific Study of Subjectivity | 2019-present |
| • Member, South Asia Communication Association (SACA) | 2016-present |

ADDITIONAL TRAININGS

- 2022 Tableau Essential Training, LinkedIn Learning
- 2021 Foundations Certification in Brandwatch Consumer Research, Brandwatch
- 2021 Summer Institutes in Computational Social Science (SICSS)
- 2020 Certified Microsoft Office Specialist (MOS) Excel 2016, Microsoft
- 2020 Data Visualization in R with ggplot2, LinkedIn Learning
- 2020 Introduction to Machine Learning [in Journalism], Google News Initiative
- 2019 Grant Proposal Writing Workshop, Syracuse University
- 2017 Python for data journalists: Analyzing money in politics, Knight Center
- 2015 Data journalism: First steps, skills and tools, European Journalism Center

TECHNICAL SKILLS

Python	Tableau	Google Analytics	Illustrator	SPSS	360-Video
R	NodeXL	Brandwatch	InDesign	NVivo	Unity3D